IJHE

ISSN 1999-561X

International Journal of Home Economics

Volume 15 Issue 2 2022

Special Issue

Including selected papers from the *XXIV IFHE World Congress: Home Economics: Soaring Toward Sustainable Development*. 4–10 September, 2022. Atlanta, Georgia, USA.

IFHE is an international Non Governmental Organisation (INGO) in consultative status with the United Nations

IFHE
INTERNATIONAL FEDERATION FOR HOME ECONOMICS

Kaiser-Friedrich-Straße 13
53113 Bonn
Fon +49 (0)228 9212590
Fax +49 (0)228 9212591
E-Mail office@ifhe.org

www.ifhe.org

IFHE
INTERNATIONAL FEDERATION FOR HOME ECONOMICS

Website

For more information please visit the International Journal of Home Economics website: https://www.ifhe.org/ejournal/about-the-journal.

Frequency of publication

The International Journal of Home Economics is published twice a year. Papers for review will be accepted throughout the year to email: intjournalhomeeconomics@gmail.com.

International Journal of Home Economics

Volume 15 Issue 2 2022

Section A: Journal Papers

Section B: Peer-Reviewed Congress Papers

International Journal of Home Economics

Volume 15 Issue 2 2022

Volume 15 Issue 2 2022 Editorial

This issue of the *International Journal of Home Economics* has two sections.

Section A

Non-Congress papers.

Section B

Features articles that were presented at the International Federation for Home Economics XXIV World Congress, 2022 (postponed from 2020), with the theme *Home Economics: Soaring Toward Sustainable Development*. These papers were submitted for peer review and presented at the Congress. These Congress papers are published as received and have not undergone major reformatting or editorial refinement and as such have the status of peer-reviewed Congress papers.

Professor Donna Pendergast https://orcid.org/0000-0002-8305-6127
Editor *IJHE* ✉ intjournalhomeeconomics@gmail.com

Call for Papers: Artificial Intelligence (AI) and Home Economics

International Journal of Home Economics Special Issue

First Draft Papers Due:	1 September, 2023
Peer Review with Feedback to Authors:	10 October, 2023
Final Draft Papers Due:	1 December, 2023
Publication Date:	20 December, 2023

Home Economics has actively engaged with technology, including digital technology, often leading and contributing to its uptake and acceleration because of the nature and broad range of applications related to the field. Artificial Intelligence, one of the elements of the Fourth Industrial revolution, alongside increasingly familiar elements such as cloud computing and big data; is likely to be no exception.

AI is explained as follows:

> Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions (HLEG, 2019).

AI is identified in the 2022 EDUCAUSE Horizon Report (Pelletier et al, 2022), as providing massive benefits and challenges for humankind, along with the need for reskilling and upskilling across existing workforces. A recent review conducted by Chen et al (2020, p. 75264) revealed that "AI has extensively been adopted and used in education, particularly by education institutions, in different forms". Lee (2019, p.149) specifically examined the role of home economics education in the fourth industrial revolution, including the use of AI, concluding that "home economics education in the 4th industrial revolution era should play a leading role in the central role of character education, and intrinsic improvement of various human lives".

This Special Issue is focused on AI and home economics. Invited papers may focus on:

- AI understandings, use and impact
- AI, learning and teaching
- AI and ethics
- AI, personalisation, equity and inclusion
- AI, families and communities
- AI and digital transformation
- AI and new kinds of literacies
- AI and home economics futures

Other relevant themes are welcome.

This call for papers is an invitation to researchers, scholars and authors in the field of AI and home economics to submit their original research to publish in this international journal. All submitted papers will be peer-reviewed and published in an online format. We encourage collaborations across disciplines, so please consider how you might collaborate with experts on this topic.

Advice for authors, including forms to be completed and submitted with the paper for consideration, can be found at: https://www.ifhe.org/ejournal/author-information. For all other enquiries regarding this Special Issue please contact the Editor on the following email address: intjournalhomeeconomics@gmail.com

Final papers should be submitted to intjournalhomeeconomics@gmail.com, clearly stating they are for consideration for publication in the **Special Issue: Artificial Intelligence and Home Economics**. Papers received by the due date (1 September 2023) will enter a double-blind peer review process.

Editor for this Special Issue is Professor Donna Pendergast with Special Guest Co-editor Joy Reynolds, Griffith University.

Donna Pendergast https://orcid.org/0000-0002-8305-6127
Joy Reynolds https://orcid.org/0000-0001-5472-1477

References

Chen, L. Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review, in *IEEE Access, 8*, pp. 75264-75278, doi: 10.1109/ACCESS.2020.2988510.

High Level Expert Group on Artificial Intelligence (2019). *A definition of AI: Main capabilities and disciplines*. https://ec.europa.eu/futurium/en/system/files/ged/ai_hleg_definition_of_ai_18_december_1.pdf

Lee, E. (2019). The Role of Home Economics in the Fourth Industrial Revolution. *Journal of Korean Home Economics Education Association, 31*, 4, 149-161.

Pelletier, K., McCormack, M., Reeves, J., Robert, J., & Arbino, N. (2022). *EDUCAUSE Horizon Report, Teaching and Learning Edition*. EDUCAUSE.

Pendergast, D. & Reynolds, J. (2022). Call for Papers: Artificial Intelligence (AI) and Home Economics. *International Journal of Home Economics, 15*(2), 2-3.

Section A: Journal Papers

PEER-REVIEWED PAPER

The Symbolic Interaction of clothing: The regalia of chiefs in *Anlo* State

Kafui Amivi Kumatia
Accra College of Education, Ghana

Modesta Efua Gavor
University of Cape Coast, Ghana

Abstract

The purpose of the study was to examine the symbolism of clothing regalia used by chiefs in Anlo State in the Volta Region of Ghana. The theoretical approach used was the Symbolic Interactionism Theory in relation to clothing, which focuses on social processes related to how meanings are constructed and reconstructed in everyday life and uses the term 'meaning' more often in this perspective. The study adapted ethnographic design aspects of qualitative research method. The population for the study were the four hierarchy of political authority in the Anlo State. These chiefs are the Awoamefia*, who is the paramount chief of the Anlo State, and the military wing divisional chiefs who are the* Awadada*,* Dusifiaga *and* Miafiaga *and their elders. The study adopted expert purposive sampling technique to sample eight key informants, two for each chief. Data was collected using a semi-structured interview guide with sixteen interview sessions and an observation guide to observe the clothing regalia of the chiefs during the* Hogbetsotso *Festival. The study identified various forms of clothing regalia used by the Anlo State chiefs. These symbols were; the type of cloth (Ewe* Kete*,* Adanuvor *or* Klala*), jumper, a hat* (Fiakuku*), chiefs' sandals (*Fiafokpa*), a walking stick and beads (*Dzonu*) for adornment. The* Lashi *or* Sorshi *also formed part of their clothing regalia. The choice of Anlo State chiefs clothing regalia was influenced by the occasion they attended, colour and their role as chiefs. Occasions like installation, confinement and coronation of the chiefs and festivals depicted them in different clothing regalia. The interaction and interpretation of the symbol to the Anlo State symbolized spiritual protection for them. It also symbolized a historical event and a legacy of their forefathers, as well as depicted their affluence and authority. The scope of the study was limited to the four hierarchy of political authority in the Anlo State. They are* Awoamefia*,* Awadada*,* Dusifiaga *and* Miafiaga *who have authority and rule over the entire Anlo State. The study mainly focused on the clothing regalia used by the Anlo chiefs and its related symbolic meanings which included their clothing and adornments but excluded their throne. The study identified the different forms of clothing regalia used by the Anlo State chiefs and the factors that influenced the choice of their clothing regalia, but the spiritual implications attached to some of the clothing regalia made it difficult to probe further and observe those clothing regalia. Chiefs in Anlo State are revered in the society and the relationship between their clothing regalia and the meanings associated with them are symbolic in the traditional setting therefore, traditional leaders must continue to*

Kumatia, K. A., & Gavor M. E. (2022). The Symbolic Interaction of clothing: The regalia of chiefs in Anlo State. *International Journal of Home Economics, 15*(2), 5-22.

Email: Kafui Amivi Kumatia ✉ Kafuiamivi1@gmail.com

use occasions like durbars, festivals and other ceremonies to sensitize their subjects on the importance of preserving their culture. This will educate the Anlos about the symbolic meanings of the clothing regalia used by their chiefs and also provide good sources of reference materials for the future generation to continue the legacy.

KEYWORDS: ANLO STATE CHIEFS, CLOTHING, CLOTHING REGALIA, CULTURE, SYMBOLIC MEANING

Introduction

Clothing refers to items worn to cover the body (Gilligan, 2016). Clothing has long been an intimate part of humans as earliest studies in the psychology of clothing have distinguished four inherent basic functions of clothing as modesty, immodesty, protection and adornment (Aishwariya, 2018). Other reasons for wearing clothing by other researchers have been explained as group identity, social status and social affiliation (Bellorado, 2020; Safdar et al., 2020). With these reasons, the early human societies focused on the primary functions of clothing as it was very practical and primitive rather than the symbolic messages that clothing communicated.

Clothing is an inseparable part of the human body and through clothing a person makes a first step into the nonverbal communication to the world. Tijana et al. (2014) suggested that, communication through clothing is treated as a basic carrying concept and may imply an aspect of the nonverbal interaction and exchange of information in the society. Clothing can be interpreted as a transmission of information between a carrier and recipient through symbolic messages in the general or specific scope of the dressing culture. Howlett et al. (2013) explained that, it provides a plethora of information about the wearer without having to meet or talk to the person. In that open communication, people create their individuality through their appearance and messages and information about themselves are visually sent and received.

Throughout history, societies have used clothing and various forms of bodily adornment to nonverbally communicate their rank, gender, status, maturity, occupations, class, wealth and group affiliation, serving as a form of free speech (Dzramedo, 2009). Omatseye and Emeriewen (2012) indicated that, clothes still remain a vital tool for the nonverbal communication mode of the language of clothing, indicating the significance that accompanies the motifs and symbols expressed in them. These clothing and various forms of bodily adornment are expressed in the forms of signs, symbols and iconography which served as nonverbal but visual forms of expressing their habits, thought, techniques and conditions that characterized society as a whole (Dzramedo, 2009).

Traditional leaders in our society are embodiment of our culture (Dzivenu, 2011). They are described as “guardians” of traditional norms, values and practices that are respected in particular communities from generation to generation (Chinsinga, 2006) and as such important channel through which social and cultural change can be realized. The chieftaincy institution in Ghana which is highly cherished by most indigenous Ghanaian societies has been very instrumental in the socio-political and economic development in the country (Bewiadzi, 2013). The chieftaincy institution gives a sense of identity and belongingness and also gives an appreciation of what our predecessors did and enables us to reminisce and deduce the things we want to continue (Kleist, 2011). Chieftaincy is predominantly defined in terms of tradition, as Essel (2021) defined tradition as any cultural product created or pursued in whole or in part by past generations, and that having been accepted and preserved in whole or in part by successive generations, it has been maintained to the present. Schramm (2004) also asserted that, the Ghanaian institution of chieftaincy is epitomized as a guarantor of cultural authenticity and it is in the discourse of cultural nationalism that the institution of chieftaincy functions as a major cultural symbol.

Ghanaian chiefs are regarded as custodians of the nation's cultural beliefs and practices, their position as intermediaries between the ancestral spirits and the people they represent makes them sacred figures and their regalia sacred objects (Senah, 2013). Chiefs in Ghana, particularly in the Anlo State are traditionally both the political head and the religious head, and the prohibitions relating to their conduct and mannerisms are all intended to remind them, their subjects and others that, the position they occupy are sacred including their regalia. This belief is the source of the great dignity, respect and veneration with which they are always treated (Oku, 2013).

Culture cannot be devoid of clothing for the reason that, the importance of clothing transcends cultures, times and geography. Culture is important for every society and like history; it provides the basis to assess the past and to provide a compass for the future. Culture explained by Marrie (2008) refers to the language, beliefs, values and norms, customs, roles, knowledge, skills and all other things people learn that make up their way of life especially 'dress'. Anquandah (2013) viewed culture as a totality of the lifestyle of a particular group of people and also described culture as a psychic fabric, a second skin and an organic component of a nation. Hence, clothes are used to express cultural values and social norms that provide shape and structure to society. Tijana et al. (2014) stated that, the symbolism of clothing determines a person and what is worn in the broader social and cultural milieu as some anthropologists refer to clothing as "the social skin" (Gilman, 2002). It is also culture that decides what, when and how to wear certain clothes and guides its members to interpret the messages communicated through them (Park Larsson, 2014).

Different cultures have different costumes and fashion history that identify them, from the most primitive to the most sophisticated, using clothes and adornments as a means of communicating their social and personal status (Dzramedo et al., 2013); it is the culture of the people that marks them out distinctively from other human societies in the family of humanity. The Ghanaian culture gives distinctive identity including the Anlo culture, which is expressed in ethnic content and manifests in the humanistic dimension of artistic forms which are elaborated on through clothing. Likewise, Kaiser (1997) affirmed that, the way people create and interpret the meaning of clothing and other tangible objects can vary from culture to culture, and the material objects that substantiate cultural categories and intangible values are linked to the cultural belief system. These make references in distinguishing the various ethnic groups' culture during festivals, social gathering as well as funeral celebrations through their clothing. The Anlo State chiefs' clothing regalia is significant and has various communicative messages to the Anlo State which can be relevant in the promotion of tourism (Gavor, 2015). This comes in the form of the different types of clothing they put on during different occasions. It is in the light of these that this study seeks to investigate the Symbolic Interaction of clothing regalia of chiefs in Anlo State in the Volta region of Ghana in order to document its cultural and communicative values for future reference.

Rationale of the Study

The Ghanaian chieftaincy is characterized by the magnificent and splendour of classical attributes such as the grand durbars, colourful *Kente* cloths and the skilfully design golden jewellery which has become national symbols. The Ghanaian culture including that amongst the Anlo-Ewes is largely dependent upon oral tradition and many of the historical discoveries of the Anlo-Ewes still remain in oral tradition (Geurts, 2003; Green, 1998 & Shonsey, 1995). Kuwor (2013) stated that, when keepers of African oral tradition die, they literally take libraries of African culture into the grave where it is entombed and lost to the world forever. In addition, observations made through literature research identified lack of comprehensive documentation of the Anlo State chiefs clothing regalia, despite the potential distinctive contribution that can be added to national development and the Ghanaian education on cultural sensitivity.

Purpose of Study

The purpose of the study was to examine the symbolism of clothing regalia used by chiefs in Anlo State in the Volta Region of Ghana.

Research Objectives

1. Examine the factors that influence the forms of clothing regalia used by chiefs in Anlo State.
2. Discuss the philosophical and symbolic meanings of the forms of clothing regalia used by chiefs in Anlo State and its relevance in Ghanaian contemporary society.

Theoretical Framework

Symbolic Interactionism Theory

Symbolic interaction is derived from the American philosophy of pragmatism and was conceived by George Herbert Mead and Charles Horton Cooley pragmatic method to interpret social interactions. Blumer (1986) a student and interpreter of Mead coined the term "Symbolic Interactionism" and is considered as the founder of symbolic interactionism. Symbolic interaction examines the meanings emerging from the reciprocal interaction of individuals in social environment with other individuals and focuses on which symbols and meanings emerge from the interaction between people (Aksan et al., 2009).

Principles of Symbolic Interactionism

The Symbolic Interactionism theory according to Blumer (1986) consists of three core principles namely: *meaning*, *language* and *thought*. *Meaning* implies that, human beings act towards other people and things according to the significances they have given to them. It is the human consciousness about their environment that leads to the possibility of meaning. For Blumer (1986), humans form meaning in two ways that is, meaning is something attributed to objects, events, phenomenon, etc. and meaning is a physical attachment imposed on events and objects by human. *Language* gives humans a means by which to negotiate meaning through symbols and interactions that are comprehensible to the mind and which helps in formulating assumptions (Carter & Fuller, 2015). Symbols form the basis of communication and differentiate social relations of humans from the level of communication of animals. Blumer explained that, people interact with each other by interpreting or defining each other's actions instead of merely reacting to each other's actions. Hence, human interaction is mediated by the use of symbols and signification, by interpretation or by ascertaining the meaning of one another's actions. *Thought* implies the interpretations that are assigned to the symbols. These meanings are handled in and modified through an interpretative process used by persons in dealing with the things they encounter (Flint, 2006). The foundation of thought is language, and thought is a mental conversation about the meanings, names and symbols that requires different points of view. The thought includes the imagination which has the power to provide an idea even about an unknown thing based on known knowledge. The symbolic interaction believes that through interaction with others, the individual understands the common meaning associated with the symbols but may modify and change. The same symbol may have different meanings in different settings, for different individuals depending on how the individual interprets the setting.

The symbolic interactionist theory in relation to the Anlo chiefs clothing regalia are how the Anlo chiefs respond towards their clothing regalia, which is based on the meaning they have ascribed to the symbol (clothing regalia). Meaning is given to the clothing regalia based on their consciousness of their environment which is based on their traditions and customs of the Anlo State. The meaning of the clothing regalia is nonverbally communicated as a result of the interaction between the chiefs and the Anlo people during such occasions. As the Anlo people receive the meaning of the symbol, the message derived from the symbol may reflect the true meaning of the clothing regalia. On the other hand, if the message is not properly communicated, the Anlo people can modify and change the true meaning of the clothing regalia based on how they interpret the meaning in their mental thought.

Research Methodology

The study adapted ethnographic design embedded in qualitative paradigm. Ethnographic studies are described by Creswell and Poth (2018) as qualitative procedures employed to describe, analyse and interpret a culture characteristic. It is used to study a group of people to gain a larger understanding of their lives or specific aspects of their lives. The design was appropriate and adapted for the study in other to gain insight into the clothing culture of chiefs in Anlo State in the Volta region of Ghana. The design was also used to describe, analyse and interpret the forms of clothing regalia used and its symbolic meanings.

The population for the study comprised the four hierarchy of political authority that rule the entire Anlo State and their elders. These chiefs are: the *Awoamefia*, who is the paramount chief of the Anlo State, and the military wing divisional chiefs who are the *Awadada*, *Dusifiaga* and *Miafiaga* and their elders.

The study used expert purposive sampling technique to select key informants to provide relevant information for the study. The intent is not to generalize from the sample to a population but to explain, describe and interpret a phenomenon (Maxwell, 2013). Creswell and Plano Clark (2011) explained purposive sampling as identifying and selecting individuals or group of individuals that are especially knowledgeable about or experienced with a phenomenon of interest.

Key informants are the knowledgeable persons who are considered as authorities pertaining to the history and culture of a community (Schutt, 2006). Thus, the key informants for the study were the Kingmakers (*Lafe* clan and *Amlade* clan) in charge of certain rites and because they are the custodians of the traditions and customs in the Anlo State. The Kingmakers were the expert or knowledgeable persons to provide the true meaning of the clothing regalia of the Anlo chiefs. In all, eight key informants were used, two for each chief and this was necessary to check for trustworthiness that is, validity and reliability of data in this qualitative research.

Data was collected using a semi-structured interview guide and observation guide which was based on the study objectives. The semi-structured interview guide involves a prepared questioning, guided by identified themes in a consistent and systematic manner interposed with probes designed to elicit more elaborate responses (Given, 2008). The semi-structured interview guide had ten structured questions and five probing questions for research objective one. Research objective two had five structured questions. The questions were open ended allowing for flexibility which elicited more probing questions as the interview went on. The type of questions asked were the same for each chief's key informants. The observation guide had the characteristics of the clothing regalia to be observed for each chief and was used during the Festival to have pictorial evidence of information obtained from the interviews.

Data for the study was collected within a period of four months. An introductory letter from the Vocational and Technical Education Department in the University of Cape Coast to visit the various palaces of the chiefs and to formally inform them about the purpose of the study and to explain how the instruments was to be used that is, one-on-one interview with the key informants and note taking, and the approach of data collection thus, with the permission use of an audio recorder, and observation by taking photographs of some of the clothing regalia. In-depth interviews were held with key informants on an average duration of 40-50 minutes on a scheduled date. Key informants for each chief were given pseudonyms to protect their identity as portions of the interviews were stated verbatim. Pseudonyms used for the key informants were; *Awoamefia's* key informants (W1, W2), *Awadada's* key informants (X1, X2), *Dusifiaga's* key informants (Y1, Y2) and *Miafiaga's* key informants (Z1, Z2).

Description of interview process

CHIEF	FIRST KEY INFORMANTS	SECOND KEY INFORMANTS	INTERVIEW SESSIONS
Awoamefia	W1 (a, b)	W2 (a, b)	4
Awadada	X1 (a, b)	X2 (a, b)	4
Dusifiaga	Y1 (a, b)	Y2 (a, b)	4
Miafiaga	Z1 (a, b)	Z2 (a, b)	4

Note: Each key informant was interviewed twice. "a" represent first interview session for all key informants. "b" represents second interview session for all key informants. In all, sixteen (16) interviews were conducted.

To check for internal consistency of the data, each key informant was interviewed twice. Non-participant observation was also used which helped to enter the social system to observe events, activities and interactions with the aim of gaining a direct understanding of the phenomenon in its natural context. Observation was indirect as the situation was studied in its natural setting without altering the conditions (Parke & Griffiths, 2008). This was done to confirm the description made by key informants regarding the clothing regalia of the Anlo State chiefs. Observation was overt, as participants understood the role of the observer for research purposes (Liu & Maitlis, 2010). The main observation was done at the annual *Hogbetsotso* Festival as all the chiefs were present at the gathering.

In ethnographic research, analysis takes place throughout the research process and is tightly connected with interpretation. Data collection for the interviews were done concurrently with transcription of the interviews (Roper & Shapira, 2000) and the reason was to monitor when data saturation point is reached. Transcripts were read multiple times and examined to identify and categorise themes and key issues that emerged (Reeves et al., 2008) so as to get a vivid description. All the themes and categories identified were compiled separately and compared to establish similarities and differences in their clothing regalia. The observation made through note taking were merged with the analysis of the transcribed interviews corresponding to each chiefs' key informants. The interpretation of important statements was stated verbatim.

Ethical Consideration

Ethical issues considered were informed consent, anonymity and confidentiality, and beneficence. Informed consent form was given to key informants to inform them about the purpose of the study, method of data collection and their right to withdraw at any time of the study. In assuring anonymity, key informants were given pseudonyms and were reminded not to mention their names or say anything that will reveal their identity. On the part of assuring confidentiality, data collected was handled and managed by the researcher and findings were reported based on the data gathered. To ensure beneficence in the study, the researcher worked with key informants based on their request of what information to be given out. Information in which key informants thought to be sensitive were not given out.

Key informants in this study voluntarily and willingly provided information for the study even though written informed consent was provided for participation, key informants declined to sign. They declined to sign because they considered it a duty to give information about their culture. Permission was granted to take photographs of the chiefs during the *Hogbetsotso* Festival and to use the images of the chiefs as most of these images are on the official webpage of the Anlo Traditional Council which can be accessed via https://www.facebook.com/anlotraditional?mibextid=ZbWKwL

Findings

Findings of this study are presented based on the following themes.

1. The factors that influence the forms of clothing regalia used by Anlo State chiefs.

   This identified the forms of clothing regalia used by Anlo State chiefs, Occasions and articles of clothing regalia used by Anlo State chiefs, Colour influence, Role of the Anlo chiefs and its influence on their clothing regalia, and Clan and inheritance influence on the clothing regalia of Anlo chiefs.

2. The philosophical and symbolic meanings of the clothing regalia used by Anlo State chiefs and its relevance in Ghanaian contemporary society.

   The symbolic interaction of clothing regalia of Anlo chiefs emerged three distinct meanings; these are Spiritual symbolism, Historical and Philosophical symbolism, and Social symbolism.

Factors that influence the forms of clothing regalia used by Anlo State chiefs

Forms of clothing regalia used by Anlo State chiefs

Kente is a ceremonial cloth for most chiefs in the southern part of Ghana and the Anlos have their own special type of *Kente* called Ewe *Kete* or *Afe Kete* which is used by the Anlo chiefs. The *Kete* is also called *Agbozume Kete* or *Klikor Kete* and the name is assumed for the *Kete* due to the fact that the local weaving industries are sited in these areas. The *Awoamefias'* *Kete* is usually woven by special weavers upon his request or already designed *Kete* to depict the status of a king. One of the key informants said:

> Our tradition is not like the *Akan* tradition. In our part of the region, there is no particular cloth which is meant for a chief. Our chiefs use *Kete* which is also called *Agbozume Kete*, *Afe Kete* or *Klikor Kete*.

Some of the names of these *Kete* used by the Anlo chiefs are *Fiayome*, *Babadu*, *Kalenyako*, Easter Sunday, *Agbedoe* and *Ehianaga*.

Adanuvor is another type of *Kete* cloth used by Anlo chiefs. *Adanuvor* simply means design or woven motifs, for example, the *Kpevi*. This type of Ewe *Kete* cloth is designed with Ewe symbols woven onto the cloth. These symbols are sword (*Fiayi*), stool (*Fiazikpi*), hunters, palanquin (*Apaka*), umbrella, linguist staff, and gun (*Edugo*).

The Anlo chiefs also use white cloth or calico called *Klala*. The *Klala* is used during the installation of Anlo divisional chiefs. The Anlo chiefs also use expensive cloth (*Hogavor*) specially designed to depict the affluence of a chief and by so doing, making the cloth the most expensive to purchase by ordinary citizens except for the chiefs.

The results identified the type of yarns used in weaving the cloths. These yarns are factory produced cotton yarns which are of two types namely quality yarns (*Ka nyuito*) and dyed yarns (*Nevelia*). The quality yarns are *Dzisa* and *Con* which are produced with its colours whereas the second type of yarns are locally dyed with vegetable dyes which usually fade after washing and is mostly used as funeral cloth (*Amedivor*). The Ewe *Kete* weavers usually use two yarn colour combination for their cloths, these are black and white, black and blue, white and blue, pink and gold, pink and green, black and green, and these colour combinations sometimes determine the name of the cloth. A key informant view is captured below:

> …Although we are all Ghanaians, our colours are different from the Ashanti's *Kente*, Ashanti *Kente* usually use yellow, green and blue. But for us Anlo-Ewes we use black and white for Easter Sunday, white and blue as *Ehianaga*, black and blue, pink and gold, pink and green, black and green, or gold used in the middle but the design is different from the Ashanti's *Kente*. Ewes don't use yellow, whenever yellow is used then it is Ashanti *Kente*. With our *Kete* when two colours are used it is called (*Ale*) not like the *Akan*s who use motifs and proverbs or other things for the names. We usually use two colours and even when one colour is used, the design is different. This is how we name our cloth.

The jumper was identified as an important clothing regalia used by the Anlo chiefs. An Anlo chief does not appear in public or even in the house without wearing a jumper under a cloth. This statement was made emphatically by all key informants and one of the statements is captured verbatim:

> ...the difference in appearance of any Anlo chief is that we put on jumper. You cannot go out to any place without wearing a jumper as it happens in the *Akan* or *Ga* areas, we normally put on jumper before we put on the cloth. Even when you are in the house you must put on jumper under a cloth and that decision was taken by *Togbui Sri* II. He decreed that Anlo chiefs should appear in jumper before they put on the *Kete* cloth.

The *Fiakuku* is the headgear (crown or hat) which is an important clothing regalia used by the Anlo chiefs. The Anlo chiefs use either the crown or the hat depending on the occasion. On ordinary occasions, the hat made of any cloth to match their outfit is used while on festive occasions, the crown made of velvet fabric and sometimes studded with gold motifs is used. Aside these, the *Awoamefia* has two types of headgears which are the *Batemi kuku* made from raffia and the crown made of a velvet fabric studded with gold motifs. The *Batemi kuku* is worn during his installation and the reconciliation rites before the *Hogbetsotso* Festival while the crown is worn during *Hogbetsotso* Festival or on other ceremonial occasions. The *Awadadas'* hat is quite different from the other chiefs as it is always white in a fluffy style. The *Dusifiaga* and *Miafiaga* also use crown but not in the design of the *Awoamefias'* crown.

The *Fiafokpa* is the footwear or sandals used by the Anlo chiefs. The *Fiafokpa* is also an important clothing regalia used in the installation of chiefs especially that of the *Awoamefia*. The *Awoamefias'* sandals are provided for by his kingmakers and then sent to Notsie for spiritual consecration. The *Fiafokpa* is then brought back from Notsie and used for the installation of the *Awoamefia*. The *Fiafokpa* is usually made of the skin of an animal. The initial design of the *Fiafokpa* was made in the design of the *Oheneba* with no motif except for the *Awadadas'* own with the motif of a gun or gun powder.

The walking stick is an important feature that constitute the clothing regalia of the Anlo chiefs. It is believed that, a chief does not walk alone therefore, the walking stick is used to support the chiefs whenever they go out even when they are in the company of others. Based on this believe, some of the walking sticks are filled with spiritual protecting herbs serving as protection for the chiefs.

Anlo chiefs basically adorn themselves with beads (*Dzonu*). The most commonly used beads are *Adzagba*, *Sui* and *Blotsi*, others are *Hego* and *Togomegbodzi*. The beads are always worn on the right hands to signify their status as chiefs. The source of the bead's points to the place of settlement as they believe it was deposited by God. Key informants explained that, they did not migrate with the beads but rather found it on the land they had settled on, as they believe it was deposited by God. The beads usually used are made from glass (*Atsukpa*) and chemicals, others are from stone (*Ekpedzonu*).

The Fly whisk (*Lashi* or *Sorshi*) is an important clothing regalia used during the installation of a chief. The *Lashi* is made of a tail of an animal and is occasionally used. A key informant view is stated below:

> …the *Lashi* these days are used for (function) aesthetic purposes that everybody carries on ordinary days but it is not commonly used here. The only time the *Lashi* is used, is when the chief is coming from the installation grounds, he waves it to clear bad people or evil spirits that want to bring him down. Therefore, it is not an ordinary fly whisk but rather it is fortified for the chief so that no one can bring him down.

Occasions and articles of clothing regalia used by Anlo State chiefs

Installation

In the Anlo traditional setting, installation rites are performed for chiefs before confinement. Installation rites performed for the *Awoamefia* is different whereas the rites performed for the divisional chiefs are the same. During the installation rites for the *Awoamefia* with most of the rituals performed late in the night and in secrecy, the *Awoamefia* wears a black or blue-black cotton gown (*Bishi*) and a type of hat called *Batemi kuku*. This type of hat is used by fetish priests which means that the *Awoamefia* plays the role of a spiritual leader of the Anlo State. The *Awoamefia*s' sandals *Fiafokpa* is provided for by his kingmakers and then sent to Notsie for spiritual consecration. A herbal creeping plant called *Kakla* or *Kakli* is woven and worn around the head, neck and around the joint elbow. The *Kakla* leaves are known as *Nyanya* in *Twi* and African cucumber in English, and the botanical name is *Momordica charantia* (*Cucurbitaceae*). The *Awoamefia* is given a long walking stick called *Dzizikpo* or *Trokpo* and he can only use this form of clothing regalia during the reconciliation rites before *Hogbetsotso Za* or when he finally joins his ancestors. During this period, he is sent to all the major shrines in Anlo State which their great grandfathers brought from Notsie.

The installation rites performed for the *Awadada*, *Dusifiaga* and *Miafiaga* are the same except for the cloth used. During this period, a white cloth or calico (*Klala*) is used. The white cloth is worn over the shoulder and a strip tied around the waist. The white cloth signifies victory for the successful installation. The *Kakla* leaves are also woven and worn around the head, neck and joint elbow.

After the installation, the chiefs are confined for a period of time. It is that white cloth or calico (*Klala*) that will be on them for the seven days confinement period.

Coronation

Coronation is when the newly installed chiefs are out-doored to the public. It is a joyous moment to celebrate the successful installation of the chiefs. Most of the cloths used for this occasion are white or any other multi-coloured cloths in combination with the white cloths, but mostly white cloths dominate. The chiefs must at all times be in Jumper, with a hat and walking stick and as well as adorn themselves with beads.

Reconciliation rites

Reconciliation rites, *Nugbidodo* are special rites performed before the *Hogbetsotso* Festival. During this period, the *Awoamefia* plays a dual role, thus he is the spiritual head (fetish priest) and the political head (ruler) of the Anlo State. The *Awoamefia* wears the black or blue-black cotton gown (*Bishi*), *Batemi kuku* with the *Dzizikpo* or *Trokpo* and *Sorshi* worn during his installation. This clothing regalia is worn once in a year during the reconciliation rites before the *Hogbetsotso* Festival but the other chiefs can be in any multi-coloured cloths but white cloths dominate except for the *Awadada* who is always in white clothing regalia.

Festivals

The Anlo people have one major festival that is the *Hogbetsotso Za* to celebrate their exodus from Notsie. Customarily, the *Awoamefia* is carried in a palanquin to the *durbar* grounds. The *Awoamefia* is dressed in full clothing regalia for this occasion and his clothing regalia must always be above his sub chiefs. He dresses in a nice *Afevo* that is *Hogavor* which means the most expensive cloth specially designed by weavers that he chooses from or a special cloth woven for him upon his request. The *Awoamefia* must always wear white jumper under the *Kete* cloth, with his *Fiakuku*, walking stick and the *Fiafokpa* which was brought from Notsie during the installation, and as much as possible adorn himself with old original beads which are the most expensive and this is shown in Figure 1.

Photo credit Anlo Traditional Council, *Hogbetsotso* (2017)

Figure 1 The *Awoamefia Torgbui Sri* III in his Clothing Regalia at the Annual *Hogbetsotso* Festival

The *Dusifiaga* and *Miafiaga* must also dress elegantly in Ewe *Kete* but not as the *Awoamefia* . They must also be in jumper, *Fiakuku* but not as the design of the *Awoamefia*s' crown, sandals, walking stick and adorn themselves with beads and this is shown in Figure 3 and 4. The

Awadadas' clothing regalia must at all times be white, white cloth, white jumper, white hat, walking stick and white sandals. He does not appear in any expensive jewellery. This is shown in Figure 2.

Photo credit: Anlo Traditional Council, *Hogbetsotso* (2017)

Figure 2 The *Awadada Torgbui Agbesi Awusu* II in his Clothing Regalia at the Annual *Hogbetsotso* Festival

Photo credit: Anlo Traditional Council, *Hogbetsotso* (2017)

Figure 3 The *Dusifiaga Torgbui Gbordzor* III in his Clothing Regalia at the Annual *Hogbetsotso* Festival

Photo credit: Anlo Traditional Council, *Hogbetsotso* (2017)

Figure 4 The *Miafiaga Torgbui Nyaho Tamakloe* V in his Clothing Regalia at the Annual *Hogbetsotso* Festival

Burials and Funerals

The *Awoamefia* does not attend funerals, likewise he does not even hear about the announcement of any funeral or his name being used to announce a funeral as this might spell doom or calamity for the Anlo people. The *Awoamefia* can use the black or blue-black cotton gown (*Bishi*) worn during his installation rites when he finally joins his ancestors. The rest of the chiefs attend funerals and the cloth mostly used are black, red or black and or red multi-coloured cloths.

War times

The Anlos practice the grid system during warfare. The military wing divisional chiefs led by the *Awadada* goes to war. The *Awoamefia* is always in seclusion and is protected by the military wing chiefs. The right wing and left-wing divisional chiefs organise the men who fall under their jurisdiction to take control of the right and left settlement whereas the *Awadada* takes control of the middle division as the commander in chief to prepare for battle. The cloth used is the *Adewu*, a war garment which is a red cloth.

Casual days

On casual days, any type of cloth can be worn but for Anlo chiefs, anytime they put on cloth, they must always be in jumper, even when they are in the house along with a hat and a walking stick.

Colour influence

Colours were identified as a significant factor in the determining the type of clothing regalia that the Anlo chiefs used. Given that, when a chief uses red cloth as it was during war times, then it signified war, danger and or bloody situation. Black cloth worn with red cloth denotes mourning or sorrow. Predominantly, when white cloth is being used, it symbolises peace and victory. Green symbolises plenty farm produce or good harvest.

Role of the Anlo chiefs and its influence on their clothing regalia

The role performed by the Anlo chiefs plays an important factor in determining the type of clothing regalia used. For the Anlo State, the role of the *Awoamefia* as both the spiritual head and the political head is very sacred. The role of the *Awoamefia* as the paramount chief of the Anlo State is shown in the type of clothing regalia that he uses as he must dress above all his sub chiefs and must be the most expensive because he is the overall authority in the Anlo State. This statement was emphatically made by all key informants and one of the views is expressed below:

> …During festivals, before the *Awoamefia* wears any cloth, he displays three different cloths and quickly sends his kinsmen to spy at the *durbar* grounds to find out what the other chiefs will be wearing so that he does not wear the same cloth…and any chief who attempt to wear the same cloth is regarded as competition to the *Awoamefia* …

The *Awadadas'* role is similarly significant since he is the war leader and the second in command, in addition to that, he act as *Awoamefia* whenever the *Awoamefia* joins his ancestors. The *Awadadas'* clothing regalia is heavily influenced by the position he holds in the Anlo State. The *Awadada* usually sit very close to the *Awoamefia* and his clothing regalia must always be white. The *Awadada* wears a white jumper and a white cloth over the shoulder, a white fluffy hat, white sandals and white walking stick. The *Dusifiaga* and *Miafiaga* being part of the military wing of the Anlo State also sit on the right and left hand of the *Awoamefia* respectively. They must also dress appropriately to fit their status as military wing divisional chiefs but not to upscale the dressing of the *Awoamefia* .

Clan and inheritance influence on the clothing regalia of Anlo chiefs

The clan of which the *Awoamefia* comes from which is either the *Adzovia* or Bate clan did not have any influence on the type of clothing regalia that was used. They emphatically stated that, it did not influence their clothing regalia in any way, in that all *Awoamefia*s' should dress elegantly to fit their status. Although they admitted having clan cloths, they were not used for a special purpose as in some *Akan* culture. In similar vein, no Anlo chief inherits the clothing regalia, all Anlo chiefs must procure their clothing regalia upon assuming the role as a chief. A key informant view is expressed below:

> Although Bate and *Adzovia* clans have clan cloth they do not use them in our part of the region as it happens in the *Akan* areas. No, no, there is no influence of the clan on the clothing regalia of our chiefs. All *Awoamefia*s' must just dress elegantly to fit their status.

The philosophical and symbolic meanings of the clothing regalia of chiefs in Anlo State

Spiritual symbolism

Everything among the Anlo-Ewes has spiritual meanings or is understood in a spiritual sense. Spirituality of an Anlo chief is of great significance to the entire Anlo State. The authority of a chief is imbued in the rituals performed for the chief and the clothing regalia worn during such occasions to transform him into a ruler. The *Awoamefia* of the Anlo State is a human being, but after he had gone through the necessary rites, transforms into a "god of the people". The installation rites performed for the *Awoamefia* are different from that of his divisional chiefs as he plays a dual role as a spiritual leader and a political ruler. The clothing regalia used during his installation and the reconciliation rites before the *Hogbetsotso* Festival signifies that, he is the head of all the fetishes in the Anlo State. The *Awoamefia* does not remove his clothing before entering any shrine thus, he has authority over all the gods in the Anlo State. His status as a political ruler also symbolises his authority, that is, he is the overlord and his supremacy transcends the entire Anlo State. The *Awoamefias' Fiafokpa* is always sent to and brought back from Notsie for spiritual fortification and consecration. The *Lashi* or *Sorshi* used during the installation symbolises spiritual protection for the chief. The *Lashi* or *Sorshi* is waved by the newly installed chief from side to side in order to ward off bad people or evil spirits intention against the newly installed chief. The *Kakla* or *Kakli* leafs woven and worn around the neck and elbow joints also symbolises spiritual protection for the newly installed chief.

Anlo chiefs usually adorn themselves with beads but the usage of some particular beads have spiritual protection for the wearer. The *Sui* and *Blotsi* beads worn together is believed to hold supernatural powers of protecting one from evil eyes. The walking stick used by the chiefs are filled with spiritual herbs for protection, and as the walking stick leads them, it protects or ward off evil spirits or bad people's intention against the chiefs.

Historical and Philosophical symbolism

The Anlo chiefs believe in their traditions and the legacy their forefathers left behind and therefore they strive to continue those legacies. The three most important clothing regalia are the jumper, the hat and the walking stick. The jumper was decreed by *Torgbui Sri* II that, Anlo chiefs must always be in jumper before they put on the cloth and a hat to match their outfit. It is also believed that a chief does not walk alone therefore, the walking stick is used as support or lead the chiefs even when they are in the company of others. An Anlo chief must always be with these three important clothing regalia whenever they step out and that is their legacy. The *Awadadas'* white clothing regalia proceeds a historical event which were the wars fought in the past. The Anlos were not defeated in those wars which account for the *Awadadas'* white clothing regalia today which symbolises peace and the victories over the wars fought in the past.

Social symbolism

The social significance of the clothing regalia used by the Anlo chiefs are that, it communicates to the Anlo people about the specific occasion for them to dress appropriately to suit such occasion. It also demonstrates joy and happiness amongst the Anlo people during occasions like the installation, coronation of chiefs and especially during the *Hogbetsotso* Festival as they celebrate their freedom over the ordeal in Notsie. Traditionally for the Anlos, the Ewe *Kete* or *Afe Kete* is used by royalty and persons with significant status in the Anlo society. The paramount chief of the Anlo State who plays a dual role as a spiritual leader and a ruler usually uses this important occasion to communicate with the entire Anlo State. This is because he usually lives in seclusion. The *Awoamefias'* social eminence is identified by the special cloth made by special weavers, beads for adornment and other important clothing regalia. The special cloth woven for the *Awoamefia* is worn only in times of great importance especially during the *Hogbetsotso* Festival to show his nobility. It is an expensive cloth "*Hogavor*" purposely designed for him to communicate his affluence and authority over the Anlo State. The clothing regalia of the Anlo chiefs during such important occasions depicts their supremacy and authority in the Anlo State. Their role as chiefs being influenced by the type of clothing regalia used shows the different positions and authorities that the Anlo chiefs' hold.

Discussion

Research Objective one: Examine the factors that influenced the forms of clothing regalia used by the Anlo chiefs

The study identified the various forms of clothing regalia used by the Anlo State chiefs. These were; the type of cloth (Ewe *Kete*, *Adanuvor* or *Klala*), jumper, a hat (*Fiakuku*), chiefs' sandals (*Fiafokpa*), a walking stick and beads (*Dzonu*) for adornment. The *Lashi* or *Sorshi* also formed part of their clothing regalia. These forms of clothing regalia represent the symbol and the meaning given to them in the symbolic interaction theory. Occasions were found to be an important factor in the selection of the clothing regalia. For Anlo chiefs, cloths usage varied depending on the function they attended hence, it is not one cloth or one colour that was used. Occasions like installation, confinement, coronation, reconciliation, festivals, burials and funerals, war times and casual days all portrayed different clothing regalia. It is through such occasions that interaction and interpretation of the symbols are made.

Festivals were important occasions for the Anlo chiefs to display their affluence as they dress in full clothing regalia. Their role as chiefs is also influenced by the type of clothing regalia used. The *Awoamefias'* clothing regalia is always above his sub chiefs' whereas the *Awadadas'* clothing regalia is always white. The *Dusifiaga* and *Miafiaga* also dresses in full clothing regalia but not to upscale the dressing of the *Awoamefia* who is the overlord of the Anlo State and this is seen in the traditional setting as chiefs of lower ranks must not dress to upscale the dressing of chiefs of higher ranks. Figures 1, 2, 3 and 4 show the Anlo chiefs in their full regalia at the annual *Hogbetsotso* Festival which depict their ranks. This also shows that the importance of rank in chieftaincy is not only shown by the name of the chief but must be shown publicly without necessarily using words thus, clothing being a good means of nonverbal form of communication in this case is of the means used. This also conforms to practices of other ethnic groups in Ghana like the Ashanti's where the *Abrempong-ntoma* used during festive occasions easily identifies Ashanti paramount chiefs. The clothing regalia worn by Anlo chiefs does not only distinguish them from their subjects but also differentiates them from chiefs from other parts of the country. The clothing regalia of the Anlo chiefs shows the uniqueness of their tradition and culture, thus the difference in their clothing regalia is the jumper worn under any cloth, the hat and a walking stick and the beads for adornment.

Research Objective two: Discuss the philosophical and symbolic meanings of the clothing regalia used by chiefs in Anlo State and its relevance in Ghanaian contemporary society

In relation to the symbolic interaction theory used, the Anlo chiefs respond towards the symbol (clothing regalia) based on the meaning they have ascribed to the symbol. These meanings are also based on the traditions and customs of the Anlo State. The spiritual meanings given to these symbols such as *Lashi* or *Sorshi*, *Kakla* or *Kakli* leafs, *Awoamefias' Fiafokpa*, *Sui* and *Blotsi* beads and walking stick worn during occasions like the installation and the reconciliation rites of the Anlo chiefs depict their spiritual embodiments. These meanings are also linked to the legacy of their forefathers and a historical event which is very crucial in the history of Anlo State. The meanings of the symbols are nonverbally communicated as a result of the interaction between the chiefs and the Anlo people during such occasions. These meanings are peace, victory, joy and happiness among others; the social eminence, nobility and affluence of the Anlo chiefs as well as their authority and supremacy over the Anlo State. As the Anlo people receive the meaning of the symbol, the message derived from the symbol may reflect the true meaning of the clothing regalia. On the other hand, if the messages are not properly communicated, the Anlo people can modify and change the true meaning of the clothing regalia based on how they interpret the meaning in their mental thought. Even though generation have passed on, these meanings are still relevant in the Ghanaian contemporary society.

Implications

This study has identified the different clothing regalia used by chiefs in Anlo State and their symbolic meanings, and the factors that influenced the choice of their clothing regalia using the symbolic interaction theory. The study has also provided an in-depth knowledge and symbolic understanding of the historical antecedents underpinning the clothing regalia used by Anlo State chiefs in the Volta region of Ghana, but the spiritual implications attached to some of the clothing regalia made it difficult to probe further and observe those clothing regalia. The study has therefore provided the basis for anthropologists and ethnologists by enriching their knowledge about the symbolism of clothing worn by chiefs in Ghana.

The social psychology of clothing tells us that, humans nonverbally communicate with clothing about themselves and to others whether socially or psychologically. The type of clothing worn by an individual signal to others the social status and social affiliation of that individual in a particular society. The Anlo State chiefs are revered in the society and the relationship between their clothing regalia and the meanings associated with them are symbolic in the traditional setting. This is so because the messages they communicate with their clothing regalia informs the Anlo people to appreciate and value their culture since clothing indicates who they are individually and collectively as a society. It is important that traditional leaders must continue to use occasions like durbars, festivals and other ceremonies to sensitize their subjects on the importance of preserving their culture. This will educate the Anlos about the symbolic meanings of the clothing regalia used by their chiefs and also provide good sources of reference materials for the future generation to continue the legacy. As custodians of tradition, they must preserve the cultural heritage and to make people become conscious about the sustainability of our cultural values through the use of indigenous Ghanaian clothing in order to promote tourism. The clothing regalia of the Anlo chiefs are not just for adornment but also have communicative values which are educative and must be uphold as a culture that can be passed on to the younger generation. It is therefore essential that, kingmakers or keepers of Anlo traditions and customs should as much as possible document important aspect of the clothing regalia of the Anlo chiefs and not rely solely on oral tradition which can be altered or debunked by others. Nevertheless, the clothing regalia of the Anlo State chiefs cannot be undermined, while it is prominent in the history of the Anlo-Ewes and shows their cultural heritage, there is the need to continue to investigate and document the unknown in order to comprehend and gain a deeper meaning into their lives.

References

Aishwariya, S. (2018). A review on the history, theories and early forms of fashion and clothing. *International Journal of Engineering Sciences & Research Technology, 7*(7), 270-275.

Aksan, N., Kısaca, B., Aydına, M., & Demirbuken, S. (2009). Symbolic Interaction Theory. *Procedia-Social and Behavioral Sciences, 1,* 902-904.

Anquandah, J. (2013). The people of Ghana: Their Origins and Cultures. *Transactions of the Historical Society of Ghana,* (15), 1-25.

Bellorado, B. (2020). Leaving footprints in the Ancient Southwest: Visible indicators of group affiliation and social position in the Chaco and Post-Chaco Eras (AD 850–1300).

Bewiadzi, S. (2013). Agbogbomefia Togbe Afede XIV and the politics of development in the Ho-Asogli State [Master's thesis, University of Ghana]. University of Ghana.

Blumer, H. (1986). *Symbolic Interactionism: Perspective and Method.* University of California Press.

Carter, M. J., & Fuller, C. (2015). Symbolic interactionism. *Sociopedia.isa, 1*(1), 1-17. https://doi.org/10.1177/205684601561

Chinsinga, B. (2006). The Interface between tradition and modernity: The struggle for political space at the local level in Malawi. *Civilizations. Revue internationale d'anthropologie et de sciences humaines,* (54), 255-274.

Creswell, J. W. & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.) Sage Publications.

Creswell, J. W., & Plano Clark, V. L. (2011). *Choosing a mixed methods design. Designing and conducting mixed method research* (2nd ed.), 2, 53-106. Sage Publications.

Dzivenu, S. (2011). *Chieftaincy-state relations: Making political legitimacy in Ghana's fourth republic* [Doctoral dissertation, University of Edinburgh.]. University of Edinburgh.

Dzramedo, B. E. (2009). *Clothing and fashion in Ghanaian culture: A case study among the Akans* [Doctoral dissertation, Kwame Nkrumah University of Science and Technology]. Kwame Nkrumah University of Science and Technology.

Dzramedo, B. E., Ahiabor, R., & Gbadegbe, R. (2013). The relevance and symbolism of clothes within traditional institutions and its modern impacts on the Ghanaian culture. *Journal of Arts and Design Studies, 13*, 1-14.

Essel, E. A. (2021). The Role of Traditional Leaders in Governance Structure Through the Observance of Taboos in Cape Coast, Kumasi and Teshie Societies of Ghana. *International Relations and Diplomacy, 9*(3), 122-135.

Flint, D. J. (2006). Innovation, symbolic interaction and customer valuing: Thoughts stemming from a service-dominant logic of marketing. *Marketing Theory, 6*, 349-362. https://doi.org/10.1177/1470593106066796

Gavor, M. E. (2015). *Symbolism of clothing in cultural tourism: A study of three selected Ghanaian kings* [Unpublished doctoral dissertation]. University of Cape Coast.

Geurts, K. L. (2003). Culture and the senses: Bodily ways of knowing in an African community. University of California Press.

Gilligan, I. (2016). Clothing (main entry), In T. K Shackelford & V. A. Weekes-Shackelford (Eds), (pp. 1-7). *Encyclopedia of Evolutionary Psychological Science*. Springer International Publishing. https://doi.org/10.1007/978-3-319-16999-6_3009-1

Gilman, C. P. (2002). *The dress of women: A critical introduction to the symbolism and sociology of clothing*. Greenwood Press.

Given, L. M. (2008). *The sage encyclopedia of qualitative research methods*. Sage Publications. https://doi.org/10.4135/9781412963909

Green, D. (1998). Technology resurrects African music and dance. *Journal of Performing Arts, 3*(1), 51-63.

Howlett, N., Pine, K., Orakcioglu, I., & Fletcher, B. C. (2013). The influence of clothing on first impressions: Rapid and positive responses to minor changes in male attire. *Journal of Fashion Marketing and Management, 17*, 38-48. https://doi.org/10.1108/13612021311305128

Kaiser, S. B. (1997). *The social psychology of clothing: Symbolic appearance in context* (2nd ed.). Fairchild.

Kleist, N. (2011). Modern chiefs: Tradition, development and return among traditional authorities in Ghana. *African Affairs, 110*(441), 629-647. https://doi.org/10.1093/afraf/adr041

Kuwor, S. K. (2013). *Transmission of Anlo-Ewe dances in Ghana and in Britain: Investigating, reconstructing and disseminating knowledge embodied in the music and dance: Traditions of Anlo-Ewe People in Ghana* [Doctoral thesis, University of Roehampton]. University of Roehampton.

Liu, F., & Maitlis, S. (2010). Non-participant observation, In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), (pp. 610–612). *Encyclopedia of case study research*. Sage Publications. https://doi.org/10.4135/9781412957397

Marrie, H. (2008). The UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage and the protection and maintenance of the intangible cultural heritage of indigenous peoples. In I*ntangible heritage* (pp. 183-206). Routledge.

Maxwell, J. A. (2013). Q*ualitative research design: An interactive approach* (3rd ed.). Sage Publication.

Oku, G. K. (2013). *The role of religion on the chieftaincy institution: A case study of Chamba traditional area in the northern region of Ghana* [master's thesis, Kwame Nkrumah University of Science and Technology]. Kwame Nkrumah University of Science and Technology.

Omatseye, B. O. J., & Emeriewen, K. O. (2012). An appraisal of the aesthetic dimension to the African philosophy of cloth. *Journal of Language, Technology & Entrepreneurship in Africa, 3*(2), 57-67.

Park Larsson, S. (2014). *Do you see what I see?: A cross-cultural study on interpretation of clothing as a non-verbal signal* [Master's thesis, University of Gothenburg]. University of Gothenburg.

Parke, J., & Griffiths, M. (2008). Participant and non-participant observation in gambling environments. *Enquire, 1*(1), 1-14.

Reeves, S., Kuper, A., & Hodges, B. D. (2008). Qualitative research methodologies: Ethnography. *British Medical Journal, 337*, 512-514.

Roper, J. M., & Shapira, J. (2000). *Ethnography in nursing research*. Sage Publication. https://doi.org/10.4135/9781483328294

Safdar, S., Goh, K., & Choubak, M. (2020). Clothing, identity, and acculturation: The significance of immigrants' clothing choices. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 52*(1), 36-47. https://doi.org/10.1037/cbs0000160

Schramm, K. (2004). Senses of authenticity: Chieftaincy and the politics of heritage in Ghana. *Etnofoor*, 156-177.

Schutt, R. K. (2006). *Investigating the social world: The process and practice of research* (5th ed.). Sage Publication.

Senah, K. (2013). Sacred objects into state symbols: The material culture of chieftaincy in the making of a national political heritage in Ghana. *Material Religion, 9*(3), 350-369. https://doi.org/10.2752/175183413X13730330869031

Shonsey, E. (1995). Beads: An element of regalia amongst the Ewe royalty. *African Diaspora ISPs, 34.* https://digitalcollections.sit.edu/african_diaspora_isp/34

Tijana, T., Tomaž, T., & Cuden, A. P. (2014). Clothes and costumes as form of nonverbal communication. *Tekstilec, 57*(4), 321-333.

POSITION PAPER

A qualitative exploration of patients' experiences and barriers to adequately controlling hypertension in Greece

Maria Michou[1], Niki Mourouti[1], Christos Lionis[2], Panagiota Kalagia[3], Angelos G Ioannidis[3], Michalis Kaloeidas[3], & Vassiliki Costarelli[1]

[1]*Harokopio University, Greece*
[2]*Medical School, University of Crete, Greece*
[3]*Health Center, Nea Filadelfeia, Greece*

Abstract

***Purpose**: The aim of the study was to have adults discuss experiences and barriers to managing hypertension and to provide suggestions to improve healthcare delivery.*

***Methodology**: Focus group discussions were employed in this qualitative study. A total of 14 hypertensive participants were recruited from the 1st Local Health Unit of Nea Philadelphia, Attica, Greece. Discussions were audio recorded and thematically analyzed.*

***Findings**: Two major themes were developed: a) barriers for better adherence to lifestyle modifications and b) suggestions to improve hypertensive patients' experience in primary health care. Reasons for not adhering to lifestyle modifications were low self-care levels, swift work, low perceived risk, prescription of medication to control blood pressure and lack of easy-to-follow guidelines on lowering dietary salt. Suggestions to improve patients' experience in primary care included: comprehensive description of the seriousness of the condition at diagnosis, emphasis on the importance of the lifestyle modifications, more frequent follow up and referral after diagnosis to other health professionals which could aid with dietary and mental stress management.*

***Conclusions**: The study offers an insight into patients' experiences and barriers to adequately controlling hypertension in Greece. The results could be useful for primary care practitioners, researchers and policy makers. This is the first study in Greece assessing concurrently, patient-related barriers to controlling blood pressure and suggestions to improve primary health care in an urban setting.*

KEYWORDS: HYPERTENSION; BARRIERS; FOCUS GROUPS; GREECE

Introduction

High blood pressure (BP) constitutes a major public health problem, there is evidence that it is a health equity issue and is the leading, preventable risk factor for premature death and disability, worldwide (Wilkins et al., 2017; Mills et al., 2016). The number of people with raised blood pressure in the world has increased by 90% during the last four decades, with the majority

Michou, M., Mourouti, N., Lionis, C., Kalagia, P. Ioannidis, A. G., Kaloeidas, M., & Costarelli, V. (2022). A qualitative exploration of patients' experiences and barriers to adequately controlling hypertension in Greece. *International Journal of Home Economics, 15*(2), 23-32.

Email: Maria Michou ✉ mariamixou@hotmail.com

of the increase occurring in low-income and middle-income countries (Wilkins et al., 2017). The high and increasing worldwide burden of hypertension is a major global health challenge because it increases morbidity and mortality from cardiovascular and kidney diseases and financial costs to society (Mills et al., 2016). Some of the highest rates in 2019 were seen in the Dominican Republic, Jamaica and Paraguay for women and Hungary, Paraguay and Poland for men. Men and women in Canada, Iceland and the Republic of Korea were most likely to receive medication to effectively treat and control their hypertension, with more than 70% of those with hypertension receiving treatment in 2019. Comparatively, men and women in sub-Saharan Africa, central, south and south-east Asia, and Pacific Island nations are the least likely to be receiving medication. Treatment rates were below 25% for women, and 20% for men, in a number of countries in these regions, creating a massive global inequity in treatment. Encouragingly, some middle-income countries have successfully scaled up treatment, and are now achieving better treatment and control rates than most high-income nations. For example, Costa Rica and Kazakhstan now have higher treatment rates than higher-income countries (WHO 2021).

In Greece, the prevalence of hypertension seems to be rising and it affects approximately 40% of adults. According to Stergiou and his partners, one-third of people with hypertension in Greece are undiagnosed and only 30% are actually controlling their hypertension with treatment (Stergiou et al., 2021). In another, more recent study, conducted in urban areas of Greece, in a sample of 5727 adults, it was reported that 41.6% of the participants had hypertension, of which only 78.7% were actually diagnosed, 73.1% were receiving treatment for their condition and only an estimated 48.3% were controlled. Women and older participants reported better awareness, treatment, and control of hypertension.

Successfully managing and overcoming a chronic disease like hypertension, requires self-care management, self-efficacy, adherence to taking recommended drugs, as well as, diet and lifestyle modifications. However, the above is occasionally difficult to achieve, partly due to the inability to surmount certain barriers that often relate to the patient himself/herself and/or the health care system (Nieuwlaat et al., 2013). During the last decade, studies from all over the world, have evaluated potential barriers faced by patients with a chronic disease diagnosis, such as hypertension, in their effort to adequately manage their disease. Lack of knowledge regarding hypertension is the most usual obstacle for early diagnosis, as well as successful treatment, and follow-up (Belizan et al., 2020; Heinert et al., 2020; Khatib et al., 2014; Okwuonu et al., 2014). Disease awareness and certain misconceptions also seem to play an important role in controlling hypertension (Belizan et al., 2020; Heinert et al., 2020). In terms of hypertension treatment adherence, patients mostly report forgetting to take their medication (Khatib et al., 2014). Mistrust of medical treatments and overestimation of the adverse effects of the medications, are often also reported as important adherence barriers (Belizan et al., 2020). It has also been reported in the past that lack of awareness of the importance of lifestyle modifications in managing the disease and subsequent failure to adopt them, is also identified as and a patient-related barrier to blood pressure control (Okwuonu et al., 2014). In addition, there is good evidence that stress, anxiety and depression, usually delay or hinder the adoption of a healthier lifestyle (Khatib et al., 2014). The high cost of a healthy diet, the lack of time for preparing healthy meals or engaging in physical activity, the lack of access to places for physical activity, as well as the lack of family support, have been recognized as potential barriers of appropriate lifestyle modifications, to manage hypertension (Belizan et al., 2020). Finally, it is important to note that negative primary care experiences have also been reported as significant patient-related barriers to control hypertension (Heinert et al., 2020).

Potential barriers to achieve adequate management of hypertension in Greece have not been adequately investigated in the past. A recent study conducted in rural areas of central and northern Greece, aiming at investigating patients' knowledge and attitudes towards BP management, in order to identify possible barriers to achieving effective control, indicated that the main barriers in hypertension control were: knowledge gaps, intolerance of adverse events, negligence, unmet individual preferences, financial barriers and overtreatment of hypertension (Tsimtsiou et al., 2020).

The aim of the current focus group study was to have hypertensive adults discuss experiences and barriers to managing hypertension and to provide possible suggestions to improve healthcare delivery. To the best of our knowledge, this is the first study in Greece conducted in an urban area, aiming to assess patient-related barriers to controlling blood pressure, including suggestions from the patient's perspective, to improve primary health care experiences. The results of the current study will also aid in the development of a specifically designed experiential educational material, which will be used for a future educational intervention, aiming at improving Health Literacy (HL) in hypertensive patients.

Material and Methods

The study design and analysis adhere to the 32-item Consolidated Criteria for REporting Qualitative (COREQ) research (Tong et al., 2007).

Ethical Considerations

The study was approved by the Institutional Ethics Review Board of the Harokopio University and the Scientific Council of Primary Health Care of the 1st Health District of Attica, Greece. Participants were informed about the purpose of the study prior to consenting to taking part.

Research team and reflexivity

Three researchers conducted the focus discussions; one moderator and two observers. CV was the moderator and MM and NM were the observers who made field notes during the focus group discussions. All the researchers hold a PhD. Specifically, CV is a Professor with expertise in nutrition behavior and health and previous experience in qualitative research. MM is a public health educator and NM is a dietician. Prior to study commencement the relationship with the participants was limited to communication for information on the purpose of the study. All the researchers directly involved in the focus group discussion were female.

Study Design

It is a qualitative study, using focus groups discussions. This approach was adopted because it is an easy, fast, economic and efficient way to obtain qualitative data while it can simultaneously maximize interactions between the participants (Jonhson et al., 2016). The environment that is developed provides the chance to the participants to feel free to share information, feelings and experiences about certain issues (Liamputtong, 2013; Rabiee, 2004; Kitzinger, 1995). The duration of each focus group discussion was 60-90 minutes. The discussions were audio recorded and thematically analyzed. The topics of the discussions were selected after a literature review and are presented in Table 1.

Participants and Procedure

The sample of the study is a convenience sample and the participants were approached face – to-face in order to be informed about the study and its purposes. A total of 14 hypertensive participants (9 men and 5 women) were recruited from 1st Local Health Unit (TOMY) of Nea Philadelphia, Attica, Greece and two focus group discussions of 7 participants each, were conducted in the same place. The inclusion criteria were: men and women over the age of 30, patients diagnosed with hypertension, the diagnosis should exceed two years and the ability to speak and understand Greek. Two individuals refused to participate due to lack of time.

Table 1 Focus Groups Topics

Focus Groups Topics	
1	How would you define hypertension?
2	How did you learn that you had hypertension?
3	What were your first thoughts and feelings that you had, when you learned that you had hypertension?
4	How do you feel now about being hypertensive, after some years?
5	What do you think are the three most important things a patient needs to do to properly manage their hypertension, other than medication?
6	What can hypertension cause?
7	What barriers did you encounter in trying to follow the instructions given to you for managing hypertension?
8	What would you like to be different about understanding the disease and its guidelines which were given to you?
9	What is your experience of primary health care?
10	Could you, from your experience so far, suggest something that could change and that if implemented would have helped you to get acquainted with the disease and its treatment?

In the two focus groups discussion a semi-structured interview was used. At the beginning, the moderator and the observers introduced themselves. The moderator informed the participants about the aim of the study and the focus group's rules. The rules included: everyone should be involved in the discussion, wait for someone to finish talking, do not stray from the topic being discussed, sign consent forms and complete the questionnaire at the end of the discussion. When the focus group started, introductory questions were made to make participants feel comfortable and get to know each other (Topic 1 and 2 from Table 1). Then, questions aiming to introduce the topic and starting the reflection of the participants followed (Topic 3 and 4 from Table 1). Transition questions, which act as a logical link leading to the formulation of key questions, were next (Topic 5 and 6 from Table 1) and finally the key questions were made, which aimed at addressing, in depth, the main aspects of the study (Topic 7-10 form Table 1). At the end of the focus group, each participant completed a questionnaire which included sociodemographic questions and the European Health Literacy Questionnaire (HLS_EU_Q16), in order to assess HL levels. The HLS_EU_Q16 is a short version of the HLS_EU_Q47. HLS_EU_Q16 is a 16-item self-reported tool and it is used to measure the ability of the participant to access, understand, appraise and apply information in health care, disease prevention and health promotion sectors. This tool has been used in many recent studies for assessing HL levels in general population, after the appropriate validation process (Gustafsdottir et al., 2020; Eronen et al., 2019; Lorini et al., 2019Salm et al., 2018) The answers to the 16 questions range from 0 = very difficult to 4 = very easy. Difficult categories are coded with 0 and easy categories are coded with 1. Total HL score is a sum score and ranges from 0-16. A score between 0 and 8 indicates inadequate HL levels, between 9 and 12 problematic HL levels and between 13-16 sufficient HL levels (Michou and Costarelli, 2022). Finally, participants self-reported their height and weight in order to calculate their body mass index (BMI).

Data analysis

A thematic analysis of the data was carried out. The steps that were followed were: 1) Become familiar with the data, 2) Generate initial codes, 3) Search for themes, 4) Review themes, 5) Define themes and 6) Write-up. Firstly, two investigators read the transcripts again and again and they made notes. Then the data were organized in a meaningful and systematic way through coding. The codes then were examined. Some of them clearly fitted together into a theme (Maguire and Delahunt, 2017). A third researcher evaluated and approved the major themes identified in this study.

Also, data are presented as frequencies (percentages) for the categorical variables and as mean (SD) and median (IQR = interquartile range) for the continuous variables. Median (IQR) was used additionally to Mean (SD) due to the non-normal distribution of the data.

Results

Two focus group discussions were held with a total of 14 participants with diagnosed hypertension. The main characteristics of the participants are presented in Table 2.

Table 2 Composition of focus groups participants.

Characteristics	Sub-characteristic	1st Group		2nd Group	
		N	%	*N*	%
Sex *N* (%)	Male	4	57.1%	5	71.4%
	Female	3	42.9%	2	28.6%
Age	Mean (SD)	62.43	11.19%	60	13.98%
	Median (IQR)	65	20.0%	54	19.0%
	Min-Max	43 to 74		49 to 84	
Marital Status *N* (%)	Unmarried	1	14.3%	4	57.1%
	Married	3	42.9%	2	28.6%
	Divorced/Widowed	3	42.9%	1	14.3%
Years of diagnosis	Mean (SD)	8.86	3.58%	9.33	3.88%
	Median (IQR)	8	2.0%	8	7.0%
	Min-Max	3 to 15		5 to 15	
BMI	Mean (SD)	30.61	4.18%	28.77	4.80%
	Median (IQR)	30.62	3.96%	27.21	4.15%
	Min-Max	26.08 to 38.97		25.38 to 38.40	
HL	Mean (SD)	9.71	6.95%	10.43	4.12%
	Median (IQR)	12	15.0%	11	8.0%
	Min-Max	0 to 16		5 to 15	
HL Category *N* (%)	Inadequate HL	2	28.6%	3	42.9%
	Problematic HL	2	28.6%	1	14.3%
	Sufficient HL	3	42.9%	3	42.9%

Note: BMI: Body Mass Index, HL: Health Literacy

The main findings of the focus group discussions are presented below. With respect to the question "How would you define hypertension?" common answers include "…is the blood that presses on the arteries" or "...the speed at which blood leaves and returns to the heart". Also, most of the participants' stated that they are aware that hypertension could potentially lead to stroke, heart attack and clogged arteries, if it is not carefully controlled. Many participants said that hypertension was diagnosed after presenting stress symptoms or they learned about their condition after a routine blood pressure measurement, without any symptomatology. Other less common reasons which led to the diagnosis of the condition were: pregnancy, headache and unexplained nose bleeding.

As far as participants' first thoughts and feelings following the diagnosis are concerned, some reported that they initially refused to accept it or to believe it, whereas others felt fearful, sad, anxious or shocked. These feelings were followed by a sense of relief by some of the participants, as time went by, they stated that "…it is better to know than not to know that you have the condition". Some of the participants also stated that they somehow, expected the diagnosis, because it was common in their family or among their friends. One of the participants said, immediately after diagnosis, "….hypertension is a reversible diagnosis. I can overcome it". Over time, most patients seem to become more familiar with the disease and they seem to feel safer and protected, whereas other participants continue to feel a sense of vulnerability. Typical responses by the participants include: ".... It is a habit / obligation to remember to take your pill" and ".... We have learned to live with it".

The participating hypertensive patients to the focus group discussions also stated that in their opinion, the most important things to do, apart from taking their medication, are: physical activity, healthy diet (reduce fat intake, restrict alcohol intake, reduce food portion sizes and reduce dietary salt intake), body weight reduction, stress management and smoking cessation.

The data analysis based on the key questions of the focus group method resulted in two major themes. The first theme refers to the barriers that participants' face which hinder their adequate adherence to treatment and lifestyle modifications and the second theme refers to specific participants' suggestions to improve hypertensive patients' experience, in primary health care in Greece.

Barriers to control hypertension

Participants reported varying reasons for not adhering to lifestyle modifications in order to manage hypertension. Most of the participants identified low self-care levels as a key reason for poor adherence to the treatment and management of the disease. More specifically, the vast majority of the participants believed that the hectic rhythms of everyday life, mental stress, overworking, shift work, together with the existence of children in their family and other family issues, often hinder their effort to comply to the suggested lifestyle modifications and medical treatment, because they often don't identify themselves and their condition as a priority. Some interesting responses include:

> ... It's not that difficult (to comply to the recommendations), especially when the doctor tells you that you should do this for your health ... but because you do not feel hypertension immediately, you forget it and as you get older the priorities change and you put family, as a priority. You simply neglect yourself. You are not in the mood to put yourself forward again; you think you should have done it long ago. (FG 1)
>
> The reason is the many obligations and especially obligations you have for others. Work, parents, children ... you prioritize them, you burn out and then you have no time for anything, neither walking nor anything. (FG 1)
>
> Taking the pill is a habit, but changing your lifestyle is not easy with the current working conditions. I work in shifts and I have problem… (FG 2)
>
> Stress, and especially work stress is a main barrier… (FG 2)
>
> Exercise is very important but I do not have time to apply it. I have a small child and I end up just sitting on the couch at the end of the day. Life is very demanding. (FG 2)

Another important reason for not adhering that was mentioned, was low perceived risk of the disease at diagnosis, due to young age and lack of symptoms:

> Obviously the doctor did not make me understand the severity of the disease. (FG 1)
>
> The doctor did not make me understand that hypertension is something serious. He told me to take a pill and I will be ok. (FG 2)

Prescription of medication to control blood pressure together with unclear guidelines, occasionally led to poor adherence to the suggested lifestyle modifications. Some interesting responses include:

> Usually, I think…I have taken the pill, I am protected and then I can eat what I want and I can put a bit more salt on my plate. (FG 1)

> The doctor did not give me specific guidelines to reduce salt intake or on how to reduce salt intake, he gave me only the pill. (FG 2)

Suggestions to improve hypertensive patients' experience in primary health care

With respect to the above topic, participants expressed different thoughts and opinions and made some interesting suggestions for useful changes in primary health care. Some participants stated that a more thorough and comprehensive description of the seriousness of the condition, at diagnosis, would be helpful:

> Doctors must give a cruder, a harsher description of the disease. They have to say that the patient may die, the patient may remain disabled. (FG 1)
>
> "Doctors need to make patients aware of the risk immediately." (FG 1)
>
> "Doctors see many patients and do not pay the necessary attention." (FG 1)

Also, participants believed that at diagnosis, doctors must give emphasis on the importance of the lifestyle modifications, regardless of the concurrent prescription of medication to control blood pressure:

> When the doctor gives you the choice between taking a pill or changing your diet and does not specifically tell you to make certain changes in your lifestyle, then we have problem. (FG 1)
>
> The doctor should tell you to exercise in addition to the dietary instructions he/she gives you. (FG 1)
>
> They (doctors) should give more emphasis to the importance of lifestyle changes and specially on exercise and healthy eating. (FG 1)
>
> We were not given the option to modify our lifestyle for a while and then if nothing changes, to take the pill. (FG 1)
>
> Doctors do not believe that patients will make lifestyle changes. (FG 1)
>
> The doctor did not focus on reducing salt intake, only on stress management (FG 2)
>
> There should be personalized programs to change lifestyle and improve nutrition. (FG 2)

A more frequent follow up, particularly during the first year after diagnosis, was identified by most of the participants, as essential:

> Hypertension is a disease that doctors do not often monitor. Usually, the next appointment is after a year. (FG 1)
>
> For your next appointment with the doctor you have to wait a long time (FG 2)

Finally, a referral after diagnosis to other health professionals, which could aid with dietary and mental stress management, was identified as helpful:

> Primary health care does not prevent the disease but tries to cure it. Nobody gave us the option for another health professional. (FG 1)
>
> No doctor referred me to a dietitian (FG 2)
>
> Specific (tailor made) dietary and exercise programs (with specific examples) adapted to the Greek everyday life, diet and culture, are necessary (FG 2)

Discussion

Suboptimal control of blood pressure (BP) is emerging as a common and serious public health challenge in Greece and internationally. The current study offers a much-needed insight into patients' experiences and barriers to adequately controlling hypertension in Greece. The main barriers to control hypertension via certain lifestyle modifications were: low self-care levels, swift work and low perceived risk of the disease at diagnosis, usually due to young age and/or lack of symptoms. The above findings are plausible and anticipated since they have been supported by other similar studies in the past, as key factors in hindering adequate patient centered management of chronic diseases in general, and hypertension, in particular (Robatsarpooshi et al., 2020; Bonaccorsi and Modesti, 2017). It is of paramount importance to underline that both low self-care levels and low perceived risk, are key parameters usually associated with suboptimal health literacy levels, in adults (Nam and Yoon, 2021; Orom et al., 2018). It is worth highlighting that the HL levels of the participants in the focus groups discussions were assessed with, 8 of the 14 participants having inadequate and problematic health literacy levels. The reported findings regarding the difficulties associated with the compliance to the lifestyle modification guidelines, could partly be attributed to the HL levels of the participants.

Another interesting finding is that the prescription of medication to control blood pressure, occasionally led to deliberate low adherence to lifestyle modifications by the hypertensive patients. It is important to inform and educate primary care physicians about the above misconception of a numbers of hypertensive patients, with respect the prescription of medication to control hypertension and the concurrent need to adherence to the proposed lifestyle modifications.

A number of participants also stated the lack of clear and easy to follow guidelines on appropriate exercise regimes and lowering dietary salt, by the primary care doctors. It would probably be beneficial to better educate and train primary health care professionals and doctors, in applying the current official guidelines for the management of the disease, in a more comprehensive and effective manner. It was reported by a recent study aiming at investigating practices, knowledge and perceptions of medical doctors in Greece, with respect to hypertensive patients' compliance to the prescribed treatment, that the key reason for the reported poor patient treatment compliance, was the often-inadequate use of the current guidelines, by the treating physicians (Barbouni et al., 2017).

Health Equity Implications

The high and increasing worldwide burden of hypertension is a major global health challenge. Suboptimal control of blood pressure (BP) is a serious public health problem in Greece. This is the first qualitative study assessing concurrently in hypertensive patient with varies levels of HL, barriers to controlling blood pressure and suggestions to improve primary health care in an urban setting in Greece. Primary health care in the country is in great need of major restructuring (Lionis et al., 2009). The findings of the current study could a) facilitate in the effort to improve health policy in Greece, since currently, vivid discussions on further and more effective primary care reform, are taking place and will b) facilitate in the creation by our team, of a specifically designed educational intervention focusing in enhancing health literacy in hypertensive patients. We also believe that the current paper is of interest to Home Economists, worldwide since the discipline of Home Economics aims to achieve healthy and sustainable living for individuals, families, and societies.

Conclusion

With respect to the suggestions to improve hypertensive patients' experience in primary health care, a more thorough and comprehensive description of the seriousness of the condition at diagnosis, was stressed as a very important factor. As described above, emphasis on the importance of the lifestyle modifications, regardless of the concurrent prescription of medication to control blood pressure and a more frequent follow up, particularly during the first year after diagnosis, were also identified as important factors in improving primary health care. Finally, referral after diagnosis to other health professionals which could aid with dietary and mental stress management, was also proposed by the majority of the participants. The results of the current study highlight the need for more similar studies, whose findings could be implemented in new interventions, aiming to improve prevention and control of high blood pressure, in Greece.

Acknowledgements

This research is co-financed by Greece and the European Union (European Social Fund—ESF) through the Operational Programme "Human Resources Development, Education and Lifelong Learning 2014-2020" in the context of the project "Development and pilot implementation of an educational intervention program for Health Literacy and Nutrition Literacy in Hypertension Patients: A Randomized Control Trial" (MIS: 5049028).

Author Biographies

Maria Michou

Maria Michou holds a PhD in the Human Ecology Laboratory, Department of Economics and Sustainable Development, Harokopio University, Athens, Greece. She also has an MSc in Stress Management & Health Promotion. Her research interests are focusing on health & nutrition literacy and their determinants, stress, public health promotion and health policy.

Niki Mourouti

Dr Niki Mourouti is a Registered Dietitian, she holds a PhD and she is a research fellow at the Human Ecology Laboratory of the Department of Economics and Sustainable Development at Harokopio University. Her research interests are focusing on nutrition and cancer, health education and public health promotion.

Christos Lionis

https://orcid.org/0000-0002-9324-2839

Lionis Christos, MD, PhD, FRCGP(Hon), FWONCA, FESC is a Professor of General Practice and Primary Health Care at the School of Medicine, University of Crete and Head of the Clinic of Social and Family Medicine at the School of Medicine, University of Crete.

Panagiota Kalagia

Ms Panagiota Kalagia is a registered public health care nurse and she holds an MSc. Her research interests are focusing on health promotion.

Angelos G Ioannidis

Dr Angelos Ioannidis, MD, PhD, is a Medical Doctor working in primary health care

Michalis Kaloeidas

Dr Michalis Kaloeidas, MD, MSc, is a Medical Doctor in primary health care with a keen interest in Health Promotion and Health Literacy issues.

Vassiliki Costarelli

https://orcid.org/ 0000-0002-3863-838X

Vassiliki Costarelli is an Assocate Professor in Nutrition Behavior and Health, in the Department of Economics and Sustainable Development, at Harokopio University, Athens, Greece. She is a dietician and a registered nutritionist (R.Nutr.) She is an active member of the Human Ecology Laboratory and her research interested are focusing on nutrition and dietary behavior, diet and quality of life, health literacy, childhood obesity and cancer.

References

Barbouni, A., Nalmpanti, M., Gennimata, D. et al. (2017). Beliefs and practices of Greek doctors in relation to patients' adherence to antihypertensive medication. *J Hum HypertensJournal of Human Hypertension, 31*, 341–346.

Belizan, M., Alonso, J.P., Nejamis, A. et al. (2020). Barriers to hypertension and diabetes management in primary health care in Argentina: qualitative research based on a behavioral economics approach. *Translational Behavioral MedicineTransl Behav Med, 10*(3), 741-750

Bonaccorsi, G,, Modesti, P.A (2017). Health literacy, a new perspective for patient empowerment in the public health approach to hypertension. *Internal and Emergency Medicine,Intern Emerg Med, 12*(6), 737-739.

Eronen, J., Paakkari, L., Portegijs, E. et al. (2019). Assessment of health literacy among older Finns. *Aging Clinical and Experimental Research, 31*, 549-556.

Gustafsdottir SS, Sigurdardottir AK, Arnadottir SA et al. (2020). Translation and cross-cultural adaptation of the European Health Literacy Survey Questionnaire, HLS-EU-Q16: the Icelandic version. *BMC Public Health, 20*(1), 61.

Heinert, S., Escobar-Schulz, S., Jackson, M. et al. (2020). Barriers and Facilitators to Hypertension Control Following Participation in a Church-Based Hypertension Intervention Study. *American Journal of Health Promotion, 34*(1),52-58.

Johnson, H.M., Warner, R.C., LaMantia, J.N. et al. (2016). "I have to live like I'm old." Young adults' perspectives on managing hypertension: a multi-center qualitative study. *BMC Family Practice, 17*,31.

Khatib, R., Schwalm, J.D., Yusuf, S. et al. (2014). Patient and Healthcare Provider Barriers to Hypertension Awareness, Treatment and Follow Up: A Systematic Review and Meta-Analysis of Qualitative and Quantitative Studies. *PLoS ONE, 9*(1). e84238

Kitzinger, J. (1995). Qualitative Research: Introducing focus groups. *BMJ, 311*, 299-302.

Liamputtong, P. (2013). *Qualitative research methods* (4th ed.). South Melbourne, Victoria Oxford University Press.

Lionis, C., Symvoulakis, E.K., Markaki, A. et al. (2009). Integrated primary health care in Greece, a missing issue in the current health policy agenda: a systematic review. T*he International Journal of Integrated CareInt J Integr Care, 30*,9:e88.

Lorini, C., Lastrucci, V., Mantwill, S. et al. (2019). Measuring health literacy in Italy: a validation study of the HLS-EU-Q16 and of the HLS-EU-Q6 in Italian language, conducted in Florence and its surroundings. *Annali dell'Istituto superiore di sanità, 55*(1),10-18.

Maguire, M., Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. All Ireland *Journal of Teaching and Learning Higher Education, 9*(3), 3351..

Michou, M., Costarelli, V. (2022). Validity and Reliability of the European Health Literacy Survey Questionnaire (HLS_EU_Q16) in the Greek Language. *Mediterranean Journal of Nutrition and Metabolism, 15*(2), 285-294.

Mills, K.T., Bundy, J.D., Kelly, T.N. et al. (2016). Global Disparities of Hypertension Prevalence and Control: A Systematic Analysis of Population-based Studies from 90 Countries. *Circulation, 134*(6), 441–450.

Nam, H.J., Yoon, J.Y. (2021). Linking Health Literacy to Self-Care in Hypertensive Patients with Physical Disabilities: A Path Analysis Using a Multi-Mediation Model. *International Journal of Environmental Research and Public Health, 18*(7), 3363.

Nieuwlaat, R., Schwalm, J.D., Khatib, R. et al. (2013). Why are we failing to implement effective therapies in cardiovascular disease? *European Heart Journal, 34*, 1262–1269

Okwuonu, C.G., Ojimadu, N.E., Okaka, E.I. et al. (2014). Patient-related barriers to hypertension control in a Nigerian population. *International Journal of General Medicine,Int J Gen Med, 7*, 345-353.

Orom, H., Schofield, E., Kiviniemi, M.T. et al. (2018). Low Health Literacy and Health Information Avoidance but Not Satisficing Help Explain "Don't Know" Responses to Questions Assessing Perceived Risk. M*edical Decision Making, 38*(8), 1006-1017.

Pelikan, J. (2014). Measuring comprehensive health literacy in general populations—The HLS-EU Instrument, Taipeh, 6.-8.10.

Rabiee, F. (2004). Focus-group interview and data analysis. *Proceedings of the Nutrition Society*, 63, 655-660.

Robatsarpooshi, D., Mahdizadeh, M., Alizadeh Siuki, H. et al. (2020). The Relationship Between Health Literacy Level and Self-Care Behaviors in Patients with Diabetes. *Patient related outcome measures, 11*, 129–135.

Salm, F., Ernsting, C., Kuhlmey, A. et al. (2018). Antibiotic use, knowledge and health literacy among the general population in Berlin, Germany and its surrounding rural areas. PLoS ONE, 13(2):e0193336.

Stergiou, G.S., Menti, A., Kalpourtzi, N. et al. (20210). Prevalence, awareness, treatment and control of hypertension in Greece: EMENO national epidemiological study. *Journal of Hypertension, 39*(5), 1034-10398: 000-000.

Tong, A., Sainsbury, P., Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health CareInt J Qual Health Care, 19*(6), 349-357.

Tsimtsiou, Z., Kokkali, S., Tatsioni, A. et al. (2020). Identifying patient-related barriers in hypertension control: a multi-centered, mixed-method study in Greek rural practices. *Rural and Remote Health, 20,* 5710.

WHO. (2021) *More than 700 million people with untreated hypertension*. Joint News Release. Geneva, Switzerland, August 2021

Wilkins, E., Wilson, L., Wickramasinghe, K. et al. (2017). European Cardiovascular Disease Statistics 2017. European Heart Network.*European Cardiovascular Disease Statistics 2017,* European Heart Network, Brussels.

POSITION PAPER

Justifying Home Economics: Fight the right war

Sue L. T. McGregor
McGregor Consulting Group, Canada

Abstract

This position paper supports the argument that home economists have been fighting a war of attrition (i.e., a gradual wearing down through sustained attack or pressure) when they should be fighting an ideological war. Until we can see and expose the ideologies and paradigms behind people's perceptions of home economics, our litany of excuses and reasons justifying our existence goes unheard or is dismissed (unworthy of consideration), disregarded (lack of attention) or disrespected (lack of esteem and recognition). People cannot hear us anymore, if ever, because we failed to engage with ideologies and paradigms. After profiling nine dominant ideologies and seven paradigms and framing the family as a social institution (with six United Nations-sanctioned functions), a roster of 11 scenarios (battles) was presented to help home economists see the ideologies and paradigms in action in the broader public and private discourse, so they can expose them and develop different counterpoints in the war on ideology.

KEYWORDS: **IDEOLOGIES; PARADIGMS; FAMILY AS A SOCIAL INSTITUTION; BRING BACK HOME ECONOMICS; WAR METAPHOR**

Introduction

This position paper was prompted by a May 2022 *Times Educational Supplement* (TES) article (Hepburn, 2022), in a string of many such misguided articles, about bringing back home economics (McGregor, 2021; Pendergast, 2017; Smith 2016). The general secretary of the Scottish Secondary Teachers' Association's (SSTA) was lamenting the loss of home economics in Scottish public schools:

> General secretary Seamus Searson, whose union will address the subject's troubles at its annual conference this week, said: 'Home economics as a subject is at serious risk of disappearing from secondary school timetables, as a result not only of the shortage of home economics teachers but also because of the lack of support from local authorities and headteachers.' (Hepburn, 2022, para. 4)

Upon reading his assumptions about why this was happening, I reached my limit. I wrote this article. We do *not* need saving (rescued); we need respect for what we strive to bring to the world, which is a healthy and strong family social institution. It is a sad, sad state of affairs

McGregor, S. L. T. (2022). Justifying Home Economics: Fight the right war. *International Journal of Home Economics, 15*(2), 33-45.

Email: Sue McGregor ✉ Sue.McGregor@msvu.ca

that we feel we must continually justify our existence. Home economics[1] is more than 125 years old, yet our raison d'être has **not** changed—the perpetual onslaught of progress on individuals, families, and homes. My burning issue is that in our efforts to stand up for and justify the profession, we fight the wrong war (i.e., a sustained conflict or contestation between groups). We may win a few battles, but we are losing the war that we subconsciously chose to fight. Instead of fighting a **war of attrition** (i.e., a gradual wearing down through sustained attack or pressure), we should be fighting **an ideological war**—a war of persistent ideas about home economics.

The Home Economics Lament

Ideologies are systems of ideas that form the basic beliefs about how the world should be and how it should be interpreted (Harper, 2023) (e.g., patriarchy, capitalism, neoliberalism, and consumerism). Ideologies are powerful cultural blueprints (dictates, assumptions) of what is (a) worthy of our *belief* and attention; (b) accepted as *true*; and (c) important, worthy, ideal, and desirable (*valued*). These blueprints (something that acts as a model or a template) are a set of rules for how society should work and how people should behave in that society and make sense of life lived by those rules. Ideologies are the ruling *ideas* of the time and a prescribed way to live our lives (Dillman, 2000; Duerst-Lahti, 1998; Johnson, 2005).

In our ignorance of the power of ideologies, when faced with the attrition of home economics, we lament instead that it is struggling because (a) public school programs are cut due to a home economics teacher shortage. (b) People in power positions (e.g., government, school administrators, governing boards) just don't appreciate who and what we are and why we're needed (i.e., we fault the people). (c) We feel maligned because people erroneously assume we are a women's profession, and somehow that is a bad thing. Most of us are women, but our focus is families where women happen to live. (d) We claim our university programs suffer because program closures and excessive specialization have led to fewer PhDs, so there is no one to hire to perpetuate the discipline (McGregor, 2015; Pendergast & McGregor, 2007). The litany goes on and on and on ad nauseam. In our ideological ignorance (i.e., lack of knowledge and awareness), **we fight the wrong war**.

My pushback to this list of excuses (explanations to justify a misfortune) and reasons (explanations of the cause of something) for our alleged demise is thus: home economics is under threat **because** of the dominance of particular ideologies (informing ideas about home economics) **and** our predisposition to not acknowledge this fact. To win the ideological war, we must expose the ideology, which is usually quite invisible (see Text Box 1, McGregor, 2015, p. 546), and argue that embracing its tenets is what threatens home economics. Everything else is just a distraction.

When calculating pension income for retired citizens, most national retirement pensions and income security policies do not *count* unpaid caregiving work done by women in the home and community. This type of work it is not captured in the national accounts (GDP) of countries because, from this observation tower (paradigm), only work that people get paid for 'counts.' The result is that women lose their income security as they age because their care giving work was not valued by policy makers who adhered to the belief systems of the market economy: competition, scarcity, profit, individualism (an ideology). Because these women contributed more to the informal economy than to the formal economy, it is assumed that they do not deserve to benefit from public monies accumulated for 'hard working retired citizens.' Because most people in society have come to accept this situation as the norm, they do not question the policy makers' decisions. Instead, they assume that the women are not worthy, that they have to go without, because they chose to engage in less valued reproductive and care giving roles rather than the more valued 'productive' role of members of society. It is assumed that a woman's place has always been in the home and should remain so. This work was never salaried because it was never considered to be a contribution to the economic wealth of a nation.

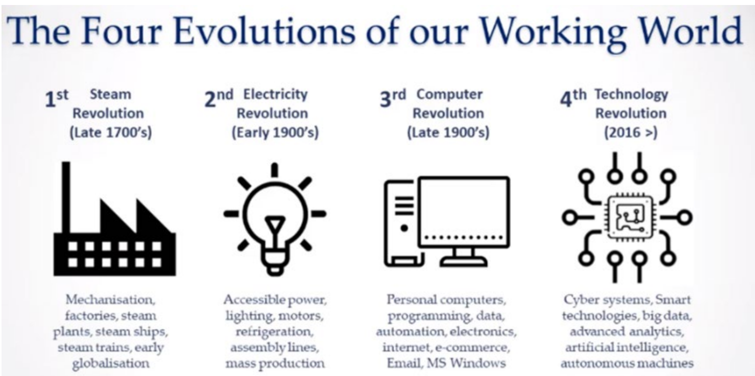
Text Box 1 Examples of Invisible Ideologies

[1] The message herein applies to home economics, family and consumer sciences (FCS), human ecology, home ecology, home sciences, human sciences, household sciences, family studies, consumer sciences, consumer and technology studies, and other names for the profession around the world—the irony of this list (*who* is fighting the war) is not lost on me.

Progress and Home Economics

Home economics came into existence in the mid-1800s to help families fight the vagaries of then unheard-of industrial progress and attendant societal transformation. In lay terms, progress usually means moving or developing toward a better, more complete, and *modern* condition. Indeed, the Modern Era, ushered in by the Second Industrial Revolution (the Age of Science and mass production, mid-1800s start date), was predicated on optimism and a belief in constant progress, especially a belief in the possibilities of technological, economic, and political progress. Unfortunately, the Modern Era took its toll on humanity via movement away from traditions (i.e., long-established customs and beliefs) toward different customs and beliefs in the name of progress (Almond et al., 1982; Trailhead, 2022)—including new or reincarnated ideologies. Families and home economists are still reeling from the industrial revolution because there was not one but four lasting nearly 300 years and still happening (David, 2016; Trailhead, 2022; Williams, 2019) (see Figure 1):

- First Industrial Revolution (1740–1850)—the age of mechanical production (steam, waterpower, and mechanization);
- Second Industrial Revolution (1850–1950)—the age of science and mass production (electricity, oil-based power, and assembly lines);
- Third Industrial Revolution (1960–1990s)—the age of computers, the digital revolution, and the knowledge economy (computerization, information technologies [IT] systems, and automation); and
- Fourth Industrial Revolution (2000 onward)—the age of technology and exponential technological fusion (physical, digital [cyber physical], and biological) (smart factories with web connectivity) in concert with never-before-seen societal transformation due to exponential evolutions in artificial and digital intelligence.



Source: Strategic Decision Solutions (Williams, 2019) used with permission

Figure 1 Four Industrial Revolutions

Ideologies and Paradigms

Pressure on families from this exponential, unprecedented progress is not going away—it is just getting worse. Even more challenging for home economics is that this progress took the damaging form of dominant ideologies that privilege everything *except* families (who are deemed useful *only* if they are contributing to the formal, paid economy as labourers, producers, or consumers).

Dominant Ideologies

The nine dominant ideologies shaping today's world include the (a) oppressive, invasive, top-down, corporate-led *globalization* driven by *capitalism* and *neoliberalism*; (b) rampant and relentless expansion of *consumerism*; (c) ubiquitous *technologic* innovations happening at a daunting and exponential pace; (d) seeping and steeping of *patriarchy* and *social Darwinism* into our collective cultural psyche; and (e) unanticipated, rapid emergence of religious and political *conservatism* and *fundamentalism* (see Table 1 drawn from Donovan, 1997; Eaton, 1996; Elgin & Drew, 1997; Marsden & Littler, 1999; McGregor, 2008b, 2019b; McGregor et al., 2008; Riley, 1990). As a tip, most ideologies and paradigms end with these suffixes: *ism* (doctrines); *archy* (where power is vested); *ion* (denotes action); *ity* (denotes a state or condition); *al* (like, related to); and *ic* (having to do with) (Harper, 2023). Respectively, examples include capitalism, patriarchy, globalization, modernity (the Age of Ideologies), transactional, and mechanistic.

Table 1 Dominant Ideologies

Ideology	Details
Top-down Globalization	Economic interdependence of nations worldwide facilitated by technological innovations (telecommunications, transportation, and international financial centers and transactions), less nationalism, unrestricted free trade, global markets, outsourcing and offshore production, powerful corporations and weaker governments, and the inherent undermining of cultures, languages, and communities.
Capitalism	Economic ideology that values economic self-interest, profit, wealth accumulation, economic growth, investments, production, technological progress, and international trade agreements for economic unity of the elite. Resources are privately owned and used to accumulate private wealth, power, and position. Depends on wages for labourers, commodities for consumers, and profit for capitalists (producer).
Neoliberalism	Privileges anything that minimizes government intervention in the economy; individualism (self-interest, personal success); privatization (public services provided by for-profits); decentralization (devolve public services to local levels); deregulation (remove or minimize laws, regulations, restrictions to business); and laissez-faire markets (nominal role for government in business, finances, trade, and workers' lives—just enough to ensure competition, sanctity of contracts [transactions], property ownership, and wealth accumulation).
Consumerism	Inculcates the values of the Western consumer lifestyle on a global scale. It is a set of beliefs and values wherein people believe their human worth is best created and personal happiness best achieved through excessive consumption and materialism (accumulation of possessions and experiences [services]). Consumerism is the crux of capitalism.
Technologic	Industrial application of scientific knowledge for practical purposes; a branch of knowledge dealing with the creation and use of technical means (all sorts of machines, materials, skills, and processes) and their interrelation with life, society, and the environment. Scientific-technological methods and tools can both improve and worsen the human condition.
Patriarchy	Societal, economic, educational, or political systems where men hold all the power and exert domination over women, children, and weaker men. Men are in the more powerful and prestigious positions where they exercise power and authority over everyone else. This power marginalizes and disempowers others creating an unhealthy and untenable dependency replete with inequities, inequalities, and outright harm.
Social Darwinism	Survival of the fittest with *fit* defined as those with the most reason and logic using it to make choices while cognizant of the consequences. *They* deserve to survive. If people cannot adapt without help, they are deemed unfit, and it is in society's interest to let them fail. That way, resources are not wasted. Society is better off without them and has the moral obligation to not help them.
Conservatism	Hold the past in reverence and view change with skepticism; justify maintaining the status quo of the ruling elite; conserve what exists; resist altering proven institutions and societal values; deep respect for authority, customs, and traditions.
Fundamentalism	This is the strong, unwavering attachment and adherence to any set of beliefs in the face of criticism or unpopularity. Religious text and dogma or political doctrines are interpreted literally and strictly. Determination to maintain ingroup and outgroup distinctions and reject diversity of opinions. People should live by the established fundamentals—strict core beliefs, which often cannot be substantiated with proof or reasoning.

Dominant Paradigms

Ideologies (blueprints for our culture) are societal-level *ideas* about what life should be like and how people should (re)act. In comparison, paradigms are people's thought patterns, habits of reasoning, and modes of interpretation that are informed by ideologies. Paradigms are patterns (mental instructions) that people turn to when thinking about something (McGregor, 2019b; Soleiman, 2018). Per Figure 2, the lens on the forehead represents the invisible, usually unquestioned, ideologies flooding into people's minds. The two lower lenses represent how people see the world through their paradigms (thought patterns), which, as noted, are established habits of thinking based on assumptions about the world, assumptions shaped by the beliefs in the ideologies (see Table 1). These paradigms profoundly affect how people respond to and interpret their encounters with the world. Text Box 2 shares an example of these three-lens glasses using an ideological camp and paradigmatic watchtower metaphor (McGregor, 2019b, p. 19).

Figure 2 Representation of Invisible Ideologies Flooding into the Mind. Source: Unidentified magazine advertisement, ca. 1995

> Imagine that the people living in the camp are following the ideological cultural blueprint of Darwinism's survival of the fittest, competition for scarce resources (capitalism), and power extorted by a few men over the many (patriarchy). If the person standing in the watchtower values the same things, life in the camp will make complete *sense* to them. If, however, that person believes in different values, like collaboration, sharing, sustainability, and gendered power, the camp activities they observe will take on totally different meanings. They will *see* exploitation, waste, and oppression and be stymied as to how anyone could willingly live in that camp.

Text Box 2 Paradigms (Thought Patterns) at Work

Paradigms related to the dominant ideologies include positivism, empiricism, reductionism, relativism, materialism, transmissional and transactional perspectives, and the mechanistic worldview. People using these seven paradigms value scarcity, competition, efficiency, profit, wealth, self-interest, the win/lose approach to success, and individualism. They respect linearity (cause and effect), fragmentation, facts, mastery, categories, specializations, and quick fixes (see Table 2 drawn from Donovan, 1997; Eaton, 1996; Elgin & Drew, 1997; Marsden & Littler, 1999; McGregor et al., 2008).

Table 2 Dominant Paradigms

Paradigm	Details
Positivism	The only way we can be positive that something is true is if it was discovered using the scientific method. What you can't measure doesn't count (e.g., theology and metaphysics: intuition, wisdom, spiritual, faith, and religion). Knowledge gained through human senses rather than reasoning and logic is not valid. Thus, values, morals, and ethics are denied. Only knowledge gained by studying relationships between existing facts can be trusted. Whatever is necessary to find new facts and knowledge can be justified; the end justifies the means.
Empiricism	Theories intended to explain, predict, control, or understand the world are based only on scientific proof (scientists studied nature or other humans). Scientific results of controlled experiments and observations trump intuition or faith. Others can verify the truth (new knowledge) by replicating the experiment. All knowledge comes from scientific experiments and scientific observations. Any unscientific knowledge is illogical and unverifiable hence untrustworthy.
Reductionism	Assumes that complex things can be understood by breaking them down into their simpler parts. The thing is then described by describing each part instead of how the parts work together to create the whole thing. Reductionism leads to categories, labels, specializations, fragmentation, and loss of diversity, which feels like failure, exclusion, and voice not heard. It further assumes that entities of one kind can be systematically replaced with entities of another kind (e.g., that the life sciences can be reduced to the physical sciences; social Darwinism can be used to explain social behaviour—Darwin's theory actually pertained to biological evolution in nature not to social evolution.
Relativism	Relative means considered in relation to or compared to something else. Relativism holds that there is no absolute, unqualified truth. The truth is conditional and changes with the context; "Everything is relative." Knowledge, truth, and morals exist in relation to cultures, societies, and history. Applied to life, people are concerned with quick fixes and immediate gratification rather than long-term commitment or sustainability. People want a short-term advantage for their self-interest.
Materialism	The goal in life is to accumulate material objects (goods) and experiences (services) with these taken as evidence of social achievement and personal success, which is achieved through conspicuous consumption in a high-consumption culture. The latter are enabled by globalization, capitalism, and neoliberalism.
Transmissional and transactional	Transmission refers to passing on or sending something from one person to another. Transactional refers to an exchange of one thing for another. The thing stays the same (unchanged) in both processes unlike transformational wherein both the thing and the people involved can undergo marked change in nature, form, character, and essence.
Mechanistic	Views the world as a machine, especially a mechanical clock that is winding down. Humans have no control over this process. To make time last as long as possible, we must focus on mastering the material world using technology, science, and consumption (materialism). Because things are winding down, we cannot let moral compunction get in the way of living as long as possible before the unavoidable end, no matter what we have to do (the end justifies the means thereby legitimizing top-down globalization, capitalism, and neoliberalism).

In summary, property ownership, dominance, profit, and competition are worthy values. Hence, women and children can be seen as chattel and are supposed to be dominated, profit comes before compassion, and competition trumps cooperation. It is thus alright to have schools couched in competition; alright for businesses to rip-off consumers, the weaker market player; alright for women and children to be abused and trafficked—they must have done something to deserve it; alright to exploit the environment to help the capitalist elite get richer by producing more things to consume; alright for politicians to cut welfare, housing, childcare, unemployment insurance, and so on for the fiscal good of the nation or to meet free trade conditions; alright for homelessness to prevail—they must have failed somehow; alright to have an unbreachable gap between the elite and the poor. ... The litany goes on (Lerner, 1986; Pendergast & McGregor, 2007).

What is worse is that these ideologies and paradigms impact individuals and families in a convergent conflation creating a profoundly hard-to-push-back-against dynamic. Indeed, to quote the Borg, it seems "Resistance is futile." But as Yoda and The Force would say, "Resist we must." It is my position that, instead of making excuses and lamenting our losses (fighting a war of attrition), home economics should be exposing and fighting the ideologies (ideas) that affect how others view families and by association home economics. Until then, both remain undervalued.

Undervalued Family Social Institution

Bottom line—our sole reason for existing as a profession is to help individuals, families, and communities enhance and optimize their well-being and quality of life. Unfortunately, the prevailing ideologies only value families as workers and producers who earn wages or employ others or as consumers who spend to contribute to the economy thus ensuring economic progress. If families are not valued, then, by association, home economics is not valued either. It is that simple and that complex. It is thus sinfully easy for others to dismiss our profession and not support it (McGregor, 2008a). Our claim that home economics is needed now more than ever, when the aspect of society that we serve—families—is *not* valued, is futile and lost on the powerbrokers who are undervaluing (under estimating) and devaluing (depreciating) both.

The undervaluation and depreciation of families—**this** is why home economics is being cut from public schools. **This** is why home economics teacher education preparation programs are being cut at colleges and universities. **This** is why home economics graduate programs are not supported leaving a huge gap in our intellectual capital for the future. **This** is why.... Our only way forward is to *fight an ideological war*. The time has passed for excuses and reasons in response to attrition. Our counterarguments *must* change because these ideologies (ideas) are taking their toll on the family as a social institution.

To illustrate this point, consider that, when dealing with ideological fallout, extraordinary change in the *structure* of family units has occurred despite that families (no matter what they *look* like) must still fulfill six United Nations-sanctioned *functions* as a social institution (Sokalski, 1992) (see Table 3, McGregor, 2009, p. 63 used with permission). Single (lone) parent families struggle with Functions 1, 4, and 5. Dual income families (both parents working, often several jobs) may struggle with Function 3, 4, and 6. Childless couples may wrestle with Function 2 if they want children. Families living on social assistance likely struggle with Functions 1, 5, and 6. And so on for other family structures including blended or step (reconstituted) families, divorced families, common-law families, same-sex families, and grandparent families.

Table 3 Six Functions of Family as a Social Institution

1	*Emotional care and physical maintenance of group members and relatives.* Within healthy families, children, adults, and seniors all receive the care and support they need (e.g., food, shelter, clothing, protection). This support is provided for the healthy, sick, and people with disabilities.
2	*Addition of new members* through procreation or adoption as well as fostering and guardianship. Society renews itself through families. Families also *give name and legal status* to their members.
3	*Socialization and education of children into adult roles and responsibilities.* Families prepare children for life by teaching skills, values, and attitudes that equip them to learn, work, form friendships, and contribute to society. Children also socialize adult family members.
4	*Social control of members* (e.g., setting boundaries, disciplining, mentoring) and *protection* of family members against all forms of violence. This exercise yields the maintenance of order within a family and any groups external to it. Within families, individuals learn positive values and behaviors and receive criticism and lessons to mitigate negative ones. Sometimes family members have to be protected from each other.
5	*Production, consumption, exchange and distribution of goods and services.* Families provide for their own by consuming and producing goods and services. As they strive to fulfil their members' needs, they play a vital role in local and national economies by earning, spending, saving, investing, and giving money and in their roles as laborers and entrepreneurs.
6	*Maintenance of family morale and motivation* to ensure task performance both within the family and in other groups. Families provide the glue that holds society together and keeps it functioning. Beyond providing mere social control, families, through love and spiritual leadership (emotional caring and upbringing), inspire, nurture, and support their members' self-esteem, self-understanding, and potential.

The only way we can redress the current inequitable treatment of families, and by association home economics, is to fight the right war—an ideological war (see Text Box 3, McGregor, 2021, p. 87). We need to message that families are the core democratic social and economic unit underpinning humanity. Home economists work *through* families to strengthen humanity and the world (McGregor & Piscopo, 2021). We need to help people hear, heed, and value *that* message.

> Imagine a school board that is cutting a food program in favour of a commercial food program. Its justification is, "Why pay for two food programs?" Once female home economists take the time to figure out where the male administrative staff is coming from (i.e., their unarticulated patriarchal assumptions that are shaping their decisions and actions), it is easier to articulate arguments that support the home economics food program. We have to question the administration's assumptions about food—lifestyle, home, and food are difficult to quantify, *but* commercial and food are hard and measurable hence more defensible. To continue, we live in a world that values money and numbers not home and food. So, to any board members embracing patriarchy, it makes *complete* sense to value the commercial food program, even though they *may not even know why* they are leaning that way (again, ideological blinders). The home economist's job is to help them see this. With that insight, it is easier to make different arguments supporting the home economics food program knowing one is going up against an ideology and not evil people. Once home economists have a better understanding of patriarchy's invisible power, they can make it visible, which helps others hear our message.

Text Box 3 Illustration of Fighting the Ideological War

Exposing and Challenging Ideologies and Paradigms

I have been arguing that we are fighting *a war of attrition* when we should be fighting an *ideological war*. Paul Hawken (2010) shared a powerful sentiment that I now apply to home economics. If you ask any group of well-meaning home economists if they woke in the morning to fight the war of attrition as they justified home economics, most of them would not raise their hand. So—if they are doing it without intention, but they are doing it anyway—the idea must be embedded in their mind (ideologies and paradigms) thus *making* them do things instead of being something they *want* to do. That tells me their approach can be critically explored, shifted, and reversed, and that conscientious home economists can *choose* to wage a different war—an ideological war.

To help with this task, I have prepared a roster of familiar scenarios encountered when fighting battles in the war of attrition, so home economists so inclined can *see* the ideologies and paradigms (see Tables 1 and 2) in action. These scenarios (battles) help expose the ideologies and paradigms underlying what others think, say, and feel about, and do to our profession. This exposure mitigates the distraction caused by other's dismissal of (unworthy of consideration), disregard for (lack of attention), and disrespect for (lack of esteem and recognition) home economics, reactions emergent from enduring our litany of excuses and reasons in response to attrition. They cannot hear us anymore, if ever, because we failed to engage with ideologies and paradigms.

McGregor (2019b) addressed the changes in thought patterns (paradigm shifts) and inherent resistance that both home economists and other actors must experience for things to be different. In the meantime, we must first learn to recognize the ideologies and paradigms espoused in private and public discourse, so we can ferret them out, confront them, and deal with them constructively, so all parties benefit. "Ideologies matter in the home economics profession" (McGregor et al., 2008, p. 48).

- When home economists are forced to tick a box *other than* home economics to register themselves for grants, library holdings, conference presentations, United Nation's sections, and so on, they are encountering reductionism. Despite being a discipline in its own right, home economics is reduced to human sciences, social sciences, natural sciences, and so on.

- Being told by university administrators that the home economics department is being closed with some of the individual parts farmed out to other, allegedly more worthy existing faculties, colleges or departments is an example of patriarchy (where power is vested), reductionism (absorbed by something else), and Social Darwinism (i.e., home economics is not fit enough to survive, so don't waste any more resources on it).
- The incremental weakening of home economics program offerings in educational institutions (reflecting a lack of administrative support to sustain and protect them) is evidence of patriarchy, capitalism, the technologic ideology, and the mechanistic world view (i.e., save the rest of the school by sacrificing home economics—the end justifies the means). Social Darwinism is also evident in that administrators view home economics as not fit to survive, so don't waste resources on it.
- Being forced to accept the hiring of non-home economists to avoid losing paid positions or an entire program is an example of reductionism (i.e., home economics can be reduced to sociology, marketing, child psychology, physical education, health, or technology). Although home economics is interdisciplinary and integrated, administrators who value fragmentation and specialization (reductionism) rather than holism still privilege individual disciplines. They are easier to quantify (positivism). In a mechanistic world, the end justifies the means.
- Being told that home economics is redundant and expensive, and that students can learn its content in other, allegedly more worthy subjects, departments, colleges, or faculties, is an example of (a) the reduction of home economics; (b) relativism (quick fix to bolster staff complements in other faculties—the end justifies the means); and (c) capitalism (changes made in the name of efficiency, competition, scarcity, and profit). This is also an example of the (d) transmissional paradigm wherein administrators erroneously assume that home economics content can be moved to another subject areas with no loss or change entailed.
- Being told that home economics is not valuable because it is an applied, *soft* science is an example of positivism (too hard to quantify) and patriarchy (home economics practitioners are mostly women). Our counterarguments that home economics is both soft (applied) and hard (basic) science *by design*, and that it is interdisciplinary, are rejected because of empiricism, positivism, and materialism (fragmentation, privileged disciplines, especially STEM [Science, Technology, Engineering, and Mathematics]).
- Closing a home economics food program (that enables families) but funding a commercial food program (that profits businesses) is an example of capitalism and patriarchy. The same goes for closing a clothing and textiles program but allowing an industrial design and merchandising program to continue. Child studies might be cancelled, but a commercial day-care business program is supported.
- Cancelling food labs in public schools (because labs are too expensive to run) is an example of capitalism (efficiency and profit), patriarchy (low value of home and family who benefit from students learning about food), and relativism (a short-term gain and fiscal quick fix for the school board). In these scenarios, the science labs are rarely shut down and are often further funded to support the STEM movement (McGregor, 2019a).
- Closing entire home economics programs in public schools (food and nutrition, clothing and textiles, housing, family dynamics, child studies, human development,

consumption, and resource management), but leaving science, reading, mathematics, technology, and career courses in place, is an example of positivism, patriarchy, and globalization. It reflects a total lack of respect for the family as a social institution while privileging other social institutions: the science community, economic system, labour market, political system, and education system.

- Dismantling home economics curricula and placing the dredges in technology and career programs is an example of the technologic ideology, capitalism, globalization, and patriarchy (industry is male dominated). However, something is *not* always better than nothing when that something (i.e., home economics) has been diluted and lost its potency.
- Basing the 'bring back home economics movement' on the premise that teaching food and nutrition (nothing else) will help fight obesity and avoid associated expensive health problems (Pendergast, 2017; Smith, 2016) is an example of capitalism, neoliberalism, and patriarchy. It is also a reflection of globalization in that Big Pharma and private hospitals will save money, boost their profits, and bolster their competitive edge. Also, home economics must be more than food and nutrition if it is to help people improve their well-being and quality of life. Eschewing the other elements of family life is patent reductionism.

Conclusion

The war metaphor is often used as a rhetorical trope (figure of speech) for political effect especially when fighting *isms* like ideologies and paradigms (Childress, 2001). While acknowledging the moral dilemma of using war metaphors to make political points (Childress, 2001), it was effective for messaging that home economists must carefully choose how they respond to the future of home economics. The powerbrokers of the world do not value families as a social institution, meaning they do not value home economics either. Fighting this devaluation is an up-hill battle that requires a great deal of determination and effort. But it should be achievable if one fights the right war using the right weapons and strategies to gain advantages and defend and advance oneself to victory.

Home economics is especially affected by the overarching, longstanding, pervasive flaw in societal power dynamics in the form of undervalued families (except as producers, labourers, and consumers). Our very existence serves to enhance and optimize the well-being and quality of life of this social institution, which struggles to perform key functions (see Table 3) for the good of each other and humanity. If a hard-hitting metaphor can help home economists *see* ideologies and shift paradigms and strategies to articulate our raison d'être and why we matter, I make no apologies for resorting to this war-based message—**we are fighting the wrong war**. We need to shun the war of attrition and fight a war of ideologies—a war of ideas about home economics.

Author Biography

Sue L. T. McGregor https://orcid.org/0000-0002-4392-9608

Sue L. T. McGregor (PhD, IPHE, Professor Emerita, MSVU) is an active independent researcher and scholar in consumer studies; home economics philosophy, leadership, and education; transdisciplinarity; and research paradigms and methodologies. She published Understanding and Evaluating Research (SAGE, 2018). Her home economics scholarship is at her professional website: www.consultmcgregor.com

References

Almond, G. A., Chodorow, M., & Pearce, R. H. (1982). *Progress and its discontents*. University of California Press.

Childress, J. F. (2001). The war metaphor in public policy: Some moral reflections. In F. J. Carl (Ed.), *The leader's imperative: Ethics, integrity, and responsibility* (pp. 181–197). Purdue University Press.

David, N. (2016, January 19). What is the fourth industrial revolution? *World Economic Forum Blog*. https://www.weforum.org/agenda/2016/01/what-is-the-fourth-industrial-revolution/

Dillman, R. (2000). *Ideology*. http://www.rdillman.com/HFCL/TUTOR/ComEnv/ComEnv3.html

Donovan, P. (1997). *Paradigms and decision-making frameworks. Managing Wholes*. http://managingwholes.com/holistic-management-1.htm

Duerst-Lahti, G. (1998, March 20–22). *Masculinism as governing ideology: Epistemological consequences* [Paper presentation]. Western Political Science Association Annual Meeting, Los Angeles, CA.

Eaton, J. M. (1996). *Paradigms*. Nova Scotia Department of Health. http://www.chebucto.ns.ca/CommunitySupport/NCC/SCDEFJE.html

Elgin, D., & LeDrew, C. (1997). *Global consciousness change. Awakening Earth*. https://duaneelgin.com/wp-content/uploads/2010/11/global_consciousness.pdf

Harper, D. (2023). *Online etymology dictionary*. https://www.etymonline.com/

Hawken, P. (2010). *The ecology of commerce*. HarperCollins.

Hepburn, H. (2022, May 11). Home economics 'disappearing' from some Scottish schools. T*ES Magazine*. https://www.tes.com/magazine/news/secondary/home-economics-disappearing-some-scottish-schools

Johnson, P. M. (2005). *A glossary of political economy terms*. Auburn University. http://www.auburn.edu/~johnspm/gloss/ideology

Lerner, G. (1986). *The creation of patriarchy*. Oxford University Press.

Marsden, D., & Littler, D. (1999). A dialectical approach to consumer research: Beyond positivism and postmodernism. *European Advances in Consumer Research, 4*, 341–346. https://www.acrwebsite.org/volumes/11100/volumes/e04/E-04

McGregor, S. L. T.(2008a). Family studies as an educational strategy [Keynote presentation]. *First National Conference on Family Studies*, Floriana, Malta. http://consultmcgregor.com/documents/keynotes/malta-keynote-2008.pdf

McGregor, S. L. T. (2008b). Ideological maps of consumer education. *International Journal of Consumer Studies, 32*(5), 545–552. https://doi.org/10.1111/j.1470-6431.2008.00686.x

McGregor, S. L. T. (2009). Becoming family literate: A new construct and platform for practice. *Journal of Family & Consumer Sciences, 101*(1), 60–66.

McGregor, S. L. T. (2015). The future of family and consumer sciences (FCS) and home economics: An international and intergenerational vignette. *Journal of Family & Consumer Sciences, 107*(3), 9-17.

McGregor, S. L. T. (2019a). FCS, STEM, and STEAM: Two lines of inquiry. *Journal of Family & Consumer Sciences, 111*(4), 35–48. https://doi.org/10.14307/JFCS111.4.35

McGregor, S. L. T. (2019b). Paradigms and normativity: What should FCS do in light of 21st century change? *Journal of Family & Consumer Sciences, 111*(3), 10–25. doi:http://dx.doi.org/10.14307/JFCS111.3.1

McGregor, S. L. T. (2021). Meme uptake strategy for re-invigorating home economics: HecMemes. *International Journal of Home Economics, 14*(2),80–93. https://www.ifhe.org/fileadmin/user_upload/e_Journal/Vol_14_2/7-McGregor_Meme_Uptake_Strategy.PDF

McGregor, S. L. T., Pendergast, D., Seniuk, E., Eghan, F., & Engberg, L. (2008). Choosing our future: Ideologies matter in the home economics profession. *International Journal of Home Economics, 1*(1), 48–68.

McGregor, S. L. T., & Piscopo, S. (2021). A caring professional continuum: Home economics working through families. *International Journal of Home Economics, 14*(2), 94–107. https://www.ifhe.org/fileadmin/user_upload/e_Journal/Vol_14_2/P8_McGregor.pdf

Pendergast, D. (2017, April 8-12). Home economics: Future proofing families for 21st century living [Keynote address]. *22nd Caribbean Home Economics Association Conference*, Montego Bay, Jamaica. http://caribbeanhomeeconomist.org/wp-content/uploads/2017/06/Keynote-Presentation-CAHE-Jamaica-2017-Prof-Donna-Pendergast.pdf

Pendergast, D., & McGregor, S. L. T. (2007). *Positioning the profession beyond patriarchy*. Kappa Omicron Nu. http://www.kon.org/patriarchy_monograph.pdf

Riley, J. L. (1990). *Moderate political ideologies: Liberalism and conservatism*. http://jim-riley.org/libcons.htm

Smith, M. G. (2016). “Bring back home economics”? Challenging contested discourses on obesity. *Journal of Family & Consumer Sciences, 108*(4), 7–12. https://doi.org/10.14307/JFCS108.4.7

Sokalski, H. J. (1992). *Family matters* [International Year of the Family Occasional Paper Series No. 1]. United Nations.

Soleiman, M. (2018, July 16). Thought patterns: Paradigms. *Lateral Magazine*. http://www.lateralmag.com/columns/paradigms/thought-patterns

Trailhead. (2022). *Module: The four industrial revolutions*. https://trailhead.salesforce.com/en/content/learn/modules/learn-about-the-fourth-industrial-revolution/meet-the-three-industrial-revolutions

Williams, C. (2019, December 3). How the fourth industrial revolution will reshape risk management. *ERM Insights Blog*. https://www.erminsightsbycarol.com/fourth-industrial-revolution-risk-manage

Section B: Peer-Reviewed Congress Papers

Peer-reviered papers presented at the

XXIV IFHE World Congress

in Atlanta, Georgia, USA, 4–10 September 2022

Papers have been published as received.

PEER-REVIEWED CONGRESS PAPER

A study of gender equality for life enrichment—exploring how to make a difference for gender equality at work and at home

Misa Morita
Kochi University, Japan

Introduction

This study explores how Japanese workers can positively influence themselves and those around them to promote gender equality by eliminating work-life bias and reviewing previous studies on home economics.

Several Japanese working women have the same "advantages" as men under certain laws. That is to say, some of them could acquire "capabilities" as discussed by economist Amartia Sen. Here, capability means having boundless freedom to fulfill our lives. For example, these include opportunities to participate in the labor market, attain equal wages, and land promotions from an economic perspective. Japanese working women need economic and social power and freedom from gender roles or gender ideologies.

However, a new study about gender equality in employment from a home economics perspective is needed, which begs the question, how can Japanese workers, both women and men, overcome work-life bias? It is said that Japan has a strong ideology that workers should selflessly devote themselves to work or their companies. It is unfortunate that workers cannot enrich their personal lives if they are forced to keep their selfless devotion to work. Employees with family responsibilities cannot build their careers in such a working culture. Therefore, we need to contemplate how working women and men can overcome bias to achieve a gender-equal society.

Literature on Gender Equality in Employment

Gender Equality in Business in Japan

Gender equality in business has become one of the most important topics not only for Japanese social policies but also for businesses in Japan. Given that Japan has serious population problems, including ageing and a low birth-rate, the Japanese government and companies expect women to participate in the labor market to keep the shrinking Japanese workforce and social welfare system.

In 2015, the Japanese government implemented the "Act on the Promotion of Female Participation and Career Advancement in the Workplace", which promotes labor participation of female employees and supports their work-life balance or professional development in their careers.

However, the Japanese gender gap ranks 117th out of 156 countries in business (World Economic Forum, 2021). Although the "Equal Employment Opportunity Law" enacted in 1985 banned discrimination in the recruitment and retirement of employees, other gender discriminative systems such as training and promotion gaps are still present in Japan. Women earn about 76.8%

Morita, M. (2022). A study of gender equality for life enrichment—exploring how to make a difference for gender equality at work and at home. *International Journal of Home Economics, 15*(2), 46-55.

Misa Morita ✉ kaseim@kochi-u.ac.jp

of men's income, and only 10% of board members in Japanese corporate are women (Gender Equality Bureau Cabinet Office, 2021).

Literature on Gender Equality in Employment

Studies on gender equality in employment have mainly focused on female workers in corporate management, economics, and differences in social policies.

Firstly, these studies have revealed the prevalence of discrimination against women at work. Presently, Japanese women are not treated equally to their male counterparts in their workplaces. For example, women's career paths are different from men's, and gender differences rather than educational background affect their chance of promotion. Furthermore, researchers have suggested that women need to have the same job opportunities as their male counterparts (Ootsuki,2015) (Yamaguchi,2017).

Secondly, studies on gender equality have focused on challenges in attaining a healthy work-life balance in the Japanese employment system that habitually excludes women with family responsibilities from the labor market. These studies suggest that there might be a strong correlation between the employment system and gender role ideologies. Therefore, researchers recommend Japanese companies abolish the outdated work culture that triggers the gender gap from effectiveness and productivity perspectives (Kawaguchi, 2008; Takeishi, 2012; Kawaguchi,2013).

A home economics perspective

There are several issues that home economics has to focus on these achievements regarding gender equality in employment.

Firstly, the goal of previous studies on gender equality in employment can likely be simplified into two objectives. The first is how working women can have the same financial and social advantages as men in the same level. The second is how to eradicate gender bias at work. It is essential that women have the same wages, training, and status as men do. However, exploring working women's holistic well-beings and development is a different ballgame altogether.

As Economist Amartia Sen said, gender equality is to let both women and men have the same capabilities (Sen,1999), meaning that we need to have many options to live freely. In particular, even if women can have labor rights, money, status, a persisting challenge would be how to free both women and men from the traditional ideology. Therefore, eradicating a bias like “Men should go out for work, while women should do housework and take care of family” should be a critical theme.

Undoubtedly, we need more studies on gender equality in employment focusing on work-life bias across both genders. The Japanese feminist Yumiko Ehara commented that the Japanese have a “work first” ideology, whereby they, especially working men, have a work-first attitude when managing their day to day lives.

However, conforming to this ideology would only propagate the current gap in equality, and gender roles at work and home in Japan will remain unchallenged (Ehara, 2022). Japanese workers are urged to be diligent by companies and society. However, the “diligence” definitely deprives workers of their life enrichment opportunities because such workers are always encouraged to prioritize work, sacrificing personal time. Notably, work and personal well-being are treated differently in the U.S; the importance of structuring a society where both the value of work and family care are guaranteed is expected (Slaughter,2016).

Secondly, previous studies have modelled the narrative mainly around women. While it is vital to discover how to eradicate discrimination against women and how they can empower themselves through legislation or supportive resources, gender equality is an issue affecting everyone. Still, many Japanese men in their 30s work longer hours (more than 60 hours) in a week (Gender Equality Bureau Cabinet Office, 2022). Japanese men's notorious workstyle has not changed. Therefore, men also need to be free from the masculinity stereotype as breadwinners and promote a gender-equitable society with women.

Thirdly, previous studies on gender equality have attempted to solve gender issues from government and corporate perspectives. Improving legislation or reforming the work culture are essential topics for women's empowerment. In addition, workers, not only women but also men should advocate for their rights to governments. However, the home economics approach can also examine the possibility of workers eradicating the work-life bias. Because home economics studies have empowered and helped people solve problems related to our lives. The Japanese home economist Shunsuke Nagashima stated that home economics should resist the market socialism that degrades human life development (Nagashima, 2021).

Methods

This study conducted an internet survey of company workers in Japan in 2019. A total of 1000 workers (500 male and 500 female workers) participated in the study. In this study, workers refer to businesspeople employed at private companies.

Let us review some of the study's main questions for the participants.

First, "work-life bias" consisted of three opinions, and participants were offered four choices from "strongly agree" to "strongly disagree", as shown below:

- Those who prioritize personal life cannot have good results at work.
- Those who prioritize personal life cannot be first class businesspeople.
- Those who prioritize personal life cannot be trusted as businesspeople.

Second, in this study "advantage" means income and employment rank. As for the employment rank, this study divided the participants into two categories (regular workers or above chief clerk, regardless of their employment status).

Third, this survey asked the workers the experiences and opinions about life. At first, this study asked them the realization of learning about life. It is how they realize that they have "learned" various matters related to their lives. For example, we asked them how much they think they have studied "food", "clothing", "housing", "consumption", "child-rearing", "environmental issues" and so on in the past, including schooldays.

Next, this study asked them their current and future life value perspective. This study gave them five categories, referring to the Japanese opinion survey (NHK Broadcasting Culture Research Institute, 2019). We asked them to what extent they value each of the following five things in life: "health", "friendly relationships", "economic power", "worthwhile work and activities", and "having enjoyable hobbies". This study gave the workers four scales for these questions, "strongly agree" as 4, "agree" as 3, "disagree" as 2, and "strongly disagree", as 1.

The main characteristics are shown in Figure 1. Their average age is 46.5 years old as for women, and 47.1 as for men. About half of them have children. However, women are more likely than men to have them. As for the employment status, as a whole, about 70 % of them are full-time workers. However, there is a difference in the status between women and men. Currently, more than half of Japanese women are working as part-time. Therefore, the real ratio of women's part-time workers is higher than the data we had in this survey. In addition, about 70% of their employment rank is regular. And about 25% of them have university school diploma, and about 15% of them earn about two or three million yen in a year. We can see the gender gap in the data (Figure 1).

Fig 1. Main characteristics

Demographic	Women (500)	Men (500)	Total (1,000)
Average age	46.5 years old	47.1 years old	46.9 years old
With child	53.2%	42.8%	52.0%
Employment status	Full time 55.0% Part time45.0%	Full time 81.6% Part time18.4%	Full time 68.3% Part time31.7%
Employment rank	Regular 88.5% Above chief clerk 11.5%	Regular 58.1 % Above chief clerk 41.9%	Regular 73.2% Above chief clerk 26.8%
Education Background	High school 28.4% University 38.5%	High school 22.0% University 54.0%	High school 25.2% University 46.3%
Income (Mode)	1-2 million JPN (25.5%)	4-5 million JPN (17.0%)	2-3 million JPN (15.6%)
Sharing of the housework (couples)	81.4% (*N* = 255)	26.4% (*N* = 313)	51.1% (*N* = 568)

Results

Gender roles and gender bias

Sixty-four-point-nine percent of workers disagreed with gender roles despite income or occupational status. However, in reality, the ratio of those who did not have gender bias at work and at home were much lower (Figure 2).

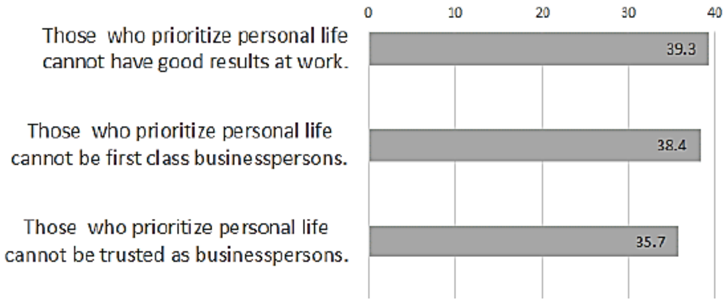
Fig 2. Gender roles and gender bias

Do you think that men should go out for work, while women should do housework and take care of family? (%)				
(x^2= 6.677, df = 1, p <0.05)	**Yes**		**No**	
	n	**%**	***n***	**%**
Female workers (500)	156	31.2	344	68.8
Male workers (500)	195	39.0	305	61.0
Total (1,000)	**51**	**35.1**	**649**	**64.9**
It is natural that men work long hours (%)				
(N.S.)	**Yes**		**No**	
	n	**%**	***n***	**%**
Female workers (500)	58.6	586	41.4	41.4
Male workers (500)	58.8	588	41.2	41.2
Total (1,000)	**58.7**	**587**	**41.3**	**41.3**
Men should be breadwinners (%)				
(N.S.)	**Yes**		**No**	
	n	**%**	***n***	**%**
Female workers (500)	672	67.2	328	32.8
Male workers (500)	672	67.2	328	32.8
Total (1,000)	**672**	**67.2**	**328**	**32.8**

Work-life bias

This study investigated workers' opinions on work-life bias. The chi-square test showed that there was no significance by gender. Of the total study population, 39.3% of participants agreed that those who prioritize personal life could not have good results at work. Next, 38.4% of them agreed that those who prioritize personal life could not be first class businesspeople. Lastly, 35.7% of them agreed that those who prioritize personal life could not be trusted as businesspeople (Figure 3).

Fig. 3 Work-life bias



(N = 1000)

Work-life bias and the possibility of remaining silent against gender discrimination

Next, this study tested the relationship between employees' work-life bias and the possibility to act against gender discrimination at work. It also examined if there was a difference between men and women's tendency to speak up.

Figure 4 shows that 31.0% of female and 40.4% of male workers responded that they would not act if they witnessed or experienced gender discrimination. There was a statistical difference between women and men (x^2 = 9.623, df = 1, p <0.01).

Fig. 4 The possibility to act when witnessing gender discrimination at work

	Will you do nothing when you see or hear gender discrimination at work? (%)			
	Yes		No	
(x^2 = 9.623, df = 1, p <0.01)	*n*	%	*n*	%
Female workers (500)	155	31.0	345	69.0
Male workers (500)	202	40.4	298	59.6
Total (1,000)	**357**	**35.7**	**643**	**64.3**
Female workers (I want professional skills and work dedication for society (Aspiration for working in future career))	**Will you do nothing when you see or hear gender discrimination at work? (%)**			
	Yes		No	
(x^2 = 4.801, df = 1, p <0.05)	*n*	%	*n*	%
Yes (319)	88	27.6	231	72.4
No (181)	67	37.0	114	63.0
Total (500)	**155**	**31.0**	**345**	**69.0**
Female workers (I want friendly relationships (life value perspectives))	**Will you do nothing when you see or hear gender discrimination at work? (%)**			
	Yes		No	
(x^2 = 3.469, df = 1, p <0.1)	*n*	%	*n*	%
Yes (448)	133	29.7	315	70.3
No (52)	22	40.4	30	59.6
Total (500)	**155**	**31.0**	**345**	**69.0**

Incidentally, as for women, when we asked them the spiration for working in future career, those who want professional skills and work dedication for society were likely to have wills to raise voice for gender equality. In addition, those who value friendly relationships (as their current and future life value perspective) were also likely to have wills to raise voice for gender equality (Figure 4).

Figure 5 shows the result of the t-test indicating that men are likely to remain silent if they agreed to two of the three work-life bias questions. This trend was not observed among female respondents (Figure 5).

Fig 5. The relationship between the possibility of acting when witnessing gender discrimination at work and work-life bias (Male workers)

		Work-life bias								
Will you do nothing when you see or hear gender discrimination at work?		Those who prioritize personal life cannot have good results at work.			Those who prioritize personal life cannot be first class business people.			Those who prioritize personal life cannot be trusted as business people.		
		MEAN	***N***	**T-test**	**MEAN**	***N***	**T-test**	**MEAN**	***N***	**T-test**
	YES	2.40	202	2.806**	2.34	202	1.504 +	2.32	202	2.761**
	NO	2.20	298		2.23	298		2.12	298	

Note **p <0.01, +p <0.1 There are four scales in these work-life bias questions, "strongly agree" as 4, "agree" as 3, "disagree" as 2, and "strongly disagree", as 1.

Women's gender-equal advantages and their work-life bias

This study also attempted to establish whether female workers can avoid work-life bias when getting gender-equal advantages like income and employment rank. Therefore, this study assessed the correlation between female workers' income and work-life bias. In addition to that, it conducted a t-test analysis between female workers' employment status and their work-life bias. However, there were no statistically significant differences.

Next, this study investigated whether female workers who seek gender-equal advantages can overcome work-life bias. Therefore, the correlation between employees who seek higher wages and social success in their future careers and their work-life bias was examined. Figure 6 shows that the higher women's aspiration for promotion or social success in their future careers, the more they agreed to all work-life bias questions (Figure 6).

Fig. 6. Correlation between women's aspiration for working and their work-life bias

Aspiration for working in future career	**Work-life bias**		
	Those who prioritize personal life cannot have good results at work	Those who prioritize personal life cannot be first class businesspeople	Those who prioritize personal life cannot be trusted as businesspeople
I want to work to earn a higher income.	0.097	0.079	0.036
I want to be promoted and be socially successful.	0.251**	0.300**	0.293**

NOTE: **p <0.01 There are four scales in these questions, "strongly agree" as 4, "agree" as 3 , "disagree" as 2, and "strongly disagree", as 1.

Can a company reduce workers' work-life bias?

This study explored how companies can overcome work-life bias. Therefore, workers were divided into two categories: high work-life bias workers and low work-life bias workers, using the median value of the three total work-life bias scores as a baseline. A t-test analysis was also performed to determine which group conformed to their companies' 21 practices for work-life balance, gender equality, and workers' comfortable workplace. A 4-item scale was provided for each question, from "agree" to "disagree", and if the total score of the 21 practices were high, the conclusion was that the workers complied with the companies' practices. However, there were no statistically significant differences across the scores.

How can employees overcome bias?

Finally, this study used discriminant analysis to forecast employees likely to experience a high work-life bias and those who will have low ones in the future. Factors affecting employees' lives (e.g., their life value perspectives and learning experiences) and their impact on their work-life bias were investigated. This study included both female and male workers because work-life bias applies to both genders, and work and personal life are equally important.

The analysis results showed that if the absolute value of the independent variable is high, it can have a substantial effect on the dependent variable (Work-life bias). In addition, if the independent variable is positive (plus), it shows that it can impact the dependent variable positively (leading to more bias), and if the independent variable is negative (minus), it can impact the dependent variable negatively (leading to less bias).

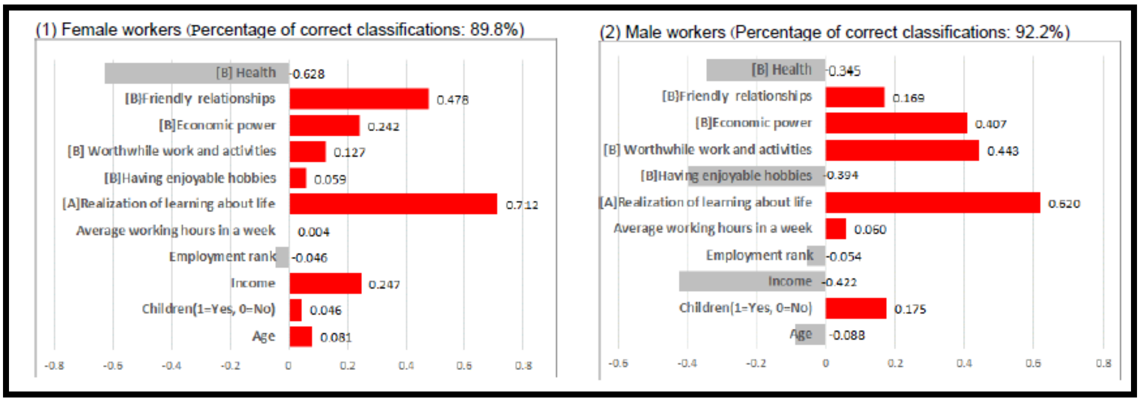
Work-life bias (Female employees)

The statistically influential variable to the dependent variable were, Realization of learning about life, (0.712), Health (Life value perspectives) (-0.628), Friendly relationships (Life value perspectives) (0.478), Income (0.247), and Economic power (Life value perspectives) (0.242) for female workers (Figure.7).

Work-life bias (Male employees)

The statistically influential variables to the dependent variable were, Realization of learning about life, (0.620), Worthwhile work and activities (0.443), Income (-0.422), Economic power (Life value perspective) (0.407). Having enjoyable hobbies (Life value perspective) (-0.394). In addition, the score of Health was also big (-0.345) for male workers (Figure 7).

Fig. 7 Discriminant analysis (How can employees overcome bias?)



NOTE: [A]This is the total score of workers' understanding of learning life skills, including "food", "clothing", "housing", "consumption", "child-rearing", "environmental issues" and so on in the past, including schooldays. This study offered participants a 4-item scale for each question. [B]They are questions related to "Life value perspective".

Discussion

Japanese workers' work-life bias and life enrichment

Many Japanese employees have work-life bias in addition to gender bias (in Results (1)(2)). This will not lead Japanese working people to their life enrichment. According to the findings of the present study in Results (2), approximately 40% of Japanese employees are likely to think that businesspeople should prioritize work rather than personal life and accept the status quo as a norm to be acknowledged and respected as businesspeople in the workplace. Both female and male Japanese workers agree that their personal lives are not considered critical to their well-being due to their higher tendency to prioritize work. Japan is known as a country with notorious long working hours.

Some people have reportedly died from being overworked. In recent years, several women in regular positions (with the prospect of promotion) died from being overworked. Arguably, Japan ranks poorly with oppressive and dangerous conditions for workers. Because the Japanese work culture still disregards personal time or time for family responsibilities.

For Japan to achieve gender equality in employment, both women and men should reconsider the recognition of the work-oriented ideology they embody.

The effects of men's work-life bias on “silence”

It is crucial for men to overcome work-life biases. Results (3) showed that men with higher work-life bias are more likely to remain silent and take no action when they face gender discrimination at work. Moreover, Results (3) showed that male workers are more likely than women to be silent when they witness gender discrimination at work. The number of male workers failing to take action against discrimination was about 10% higher than that of female workers. If male workers increasingly acknowledge that work should be prioritized over private life, they lose the capacity to support initiatives to end gender discrimination at work.

Effects of gender-equal advantage on work-life bias against women

The elements of gender-equal benefits do not always make women overcome work-life bias at work.

Several improvements in legislation and promotion for gender equality by the government or companies have resulted in a narrower wage gap in the Japanese workplace. Furthermore, these initiatives have decreased the board members gap in the Japanese workplace, albeit at a slower pace compared to other developed countries.

However, the survey (4) investigated whether female workers have higher income and employment ranks, their work-life bias scores were almost statistically the same. In addition, female workers seeking promotion were more likely to accept work-life bias than those who did not.

Undoubtedly, Japanese women can achieve equal opportunities as men at work. There is a need to transition from a gender-oppressive culture towards a gender-equal society. However, we should be concerned that even when women achieve gender equality at work, they may remain trapped in the Japanese traditional ideology that work should come before private lives. The Japanese government and several companies have encouraged women at work and created promotional campaigns to improve women's empowerment in the corporate world. However, it is vital to understand how female workers can eradicate their work-life ideology and establish a solid foundation free from work-life bias for future generations.

Workplace for women's empowerment and bias

According to the results (5), this study reveals that companies' women's empowerment practices do not directly change workers' work-life bias, which begs the question: How can female employees overcome bias? Results (6) shows some crucial points.

The first is that workers' disposition to learning about life skills can impact work-life bias. If female workers perceive themselves as adequately knowledgeable about life skills, they may advance the ideology that work and private life should not treated equally.

Notably, the Japanese home economics education has taught Japanese students how to manage their lives for a more life enrichment, including achieving independence, building stronger partnerships between family members, and creating sustainable development goals. Furthermore, these home economics education practices have contributed to creating a gender-equal society for students.

In this study, questions related to life the realization of learning about life were not straightly related home economics education. This study shows that there may be a hidden norm that "Private life should be offered in workplaces if requested" in our family, community, schools, workplaces, and the whole society. We have to provide people with the opportunities that embody what a "rich" life represents.

The second valuable finding is that women's tendency to seek friendly relationships in their lives possibly increase their likelihood to experience work-life bias at work. Taking care of others' well-being is one of the important factors to healthy and effective interpersonal relationships. However, if Japanese working women value cooperativeness with other people, including colleagues excessively, the Japanese work-oriented culture would remain unchanged. To eradicate this risk, results (6) showed that it is important for women to focus on their physical well-being (healthy life). In addition, women's employment rank can lead to lower work-life bias. However, it is likely that the power of influence is small. In addition to, equal income opportunities can lead to lower work-life bias for women.

The third is that men's economic or social fulfillment at work can increase work-life bias. Although, it is desirable to have worthwhile jobs, motivation, and earning. Results (6) showed that these factors increase the risk of their work-life bias. To avoid this, it is important for men to be more focused on their physical or cultural well-being rather than finances. A higher income can force men to advance mal-associated work-life bias, which was unlikely among female participants. Further, employment rank did not influence the biases.

Conclusions

First, we have to acknowledge the reality that many Japanese businesspeople experience not only gender bias but also work-life bias, regardless of gender. Both women and men have been victims of the Japanese traditional norms in business, prioritizing work than private life, and even sacrificing their private or family life for the workplaces. Also, this study showed that men who responded to remaining indifferent against gender discrimination at work perpetuated strong work-life bias. Both women and men are still in the ideology trap that work and private life are not guaranteed equally, necessitating the need to achieve gender-equal workplaces.

Second, women's financial and social advantages do not directly contribute towards reducing their work-life bias. For example, 50 years ago, many Japanese companies discriminated women by saying that "Women are less motivated and inferior to men in business". However, the society proves that it was a mistake. Nowadays, several policies on gender equality and work-life balance have introduced more gender-equal practices at work, although resolving the gender gap still requires more work. However, there was no difference in work-life bias between working women with higher incomes or employment ranks and those with lower incomes and employment ranks. Moreover, there is the possibility that working women seeking success in business (being promoted) experience more extensive work-life bias than those who do not pursue the same goals. It is hard to imagine that such working women can be supportive to those who want to balance work and their lives.

This study suggests that studies on gender equality in employment focus on how we perceive our lives. Even if the Japanese government and companies urge women to focus on financial success and climb career ladder, it may be challenging for both genders to work in work-life bias-charged atmospheres.

Third, there is the possibility that work-life biases can be eliminated when workers learn their life and their life values both in the past and the future, even amidst companies' practices that fail to address work-life bias.

However, there are critical challenges to overcoming bias. The Japanese society has to re-examine the existence of a hidden social norm; it is acceptable and natural that our private life can always be used at workplace. Furthermore, we need to talk about it together. For example, home economics can deal with these norms at school. Of course, the home economics education has taught girls and boys the importance of life skills and management. It is expected to appeal to shape the students' likelihood to value private and family lives more.

In addition, Japanese workers, both women and men, need to think about their physical or cultural life values in current and future life perspectives. From studying home economics, these perspectives can help employees overcome work-life bias. The eradication of work-life bias will be a solid foundation for gender equality in employment.

Acknowledgement

This work was supported by KAKENHI (Grant-in-Aid for Scientific Research No.17K00757)

References

Ehara, Y. (2022). *Seibetsu Category no Senzaika*. Tokyo: Shosai no Mado, N0679,27-31, Yuuhikaku.

Gender Equality Bureau Cabinet Office. (2021). *White paper on gender equality 2021*. Retrieved on March 27th https://www.gender.go.jp/about_danjo/whitepaper/r03/zentai/ind ex.html

Kawaguchi, A. (2008). *Gender Keizai Kakusa*. Tokyo: Keiso Shobo.

Kawaguchi, A. (2013). *Nihon no Gender wo Kangaeru*. Tokyo: Yuuhikaku.

Nagashima, S. (2021). *The Future Issues Relating to Economic and Managerial*. Tokyo: Seikatsu Keieigaku Kenkyu N056,28-37.

NHK Broadcasting Culture Research Institute. (2019). Nihonjin no Isiki Chousa（2018）Kekka no Gaiyou. Retrieved on March 27th https://www.nhk.or.jp/bunken/research/yoron/pdf/20190107_1.pdf

Ootsuki, N. (2015). *Shokumu Kakusa*. Tokyo: Nihon Keizai Shinbun Shuppansha.

Slaughter, A.M. (2016) Unfinished Business: Women Men Work Family, New York: Random House.

Sen, A.K. (1999). *Inequality Reexamined* (Y. Ikemoto, H. Nogami, & J Sato, Trans.). Tokyo: Iwanami Shoten. (Original work published 1992)

Takeishi, E. (2012). *Kokusaihikaku no Shiten kara Nihon no Work-life Balance wo Kangaueru*. Tokyo: Mineruva Shobou.

World Economic Forum. (2021). Global Gender Gap Report 2021. Retrieved on March 27th https://www.weforum.org/reports/global-gender-gap-report-2021

Yamaguchi, K. (2017). *Hatarakikata no Danjo Fubyoudou Riron to Jissyou Bunseki*. Tokyo: Keiso Shobo.

PEER-REVIEWED CONGRESS PAPER

Assessment of knowledge, attitude and practice of pregnant women regarding maternal nutrition: A cross-sectional study from Ebonyi State, Nigeria

Elizabeth Igba Chimezie & Ifeanyichukwu Akuma
Ebonyi State University Abakaliki, Nigeria

Abstract

Background: *Nutrition has a major effect on human health throughout life. This is most significant for expectant mothers as proper nutrition is one of the methods of achieving maternal and fetal safety or wellbeing. Pregnancy is one of the most vulnerable stages of a woman's life cycle. Hence this study seeks to assess the knowledge, attitude and practice of pregnant women regarding maternal nutrition in Ebonyi state Abakaliki, Nigeria.*

Methods*: This study adopted a cross-sectional descriptive survey performed on 138 research participants within the age range below 20 years and above 35 years. Data used in this study were collected from two sources, the traditional literature review process and questionnaires respectively. Analyses of the data collected from the questionnaires for the study were analyzed using SPSS statistical analytical software.*

Results*: The age distribution of respondent show that 18.8% of the respondents fell within the age bracket of 20–24 years, 30% fell under 25–29 years, 28.6% fell under 30–34 years while above 35 years recorded 22.6%. The marital distribution of respondents showed that 8.6% of the respondents were single, 88.3% were married, and 2.3% were cohabiting while 0.8% fell under the others. Three-point-eight percent of the respondents had no formal education, 3.8% of them had primary education, followed by another 24.6% that had secondary education, 67.8% of the respondents had tertiary education. Forty-nine-point-two percent of the respondents were employed by the civil service, 16.4% were unemployed and 7.4% of the respondents were daily labourers while 27% were businesswomen. The mean, median, and range calculated from the study show that the knowledge and practice of the respondents were adequate while attitudes were inadequate.*

Conclusion*: The respondents had good knowledge, and good practice but a poor attitude toward maternal nutrition. Therefore, advocacy, communication, and social mobilization activities in the study area should be intensified to improve pregnant women's attitudes toward maternal nutrition.*

KEYWORDS: ASSESSMENT, KNOWLEDGE, ATTITUDE, PRACTICE, MATERNAL, NUTRITION, PREGNANT WOMEN.

Introduction

Nutrition as a science interprets the interaction of nutrients and other substances in food with the maintenance, growth, reproduction, health and disease of a living organism. It includes

Chimezie, I. E., & Akuma, I., Assessment of knowledge, attitude and practice of pregnant women regarding maternal nutrition: A cross-sectional study from Ebonyi State, Nigeria. *International Journal of Home Economics, 15*(2), 56-66.

Elizabeth Igba Chimezie ✉ mezdanenterprise@yahoo.com

taking food material, mastication process, digestion process and ejection process of these food materials (Daba et al., 2013). Nutrition is a key nitty-gritty of existence, health and human growth and development (World Bank, 2006). The entirety of the human race needs a minimal amount of nutrients for better physiological function. There are approximately 40 essential health nutrients. If the human body has nutrient deficient, the body becomes vulnerable and susceptible to harm (Collins, 2007). The deficiency of nutrients in food may have a certain effect on women during pregnancy.

Pregnancy requires sufficient energy and nutritional intake by women to meet maternal and fetal needs and other hormonal changes that occur during pregnancy, a good nutritional balance is essential to ensure sufficient energy intake for proper development and growth of the fetal without the fetal acting as a parasite to the host (mother) (Subarnalata and Panda, 2006). The survival of infants and children is affected by the poor health and nutrition of women and the lack of self-care or poor attitude during pregnancy and childbirth thereby compromising the child’s health (Abdella, 2010). Moreso, nutrition below the gold standard requirement for pregnant women has the most damaging effect on the fetal during pregnancy and in the first two years of life after birth, by impeding the child’s health, brain development, intelligence, educability, and productivity at large and most times irreversible (Shekar et al., 2006).

The pregnant and lactating woman’s food composition should include a substantial increase in calories, protein, calcium, folic acid, iodine and iron among others. Pregnant women that are likely affected by nutritional deficiencies are overweight women, underweight women, women having a severe nutritional related illness, women who use tobacco, consume alcohol or do drugs, underage girls, women with poor socioeconomic background, women with chronic illnesses and comorbidities (Edris et al., 2005). Malnutrition which is a nutritional deficiency can be transferred from mother to fetal during pregnancy and birth, therefore the nutritional condition of women is very important to take into consideration during antenatal care to curtail the harmful effects of malnutrition (Cetin and Laoreti, 2015). According to the World Health Organization (2021), asserted that during reproductive age and pregnancy, most women do not get enough micronutrients in their food intake and are unaware of how much nutritional status impacts pregnancy and birth outcomes. In Nigeria, women are primary caregivers and are responsible for producing and preparing food for the household, so the knowledge of good nutrition or the lack of nutritional knowledge can affect the health and nutritional status of the entire household.

Studies from Nigeria have revealed a high prevalence of both undernutrition and overnutrition, as well as nutrient deficiencies, including iron, folate, vitamin D and vitamin A amongst pregnant women (Senbanjo et al., 2013; Berti et al., 2016). According to Nigeria Demographic and Health Survey (2013), 11% of women of reproductive age are thin or undernourished (BMI less than 18.5kg/m2), 17% of women are overweight (BMI of 25–29 kg/m2), and 8% are obese (BMI of 30 kg/m2 or above). Overweight is most prevalent in Lagos indicating 44% (NPC and ICP, 2013) Consequently, obstetric complications such as hypertension, anaemia, neural tube defects, night-blindness, low birth weight and maternal and Prenatal mortality are common. In Lagos State, the maternal mortality rate is 650 deaths per 100 000 live births (Lindsay, Gibney and McAuliffe, 2012) Many of these deaths have malnutrition as the predisposing factor, either directly or indirectly.

Previous studies indicate a low rate of knowledge regarding nutrition during pregnancy in a certain part of the world (Daba et al., 2013; Mitra et al., 2012). The Practice of following a vegetarian diet during pregnancy is low in the previous studies conducted in America (the Federal Democratic Republic of Ethiopia, 2013). A plethora of studies and research proposals focus on maternal health but less attention is given to maternal nutrition in this study area (Berg et al., 2011) but similar studies have been conducted in Western Kenya and Northern

Nigeria however few studies have been done in South Western and South-East Nigeria. It is hoped that in doing this study, it will shed more light on the knowledge, attitude and practice of good nutrition among pregnant women in Ebonyi State and provide a basis for developing nutrition education programs and interventions that will improve quality of life and reduce morbidity, mortality and health-care costs.

It is clear that maternal nutrition is crucial in reducing maternal and infant morbidity and mortality, but no study has been conducted to assess the nutritional knowledge, attitude and practices of pregnant mothers in the study area. Therefore, this study aimed to assess the nutritional knowledge, attitude, and practices of pregnant women regarding maternal nutrition in Ebonyi State, Nigeria.

Statement of the Problem

Pregnancy is a very critical stage in a woman's life where her actions and inactions could affect the fetus significantly. Clinical facts indicated high and increasing maternal and child death of which most deaths are linked to nutritional deficiency or poor nutrition management during pregnancy (UNICEF, 2009). Nutritional deficiency is one of the leading causes of death not just among pregnant women, 4,000,000 newborns die within 28 days of birth in developing countries (Daba et al., 2013). The Millennium Development Goals and the Sustainable Development Goals are all focused on maternal health promotion and global health issues hence, ensuring a healthy society begins with promoting maternal nutrition education in schools, rural areas and communities. Maternal nutrition during pregnancy is crucial in reducing maternal mortality and fetal mortality which are the core objectives of the World Health Organization. Therefore, assessing the knowledge, attitude and practices of pregnant women regarding maternal nutrition become necessary in the study area.

Aim of the Study

To assess the knowledge, attitude and practices of maternal nutrition by pregnant women in Ebonyi State. Specifically,

1. Describe the socio-demographic characteristics of the pregnant women in Abakaliki Metropolis.
2. Appraise the knowledge of maternal nutrition amongst pregnant women in the Abakaliki metropolis.
3. Assess the attitudes of pregnant women in Abakaliki Metropolis regarding maternal nutrition.
4. Assess the practices of maternal nutrition by pregnant women in Abakaliki Metropolis.

Materials and Methods

Research Design

The design used was a cross-sectional descriptive study design.

Sources of Data

Data used in this study were collected from research respondents through questionnaires and others through reviewed literature.

Study Population and Sample

The study population were pregnant women of Abakaliki Metropolis, Ebonyi State, Nigeria. Respondents were met at homes, churches, markets, streets, schools and hospitals. A total of

138 respondents were used for the study within the age range of lesser than 20 years or above 35 years. A purposive and convenient sampling technique was used for the study. A total of 144 questionnaires were administered and 138 were returned which represents a 95.8% return. The sampling size was statistically determined using G-power software (version 3.1).

Inclusion criteria

The respondents were pregnant women who were at least a month pregnant and currently living in Abakaliki Metropolis Ebonyi State for at least 6 months to be considered a resident.

Exclusion criteria

Women who are not pregnant or less than a month old pregnant and are not residents of Abakaliki Metropolis Ebonyi at the time of the study.

Data Collection

Data collectors were recruited and trained for this purpose, the questionnaires were administered in the morning, afternoon and evening depending on the comfort of the research respondents. Data collected were analyzed using a statistical software package (SPSS version 10), frequency and mean were used for interpretation of a questionnaire that consist of knowledge, attitude and practice questions. The questionnaire was prepared in English and administered in English because 95% of the residents of the Abakaliki metropolis are literates, but other measures were taken such as using plain and simple sentences, we avoided the use of jargon and the data collectors served as local interpreters. The questions on the questionnaires included information on the socio-demographic characteristics of the respondent, knowledge, attitudes, and practice on maternal nutrition of pregnant women. Questions on the knowledge, attitude and practice part were each rated and a total score was obtained. The median and mean score was then computed. Therefore, those with a total score equal to or below the mean were classified as having poor knowledge, poor attitude and poor practice whereas those above the mean were considered to have good knowledge, attitude and practice.

Informed consent

Informed Consent Documents (ICD) containing the Participants Information Sheet and Informed Consent Form were prepared and handed over to prospective research participants. Participants were allowed to ask questions and clarifications were made. After getting consent from the participants, the questionnaire was handed to them and a copy of the signed informed consent sheet was also given to them for keeping. Privacy and confidentiality of participants' information were assured and safety measures were provided. The study was conducted only after due approval from the Ethics committee.

Research Instrument

The Instrument for data collection was the questionnaire which was structured to assess the knowledge, attitude and practice (KAP) of respondents. The questions were structured and answered by using the five-point Likert scale ranging from "strongly disagree" (SD), "disagree" (D), "don't know/ unsure" (DK), "agree" (A), "strongly agree" (SA). The instrument was presented in four sections A-D. Section A comprised bio-demographic data, section B comprised the knowledge questions, section C was the attitude questions and D was the practice questions. Section B-D contained a total of 23 questions. Points (1–5) were attached to each column ranging from SD to SA respectively. One hundred and forty-three questionnaires were administered by the researcher and research assistants and 138 were filled and returned, though some questions were not attempted by a few of the respondents.

Validation of Research Instrument

The data collection instrument was subjected to the review and critical examination of capable hands in the Health Systems and Health Policy field to ensure the relevance of contents and effectiveness to the problem under study. Corrections were made where necessary and irrelevant items were discarded.

Analytical

Analysis of the data collected for the study was done using the measures of central tendency (mean, median and mode). The formula for the analytical tool for the mean is:

Mean ($\bar{x}$) = ($\Sigma x \div N$); Σ = summation, X = scores, N = number of scores

Results

This chapter deals with the analysis and presentation of data. It is organized based on research questions. The information is depicted in tables and the interpretations come after each table.

Respondents' Characteristics

Table 1 shows that 18.8% of the respondents fell within the age bracket of 20–24 years, 30% fell under 25–29 years, and 28.6% fell under 30–34 years while beyond 35 years records only 22.6%.

Table 1: Age distribution of respondents

Category (Age in Years)	Frequency	Percentage
Below 20	0	0.0
20–24	25	18.8
25–29	40	30.0
30–34	38	28.6
Above 35	30	22.6
Total	**133**	**100**

Table 2 shows that 8.6% of the respondents were single, 88.3% were married, 2.3% was cohabiting and 0.8% was unspecified.

Table 2: Marital distribution of respondents

Marital Status	**Frequency**	**Percentage**
Single	11	8.6
Married	113	88.3
Cohabiting	3	2.3
Others	1	0.8
Total	128	100

Table 3 shows that 3.8% of the respondents had no formal education, 3.8% had primary education, 24.6% had secondary education and 67.8% had tertiary education.

Table 3: Educational level of respondents

Educational level	**Frequency**	**Percentage**
No formal	5	3.8
Primary	5	3.8
Secondary	32	24.6

Tertiary	88	67.8
Total	130	100

From Table 4 it can be seen that 49.2% of the respondents were civil servants, 16.4% of them were unemployed, followed by another 7.4% as daily labourers, 27.0% were business. The implication is that most people used for this study are civil servants.

Table 4: Occupational Status of the respondents

Occupation	Frequency	Percentage
Civil servant	60	49.2
Unemployed	20	16.4
Daily labourer	9	7.4
Business	33	27.0
Total	122	100

The figures below are a summary of the demographics using the pie chart, indicating the frequency and percentage distribution of the research respondents.

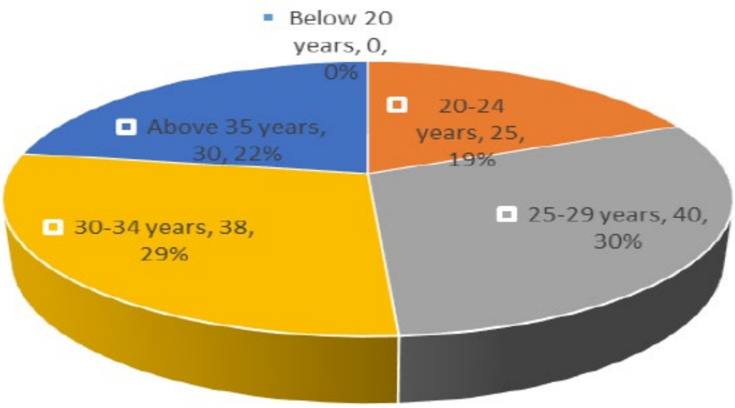


Figure 1: Age distribution of respondents

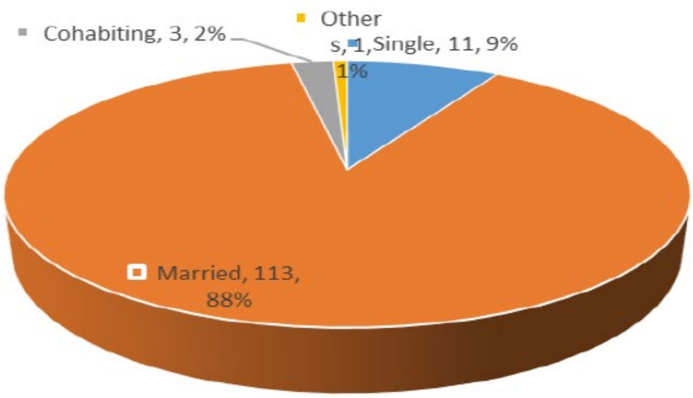


Figure 2: Marital distribution of respondents

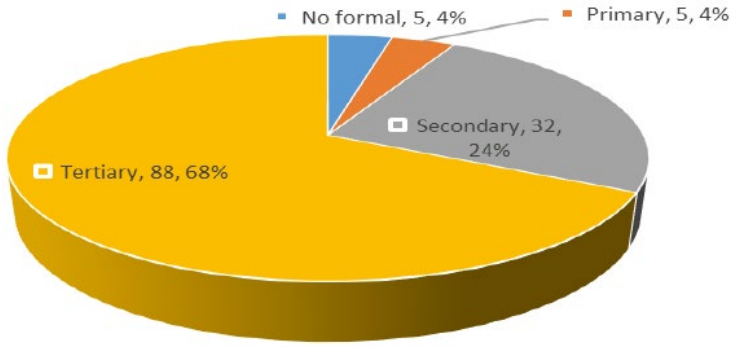


Figure 3: Education level of respondents

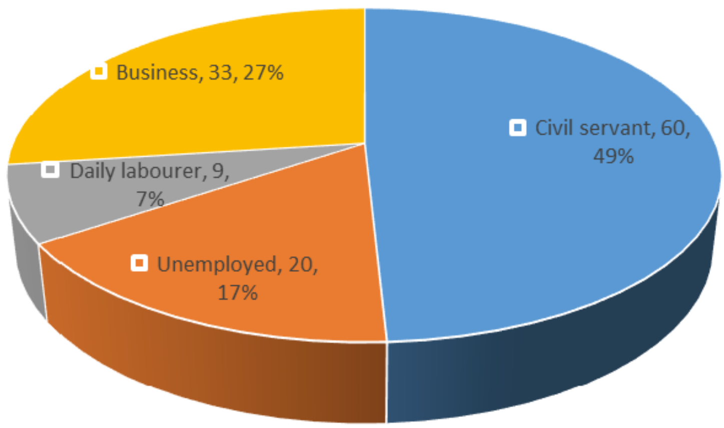


Figure 4: Occupational status of respondents

Table 5 reveals that Q5 had a mean of 3.47 which is below the cut-off point of 3.50. The respondents did not agree that Q5 is a good source of iron needed during pregnancy. It suggests that all other questions in table 5 with a mean of 3.50 and above are common knowledge among pregnant women in the Abakaliki metropolis.

Table 5: Pregnant women's knowledge of maternal nutrition

Likert Scale / Indicators	1	2	3	4	5	Total	Range	Median	Mean
Q1(Energy Source)	12	2	6	50	65	135	1-5	4	4.14
Q2(Iodine Source)	12	12	25	54	23	124	1-5	4	3.53
Q3(Protein Source)	8	8	23	53	41	131	1-5	4	3.89
Q4(Mineral Source)	9	3	12	40	68	132	1-5	4	4.17
Q5(Iron Source)	8	13	40	49	21	131	1-5	4	3.47
Q6(Vitamin Source)	5	10	26	61	32	134	1-5	4	3.78
Q7(Water as Nutrient)	9	11	13	60	36	129	1-5	4	3.79

Table 6 shows that pregnant women had a good attitude toward maternal nutrition during pregnancy in Q8 with a mean of 4.12, Q10 with a mean of 3.95, Q16 with a mean of 3.65 and Q17 with a mean of 4.02 respectively, while Question 9, 11, 12, 13, 14, 15 with mean of 2.83, 3.07, 2.13, 2.0, 1.94 and 3.01 respectively which is below the cut-off point of 3.50 were all indicators of poor attitude of pregnant women in the Abakaliki metropolis regarding maternal nutrition. This implies that the indicators in Questions 9, 11, 12, 13, 14 and 15 need intervention.

Table 6: Pregnant women's Attitude toward maternal nutrition

Likert Scale / Indicators	1	2	3	4	5	Total	Range	Median	Mean
Q8(Moderate Eating)	6	5	11	53	54	129	1-5	4	4.12
Q9(Meal Preparation)	25	42	8	38	16	129	1-5	2	2.83
Q10(Home Gardening)	2	15	13	59	43	132	1-5	4	3.95
Q11(Good Nutrition Habit)	12	47	15	40	20	134	1-5	3	3.07
Q12(Vegetarianism)	43	60	4	19	6	132	1-5	2	2.13
Q13(Cooking Methodology)	66	42	6	12	12	138	1-5	2	2.0
Q14(Food Supplements)	55	50	14	9	5	133	1-5	2	1.94
Q15(Processed Food)	18	32	28	42	14	134	1-5	3	3.01
Q16(Good hygiene)	11	10	32	46	37	136	1-5	4	3.65
Q17(Caffeine and Alcohol Intake)	11	5	16	43	60	133	1-5	4	4.02

Table 7 above reveals that pregnant women practice good nutrition during pregnancy for Q18 with a mean rating of 3.88, Q19 with a mean rating of 3.77, Q20 with a mean rating of 3.80, Q21 with a mean rating of 3.86, and Q23 with a mean rating of 3.66. Q22 shows a weak mean of 3. 30, which is below the cut-off point of 3.50, having a median of 3 and a range of 1-5. This implies that the extent to which three to four servings of dairy food are consumed per day such as milk, yoghurt and cheese during pregnancy at the time of data collection is low and not commonly practised amongst pregnant women in Abakaliki Metropolis.

Table 7: Pregnant women's Practice regarding maternal nutrition

Likert Scale / Indicators	1	2	3	4	5	Total	Range	Median	Mean
Q18(Protein Diet)	2	10	22	62	33	129	1-5	4	3.88
Q19(Folic acid Diet)	5	13	18	60	30	126	1-5	4	3.77
Q20(Calcium Diet)	3	10	23	64	27	127	1-5	4	3.80
Q21(Carbohydrate Diet)	1	9	33	59	35	137	1-5	4	3.86
Q22(Diary Food)	9	18	37	52	11	127	1-5	3	3.30
Q23(Iodine Food)	7	11	20	70	20	128	1-5	4	3.66

Discussion

This study was designed to assess the knowledge, attitude and practice of pregnant women regarding maternal nutrition in Ebonyi State. Eighty-eight-point-three percent of the respondents were mostly married from the age range of 25-29 (30%) and 30-34 (28.6%) as shown in Tables 1 and 2. Tables 3 and 4 revealed that most of the research respondents had tertiary education (67.8%) and are mostly civil servants (49.2%). There is a statistically significant association between socio-demographic characteristics such as age, level of education and job type regarding maternal nutritional knowledge.

Findings in Table 5 showed that most of the respondents had adequate knowledge of maternal nutrition except for a few who did not know that dark leafy greens such as spinach, kale, broccoli, potatoes, prunes and figs are good sources of iron. Iron intake needs to be increased during pregnancy because of the growth of the fetus, placenta and the expansion of maternal blood volume. Iron supplements are often necessary during pregnancy although milk, fruits particularly citrus fruits and vegetables in adequate amounts can supply all the necessary vitamins (Daba et al., 2013). In the same vein Fasola et al., (2018) observed that the low intake of fruits and vegetables may be due to their inability to afford the food which can lead to scarcity, deficiency and underutilization of such nutrients by the body. Low fruit and vegetable consumption have been reported to consistently have a higher prevalence among the most disadvantaged groups of people within a community (Hosseinpoor et al., 2012). The prevalence of low fruit and vegetable consumption tended to increase with age and decrease with income (Hall, Moore, Harper and Lynch, 2009) Studies from mainly developing countries showed that 78.4% of women consumed less than the minimum recommended five daily servings of fruits and vegetables (Hall et al., 2009). The daily consumption of fruits and vegetables by at least half of the respondents is higher than those in another study done in Maiduguri, Borno State, Nigeria where 26.53% of the respondents reported eating fruits and vegetables daily (Kever et al., 2015).

Table 6 reveals that pregnant women had a poor attitude regarding maternal nutrition. Questions 9, 11, 12, 13, 14, 15 have a mean score of 2.83, 3.07, 2.13, 2.0, 1.94 and 3.01 respectively lying below the cut-off point of 3.50. There was no statistically significant association between the knowledge of the respondents and their attitude towards good nutrition in the study area. This is not in keeping with a previous study done in Somolu Local Government, Lagos State and Manzini, Swaziland in which nutritional knowledge and attitude were significantly associated (Sakhile and Shu-Jan, 2014; Fasola et al., 2018). Igba (2008) and Igba (2013) noted that pregnant women should attend an antenatal clinic where nutrition education is done. Nutrition education influences nutrition security through the acquisition and allocation of behaviours related to food, health and sanitation (FAO, 1992, 1997). Since women are directly responsible for ensuring household nutrition security, it is vital to provide them with appropriate nutrition education and awareness programmes.

Question 22 on Table 7 indicated that three to four servings of dairy foods a day for example milk, yoghurt and cheese during pregnancy are not been commonly practised by pregnant women in Abakaliki Metropolis, Ebonyi State. Pregnant women have an increased demand for new tissues because of fetal development and growth. The increased protein need for tissue development can be met through drinking plenty of milk, eating meat and animal products or by-products and plant protein such as soybeans (Anyakoha, 2015). Pregnant women need an increased amount of protein to provide amino acids for fetal development, blood volume expansion and growth of fetal and maternal tissue, such as the breast and uterus. Protein intake of approximately 71grams/day is needed during the second half of pregnancy (Murrcy and Kinney, 2014).

Conclusion

Based on the findings of the present study, it can be concluded that pregnant women had good nutritional knowledge and practices of maternal nutrition but poor attitudes toward maternal nutrition. Analysis from the study indicates a significant positive relationship between the level of education, occupation, nutrition knowledge and practices amongst pregnant women in the study area.

Study Limitation

The assessment of knowledge, attitude and practice of pregnant women regarding maternal nutrition in Abakaliki Metropolis can be graded above average, although one may argue that the research respondents may not be giving out their lived experience, they may just fill out socially acceptable answers. An ethnography study on the knowledge, Attitude and Practice (KAP) of pregnant women regarding maternal nutrition is needed so that research results will have ground in reality. This is a quantitative research study and did not correlate KAP with maternal and fetal mortality. Convenient sampling was used in the present study; therefore, a large sample size is needed to collate more significant data on a comparative or causation study of KAP regarding maternal nutrition and mortality of mother, child or both during pregnancy/delivery.

Recommendations

Public health promotes education as the first step toward prevention. Hence the recommendations below:

1. Nutrition intervention such as nutrition education in different communities, health centres, health posts and women's organizations should be given particularly to pregnant mothers concerning nutrition during pregnancy to increase the nutritional attitude of mothers in the study area.
2. It is recommended that awareness of good, indigenous food cultures and dietary habits should be intensified to motivate practice and improve attitude.
3. Community leaders and members should invest in agriculture to enable increased access to fresh organic agricultural products such as fruits, vegetables, milk and dairy products.

Acknowledgements

We want to thank the Author's family for her unalloyed support, prayers and encouragement during this research work and the Institute for creating an enabling environment for research to strive.

Funding

The research is a self-sponsored study.

Authors' contributions

Both authors contributed to the generation of an idea, formulation of research design, data gathering, analysis, interpretation, revision and approval.

Conflict of Interest

The authors declare that there is no conflict of interest.

Authors' details

Elizabeth Igba Chimezie and Ifeanyichukwu Akuma, Department of Home Economics and Hospitality Management, Ebonyi State University Abakaliki, Nigeria.

Correspondent Email: mezdanenterprise@yahoo.com

References

Abdella A (2010). Maternal mortality trend in Ethiopia. *Ethiopian Journal of Health Development, 24*(1).

Anyakaha, E. U. (2015). *Home management for schools and colleges Onitsha*: African publisher.

Berg, K.C., Torgersen L, Von Holle A., Hamer R.M., Bulik C.M. & Reichborn-Kjennerud, T. (2011). Factors associated with binge eating disorder in pregnancy. *International Journal of Eating Disorders, 44*(2):124–133.

Berti C, Cetin I. & Agostoni C. (2016). Pregnancy and infants' outcome: nutritional and metabolic implications. *Crit Rev Food Sci Nutr, 56* 82–91.

Cetin, I. & Laoreti A. (2015). From the womb to the adult. In: Vassilios F, Michele M, Antonio DV et al., editors., eds. The importance of maternal nutrition for health. *Proceedings of the 11th International Workshop on Neonatology and Satellite Meetings., Cagliari* (Italy). J Pediatr Neonat Individual Med 2015; 4: e040220

Collins, S. (2007). Treating severe acute malnutrition seriously. *Archives of disease in childhood 92*:453–461.

Daba, G., Beyene F., Fekadu H. & Garoma, W. (2013). Assessment of Knowledge of Pregnant Mothers on Maternal Nutrition and Associated Factors in Guto Gida Woreda, East Wollega Zone, Ethiopia. *Journal of Nutrition and Food Sciences 3*(235).

Edris, M., Tekle H., Fitaw Y., Gelaw B., Engedaw D. & Alemu, T. (2005). *Maternal nutrition for the Ethiopian health centre team*. Addis Ababa, Ethiopia.

Fasola, O., Abosede O. & Fasola F. A. (2018). Knowledge, attitude and practice of good nutrition among women of childbearing age in Somolu. local government, Lagos State. *Journal of public health African 9*(1): 793

Federal Democratic Republic of Ethiopia (2013). *Central statistical agency population projection of Ethiopia for All Regions at Wereda Level from 2014-2017*. August 2013.

Food and Agriculture Organization (FAO) (1992). *Integrated diet quality and food safety into the food security programme*. Rome: FAO

Hall, J.N., Moore, S. Harper, S. B. & Lynch, J.W. (2009). Global variability in fruit and vegetable consumption. *Am J Prev Med:36*;402–9

Hosseinpoor, A. R., Bergen, N. & Kunst, A. (2012). Socioeconomic inequalities in risk factors for non-communicable diseases in low-income and middle-income countries: results from the World Health Survey. *BMC Publ Health; 12*:912.

Igba, C.E. (2008). *Food security status of low-income households in Ebonyi State*. PhD Thesis, Ebonyi state University Abakaliki pp. 60.

Igba, C.E. (2013). *Economic and health benefits of fruits and vegetable consumption within families. Workshop on vegetable/crop production and rural dwellers empowerment*. A case study of Ebonyi State, Nigeria, in the Local Government Area and Development Centres of Ebonyi State. Proceedings of the workshop, 5th—7th March 2013, 18–21. (NIGERIA)

Kever R. T., Martins, SD & Lola N. (2015). Knowledge and attitude of pregnant women towards dietary practices in Yerwa Clinic, Maiduguri Metropolitan Council; Borno State. *J Res erch Nurs Midwif*; 4:12–9.

Lindsay, K.L., Gibney E. R. & McAuliffe F.M. (2012). Maternal nutrition among women from Sub-Saharan Africa, with a focus on Nigeria, and potential implications for pregnancy outcomes among immigrant populations in developed countries. *J Hum Nutr Diet, 25*;534–46.

Mitra, M., Wan, A., Manan, W., Affizal, A. & Mohd, S. (2012). Dietary knowledge and behaviours in a sample of Malay pregnant women; UMT 11th *International Annual Symposium on Sustainability Science and Management* 09th – 11th July 2012, Terengganu, Malaysia, 2012.

Murrcy & M. C. Kinney. (2014). *Study guide for foundation of material new born and women's health nursing*, 6th edition. http. //digital – collect. leb.buv.ac.th./dcm,s/files/55910282/chapter 2pdg.

National Population Commission (NPC) & ICF International (2016). *Nigeria Demographic and Health Survey 2013*. Available from: https://dhsprogram.com/pubs/pdf/FR29 3/FR293.pdf/ Accessed 20th July.

Nigeria Demographic and Health Survey (2013). *National Population Commission*. Abuja, Nigeria.

Sakhile, K. M. & Shu-Jan, J. L. (2014). Nutritional Knowledge, Attitude, and Practices among Pregnant and Lactating Women Living with HIV in the Manzini Region of Swaziland. *J Health Popul Nutr*: 32:261–9.

Senbanjo, I. O., Olayiwola, I.O., Afolabi, W. A., & Senbanjo O. C. (2013). Maternal and child under-nutrition in rural and urban communities of Lagos State, Nigeria: the relationship and risk factors. *BMC Res Notes; 6*:286.

Shekar, M., Heaver, R. & Lee, Y. K. (2006). *Repositioning nutrition as central to development: A strategy for large scale action*. World Bank Publications.

Subarnalata, S. & Panda B. (2006). A study of nutritional status of pregnant women of some villages in Balasore district, Orissa. *Journal of Human Ecology 20*(3):227–232.

UNICEF (2009). *Maternal and newborn health in Nigeria: developing strategies to accelerate the programme*. The state of the world's children 19–22

World Bank (2006). *Repositioning nutrition as central to development: A strategy for large scale action*. The International Bank for Reconstruction and Development, World Bank, Washington DC, USA

World Health Organization (2021). *Nutrition*. Available from: http://www.who.int/features/factfiles/nutritio n/facts/en/

INTERNATIONAL FEDERATION FOR HOME ECONOMICS

PEER-REVIEWED CONGRESS PAPER

Assessment of protection attributes of sustainable functional apparel prototype developed using CAD for female fishmongers in Aba, Nigeria

Priscilla Ezema, Ngozi Nwonye, & Dorothy Thompson
Nigeria

Abstract

The study focused on the Assessment of the Protection Attributes of Functional Apparel Prototype developed using CAD for female fishmongers in Aba, Nigeria. The purpose of the study was to determine the acceptability of the prototype by different size categories. Specifically, the study determined the mean ratings of fishmongers on the protection attributes of the developed prototype; determine the mean ratings of judges on the protection attributes of the developed prototype; and to compare the mean ratings of female fishmongers and judges on the developed prototype. Three research questions and two hypotheses guided the study. The study area was Aba, Nigeria. The Research design employed was descriptive survey. The population was 438 fishmongers and 109 respondents that served as judges. A multi-stage technique was adopted at different stages of data collection. The sample size was 209 for fishmongers, and 85 for judges. Two sets of instruments were used for data collection. Descriptive statistics like frequency, percentages, mean and standard deviation were used to analyse research questions while t-test was used to test the hypotheses at .05 level of significance. The findings revealed that the female fishmongers and judges scored the functional apparel very good with mean above 3.00 on all the protection attributes. There was no significant difference in the mean ratings of fishmongers and judges on small, medium and large sized based users on protection attributes of the functional apparel prototype. It was concluded that the developed apparel prototype protected the regular apparel of female fishmongers from ice and blood spill from the fish. It was therefore recommended among others that CAD should be used by lecturers and apparel designers in developing work wear.

KEYWORDS: PROTECTION, ATTRIBUTES, SUSTAINABLE, FUNCTIONAL, APPAREL, PROTOTYPE, CAD, FISHMONGERS.

Introduction

The apparel industry is developing rapidly and attracts great opportunities and challenges to textiles and clothing enterprises. Over the last 20 years, most industries have seen a transition from traditional product development that was local, face to face and sequential to one that is more global, more virtual and more concurrent (Eppinger and Chitkara, 2006). Therefore, fashion industries are faced with the challenge of product development using modern equipment and at the same time making it a sustainable fashion.

Ezema, P., Nwonye, N., & Thompson, D. (2022). Assessment of protection attributes of sustainable functional apparel prototype developed using CAD for female fishmongers in Aba, Nigeria. *International Journal of Home Economics, 15*(2), 67-79.

Priscilla Ezema ✉ mikecila@yahoo.com

Sustainable fashion refers to clothing that is designed, manufactured, distributed and used in ways that are environmentally friendly (Dreamer, 2019). This means that fashion has to embrace modern industrial techniques and focus toward visualizing people, individual people, interacting with their garments in way that are healthy and meaningful. Sustainable fashion should address the emotional, expressive, and physical qualities that garments can provide for consumers, meeting needs and desires, the resulting satisfaction leads to greater use and a longer functioning cycle (Hethorn, 2009). It involves diminishing environmental well-being through waste and pollution and improve it through lowering carbon emissions and improving bio-friendly practices in garment and fashion we create. Riyajain, (2021) sees sustainable fashion as a fashion concept that is friendly for the environment and society at large. The concept also includes the complete process of bringing that particular item to its rightful owner in a manner that does not harm the environment or people making them and everything that is a part of the chain in apparel production.

Apparel production that used to be a manual process from a designer producing a concept sketch to drafting the patterns by hand and then to final construction of a sample garment has now graduated to a digital process. Digital process involves the use of extensive Computer Aided Design (CAD) tools to create a standard set of patterns for different apparel design. In line with the above statement, Fixson and Marion, (2012) noted that modern day new product development in terms of efficiency, allow designs to be repeated and transmitted quickly, thereby saving time and cost before product launch, which is essential in the apparel industry. Therefore, information and digitalization are inevitable for their development through the use of Computer Aided Design (CAD).

Computer Aided Design is the use of computer technology for the process of design and design documentation (Palak, 2014). It also involves the use of specialized programs to create designs and design components on the computer. Computer Aided Design (CAD) is also known as Computer Aided Drafting which describes the process of drafting with a computer. Computer Aided Design (CAD) system consists of information technology hardware, a specialized software depending on the particular area of application and peripherals which in certain applications are quite specialized (Bilalis, 2000). The core CAD system is the software which makes use of graphics for product representation, database for storing the product models and deriving the peripherals for product presentation. It also provides the users with input tools for the purpose of streamlining design, drafting, documentation and manufacturing processes (Yaw, 2013). Its users do not change the nature of the design process but as the name implies, it aids the product designer. The designer is the main actor in the implementation phase. The first applications of Computer Aided Design (CAD) were 2D drafting applications, while now most of them are 3D solid and parametric representation of the real parts.

There are different types of Fashion designing software like the Bernina My Label 3D fashion pattern software, Edraw-Fashion Design software, Digital Fashion Pro, Cameo V5 Apparel Software, Etelestia Pattern making, Fashion designing and sewing software, Designer Pro Apparel Edition, Fashion Start App, Fashion toolbox, Fashionable studies for Mac, Dress assistant and Optitex (Esper, 2012). According to Abecasis-Moedas (2006) in Santos (2014), Computer Aided Design (CAD) allows the designer to create a design on the screen, store, retrieve and adapt images, patterns and colours as desired and the completed design is shown on the screen. It also allows for design models to be worked on and updated to current fashion.

Recently, Computer Aided Design (CAD) software has improved to the extent that there are tools for simulating the construction of a virtual prototype, implementing the 2D pattern data and cloth animation algorithms to construct the sample garment on a virtual 3D model. This advanced to Computer Aided Design (CAD) technology that has more visual apparel design and analysis, from concept to prototype.

Prototype in apparel is the first design of an apparel product from which other forms can be copied. Glock and Kunz, (2000) asserts that it is cut and sewn from the first pattern obtained for the product to assess the styling and fit. Engineering a prototype involves the creation of physical products to respond to customer needs (Illrich and Eppinger, 2004). It embraces sequential activities and tasks which translate customer needs into product design. Apparel design has progressed to the stage of offering 3D virtual simulations. This simulation typically requires the designer to specify 2D pattern piece locations in relation to the body like the front, back, right and left and at the same time identify and match seams that are sewn together during construction. The 2D patterns are then placed on a 3D model and a simulation of the assembly and drape results in a virtual prototype.

Virtual prototyping is using virtual reality to create product prototypes and their properties. It is carried out with a computer. Virtual Prototyping is a technique in the process of product development. It contains Computer-Aided Design (CAD) and Computer-Aided Engineering (CAE) software to validate a design before committing to making a physical prototype (Puri, 2013). It is carried out by creating (usually 3D) computer generated geometrical shapes and either combining them into an assembly or testing different automated motions. Virtual prototyping permit designers to gauge and enhance product performance virtually. With simulations associated to requirements, designers can ensure that their end product meets defined requirements. 3D can reduce the prototyping cost as designers can now decide whether or not to take a product to the market. It helps to reduce the cost of rejecting a style in terms of material, labour and time (Puri, 2013). The virtual prototype can be closely examined with many variations in perspective and rotation of the 3D model allowed (Stewart, 2008). Virtual prototyping has the ability to enhance sample approval process considerably with initial pattern construction and fit problems identified and corrected on the digital flat pattern before any fabric is cut. Azar, 2012 spelt out some examples of virtual tools such as Bernina My Label 3D fashion pattern software, Modaris 3D Fit by Lectra, Vidya by Assyst, V-stitcher by Browzwear, PDS version 10, Tuka 3D by Tukatech, 3D CAD system staprim from Russia and Assol 3D CAD being equipped with all these functions can be employed in the design of functional apparel to meet the needs of the persons in diversified occupations.

Functional Apparel is defined as user-requirement specific and designed or engineered to meet the performance requirement of the user under extreme conditions (Guptaa, 2011). The apparel serves as a protection for the wearer from hazardous environments. Challenges associated with handling of tools, skin irritation, water/ice splash on body/cloths; blood spills on body and clothes demand protection and safety functions in apparel design. The protection is achieved by blocking the penetration and permeation of the substance through the fabrics in clothing (ATIRA,2022).

In addition to the functionality aspect of apparel, all functional apparel must fulfil certain requirements which are common to all users. Work profile of the user must serves as protection for the wearer from environmental conditions as well as work or task-related conditions that expose the wearer to certain risk in operation (Barker, 2007). Fishmongers require better work clothing against environmental hazards at the same time the clothing has to meet the requirement of functional clothing which include mobility, fit, comfort, protection/safety, utilitarian, aesthetic and expressive attributes.

Fishmongers are people that prepare and sell fish products, iced or un-iced to members of the public. They have a deep understanding of the fish species, preparation methods and detailed product knowledge (Crown, 2016). In the context of this study, fishmongers are people that sell iced or frozen fish only. Studies carried out by Adebayo and Pitman (2017) revealed that the major marketers of frozen fish are women, therefore attention should be given to their role while discharging their duties in diversified mediums. Women have been reported to play a vital role in processing and marketing fish (Olufayo, 2012 in Cloffe and Akinrotimi, 2015). These women are trained in selecting and purchasing, handling, gutting, cutting, filleting, displaying, merchandizing and selling their product. Some operate in shops, markets and streets.

This group of people handle cold fish with their bare hands which may affect their cold tolerance based on factors like body-size, body-shape, subcutaneous fat, physical fitness, age, gender, smoking habits, previous cold injury, drugs and alcohol (Chernyshov, 2000). The nature of their occupation attracts constant touch with water or ice. In the process of discharging their duties, fish blood and ice splash on their garments which may affect their health in one way or another. Most importantly, the appropriate way to take protective measures against cold and liquid spills exposure, outdoor as well as indoor is by choosing the appropriate clothing (Holmer, 2005).

It has been observed that female fish mongers in Abia State market do not wear appropriate protective clothing when discharging their duties. This has led to many of them smelling as a result of fish blood spills on their garments. It has also been observed that what they wear to market do not grant them adequate mobility needed for the occupation thereby leading to inefficiency in task delivery. In addition, do not protect them from the effect of the water/ blood spillage while discharging their duties.

Inappropriate a reduction in dexterity to fishmongers (FAO, 2017). While ensuring good thermal protection, clothing should not be too thick, too stiff or too heavy. Clothing should also not be too tight in order not to hinder internal air circulation or prevent blood circulation. Clothing for such occupation requires water repellent apparel that prevents the passage of liquid through the clothing layer. Careful development of protective apparel guarantees good comfort and performance during cold exposure and increases the physical work load energy expenditure (Kirsi et al., 2010).

Furthermore, research works like the development of functional apparel for cosmetologists in Lagos, Nigeria (Thompson, 2010) and the development of functional laboratory coat for clothing and textile students in tertiary institutions in the south-east zone of Nigeria (Ugwu, 2010) have been carried out in Nigeria on the development of prototype for functional apparel using diversified process model but employing other techniques of pattern drafting without giving required attention to Computer Aided Design (CAD) techniques as the world is embracing innovative technologies in solving apparel design issues. Based on this gap, this study was tailored towards closing this gap by using Computer Aided Design (CAD) software to develop a prototype for female fishmongers in Abia State. After the production of the work apparel, the fit was evaluated by experts such as Clothing and Textiles lecturers, functional apparel producers and the users.

Objectives of the Study

The purpose of the study was to determine the acceptability of the prototype by different size categories. Specifically, the study:

1. determined the mean ratings of fishmongers on the protection attributes of the developed prototype.
2. determined the mean ratings of judges on the protection attributes of the developed prototype.
3. compared the mean ratings of female fishmongers and judges on the developed prototype.

Research Questions

1. What are the mean ratings of fishmongers on the protection attributes of the developed prototype?
2. What are the mean ratings of judges on the protection attributes of the developed prototype?
3. What are the difference in the mean ratings of female fishmongers and judges on the developed prototype?

Hypotheses

The following hypotheses were tested at the 0.05 level of significance:

HO_1: There is no significant difference in the mean ratings of female fishmongers on small, medium and large size-based users on protective attribute required of functional apparel.

HO_2: There is no significant difference in the mean ratings of judges on small, medium and large size-based users on protective attribute required of functional apparel.

HO_3: There is no significant difference in the mean ratings of female fishmongers and judges on small, medium and large size-based users on protective attribute required of functional apparel.

Methodology

Research Design

This work was a research and development study and employed the research and development design by Gall, Gall and Borg (2010). In addition to the design process, descriptive survey design was adopted for the study as a technique for obtaining data from respondents through the use of questionnaire. Osuala (2005) opined that descriptive survey designs is the design appropriate for collection of data based on the opinion of the respondents.

Area of the study

The study was carried out in Abia State in South-East Nigeria. Abia State is selected for the study because the senatorial districts are business oriented. Also, markets where women sell iced fish are located in the different Local Government Areas. The major city in Abia State is Aba where fabrics and tailoring material business flourish and this aided the researcher in sourcing materials for the development of functional apparel for fishmongers. Aba is also noted for its large garment production business.

Population for the Study

The population was 438 fishmongers and 109 respondents that served as judges. The judges were seven respondents from fishmongers excos, 24 Home Economics lecturers and 68 functional apparel producers.

Sample and Sampling Technique

The sample size for female fishmongers was 209 and this group was used to obtain mean body measurements for the development of the pattern in phase 1 of the study. The sample size of the judges that evaluated the fit of the developed prototype was eight five (85). The ratio of eight five was statistically determined in line with the sample size of each strata using Bowley's proportionate allocation formula in Pandey and Verma (2008).

A multi-stage technique was adopted at different stages of sample selection in order to meet the different research interests and needs of the female fishmonger population for the study.

The sample size was determined statistically using Taro Yamane (1967) in Rafael (2014) formula. Uzoagulu (2011) testified that sample computed statistically is more reliable and tolerable than determining the sample by mere approximation.

Instruments for Data Collection

Two different instruments were used for data collection in the study.

a. Functional Apparel Design Assessment Instrument for Fishmonger (FADAF)
b. Functional Apparel Design Assessment Instrument for Judges (FADAJ)

This section of the instruments was presented on a 5-point semantic differential scale where "5" indicates excellent, "4" indicates very good, "3" good, "2" indicates bad, and "1" very bad. Each of the evaluation was carried out at a single session to minimize differences in fit due to anthropometric changes and other factors in the study participants. The FADAF instrument helped to achieve objective one as it created enabling situations for the female fishmongers to express how the work apparel fits them on the attribute of protection.

Functional Apparel Design Assessment Instrument for Judges (FADAJ)

The instrument gave the researcher information on how the Home Economics Lecturers, Functional apparel producer and female fishmonger exco officials evaluated the fit of the work apparel on protection attribute.

Validation of the Instruments

The instrument of the study was subjected to face validation by five experts, three from Home Economics Department, University of Uyo, two from Department of Home Science, Michael Okpara University of Agriculture, Umudike. They were given the purpose of the study, the research questions and the hypotheses. These experts were asked to review the items in the instrument for clarity, relevance, appropriateness of language and expressions including appropriateness of the instructions to the respondents. Modifications were made to accommodate the suggestions made by the experts. These instruments are standardized instruments adapted from Fowler (2003) and Barker (2007).

Reliability of the Evaluative Instruments (FADAF/FADAJ/)

An instrument is reliable to the extent that it measures consistently (Siegle, 2013). The Evaluative Instruments were pilot-tested on six models and 20 judges before conducting the main study, and reliability values were obtained for the two groups of evaluators. Three female fishmongers were chosen specifically as models from a group of fishmongers who fit into the prototype functional apparel sizes of small, medium and large designed for the preliminary testing procedures. The models wore the prototype apparel, performed a movement test and completed a wearer acceptability questionnaire. The instrument was divided into different sections comprising demographics and safety/protection attribute. These models rated the functional prototype apparel after wearing the apparel to carry out certain movements. The judges in turn scored the protection attributes and general performance of the functional apparel on the three size-based models, small, medium and large. Data obtained were used to determine the internal consistency of the instruments. The reliability was established using Cronbach coefficient alpha to determine the reliability coefficient. The reliability coefficients were .892 and .834. For research purpose a minimum reliability of .70 is required for the instrument (Siegle, 2013). Based on these criteria the instrument is reliable as the attribute protection has coefficient values above .70.

Development Procedures

The produces for the development of the female fishmonger's apparel were incorporated in three phases. Procedures for phase 1 involved needs assessment of female fishmongers;

determination of design criteria based on specification; generation of creative ideas for the work apparel and selection of final design idea. For phase III, procedures involved idea sketch, development of specification sheet, developing the prototype patterns using Bernina My Label Software by adjusting the measurement of the three-quarter coat in the software drawer to match the mean body measurements of female fishmongers and construction of the prototype apparel in three size categories of small, medium and large.

Fig 1: Bernina My Label Software

Fig 2: Three Quarter Coat in Bernina Drawer

Fig 3: Female Fishmonger Wearing the Developed Protective Apparel on Business

Wear test which involved auxiliary field test of prototype revision of the prototype to correct deficiencies observed and construction of new sets of apparel procedures; for phase III of the study involved evaluation of the protective attribute by users' models and three groups of judges using FADAF and FADAJ instruments. The research assistants, female fishmongers, model and judges were given instructions prior to the collection of data for the study.

The rating of the functional apparel on each of the models was done by the judges. A set of copies of the FADAJ instrument was given to each of the judges for scoring the protective quality of the apparel on the models representing, small, medium and large size category. The copies of the questionnaire were returned at the closure of the exercise. The responses from the judges for each female fishmonger were gathered and the average score was used for the analysis.

Each of the nine models was given the FADAF instruments to go through before completing it. The movement assessment interview was conducted by the researcher for the models. After each movement, subjects rated themselves on a 5-point Likert scale to determine how easy or difficult it is to perform the movements wearing the functional apparel product. After the interview session, subjects were allowed adequate time to rate the functional apparel product on protection attribute in a laboratory setting. The subjects were given the apparel to perform task in a field setting and to rate the prototype apparel function and performance on the parameters outlined for evaluation.

Method of Data Analysis

Descriptive statistics of frequencies, mean and standard deviation were used to answer the research questions. t-test was used to test hypothesis three while analysis of variance (ANOVA) was used to test hypotheses one and two at 0.05 level of significance.

The mean values of both female fishmongers and judges were determined on the 5-point Likert and semantic differential scales. A mean value of 2.50 and above was considered satisfactory. Mean scores on any variables <2.50; was considered unsatisfactory Scoring range: 4.50–5.00 = Excellent, 4.49–3.50 = Very good, 3.49–2.50 = Good, Bad 2.49–1.50 = Very bad, 1.49–.50 = Very bad.

Results

Table 1 reveals that seven adjective sets were used to measure protection variable of the functional apparel on a 5-point semantic differential scale where "1" was associated with a very bad attribute and "5" was associated with an excellent attribute. The bipolar adjective sets included "easy to move in/hard to move in", "portable/not portable", "safe/unsafe", "provide protection/lack of protection", "lightweight/heavyweight", "sturdy/not sturdy", "functional/non-functional". Bad scores were tallied from ratings of 1.0 to 2.49 while good scores were tallied from ratings 2 .50 to 5.0. Table 1 further displays the mean and standard deviations on each adjective set. All of the adjective sets were rated good showing that the design met the parameter of protection. Items one and two displayed the means above 4.00 while means of other items fall within acceptable range above 3.00. The mean cluster was 3.93 which reveal that the functional apparel meets the parameter of protection.

Table 1: Mean Rating of female fishmongers on protection attribute of functional apparel *n* = 200

S/N	Items	X̄	*SD*	Remark
1	Easy to move in/hard to move in	4.33	.590	Very good
2	Portable/ not portable	4.26	.724	Very good
3	Safe/not safe	3.72	.634	Very good
4	Provide protection/lack of protection	3.85	.602	Very good
5	Lightweight/ heavy weight	3.67	.701	Very good
6	Sturdy/ not study	4.00	.763	Very good
7	Functional/ not functional	3.66	.734	Very good
	Cluster mean	**3.93**	**.68**	**Very good**

Table 2 shows the mean ratings of judges on the protection/safety function of the prototype apparel. The Table further reveals that protection/safety variables were measured by judges by rating seven bipolar adjective sets on a 5-point semantic differential scale. From the mean and standard deviation values further presented in Table 2, it shows that all of the adjective sets were scored very good by the judges. Three items were excellently scored and the scores ranges from 4.55 to 4.58, 5 items were scored very good with values ranging from 4.17–4.36. The high positive scores recorded by judges indicate that the functional apparel product adequately satisfied the protection/safety function of the functional apparel.

Table 2: Mean rating of judges on protection attributes of functional apparel *n* = 85

S/N	Items	X̄	*SD*	Remark
1	Easy to move in/Hard Move to in	4.58	.740	Excellent
2	Portable/Not Portable	4.56	.661	Excellent
3	Safe/Unsafe	4.34	.665	Very good
4	Provide protection/Lack of Protection	4.36	.458	Very good
5	Lightweight/Heavyweight	4.55	.591	Excellent
6	Sturdy/Not Sturdy	4.26	.863	Excellent
7	Functional/Non-functional	4.17	.812	Excellent
	Cluster mean	4.00	.68	Very good

Data in Table 3 shows a higher positive rating for judges than female fishmongers on the variables on safety/protection. All of the variables displayed have values greater than 4.00 for judges and greater than 3.50 for female fishmongers. All the two groups of evaluators indicated that the functional apparel was “easy to move in”, “provide protection” and “provides adequate functionality”.

Table 3: Differences in the mean rating of fishmongers and judge's protection of functional apparel n_1 = 9, n_2 = 85

S/N	Items	X_1	SD	X_2	SD	MD (x_1 - x_2)	Remark
1	Easy to move in	4.33	.590	4.58	.740	-0.25	
2	Portable	4.26	.724	4.56	.661	-0.3	
3	Safe	3.72	.634	4.34	.665	-0.62	
4	Provide protection	3.85	.602	4.36	.458	-0.51	
5	Lightweight	3.67	.701	4.55	.591	-0.88	
6	Sturdy	4.00	.763	4.26	.863	-0.26	
7	Functional	3.66	.734	4.17	.812	-0.51	
	Cluster Mean Div.					-0.48	MD*

Note: MD = Minor difference

The result represented in Table 4 shows the summary of one-way analyses of the difference in the mean ratings of fishmongers on small, medium and large size-based users on protection/safety required of functional apparel. The result shows in all the items there were no significant difference. On the whole, since the P-significant value of .501 is greater than .05, the null hypothesis which stated that there is no significant difference in the mean ratings of fishmongers on small, medium and large size-based users on parameter required of functional apparel is therefore accepted.

Table 4: One-way analysis of variance of difference in the mean ratings of fishmongers on small, medium and large size-based users on protection required of functional apparel

S/N	Item	Source of Variation	Sum of Squares	df	Mean Square	F	P-Sig.	Decision
1	Easy to move in	Between Groups	.603	2	.302	.101	.961	NS
		Within Groups	6.226	6	1.038			
		Total		8				
2	Portable	Between Groups	.770	2	.385	.010	.239	NS
		Within Groups	5.226	6	.871			
		Total	6.829	8				
3	Safe	Between Groups	1.001	2	.501	.102	.211	NS
		Within Groups	4.221	6	.704			
		Total	5.222	8				
4	Provide protection	Between Groups	1.000	2	.500	.620	.102	NS
		Within Groups	8.001	6	1.336			
		Total	9.001	8				
5	Lightweight	Between Groups	.906	2	.457	.067	.982	NS
		Within Groups	7.231	6	1.205			
		Total	8.137	8				
6	Sturdy	Between Groups	1.016	2	.508	.010	.349	NS
		Within Groups	5.623	6	.937			
		Total		8				
7	Functional	Between Groups	1.018	2	.509	.010	.660	NS
		Within Groups	6.921	6	1.154			
		Total	7.047	8				
	Cluster value					**.131**	**.501**	**NS**

The result represented in Table 5 shows the summary of one-way analyses of the difference in the mean ratings of judges on small, medium and large size-based users on protection/safety required of functional apparel. The result shows that there were no significant in all the variables as the P values were greater than .05. On the whole, since the P-significant value of .297 is greater than .05 alpha, the null hypothesis which stated that there is no significant difference in the mean ratings of judges on small, medium and large size-based users on parameter required of functional apparel is therefore accepted.

Table 5: One-way analysis of variance of difference in the mean ratings of judges on small, medium and large size-based users on protection/Safety required of functional apparel

S/N	Item	Source of Variation	Sum of Squares	df	Mean Square	F	P-Sig.	Decision
1	Easy to move in	Between Groups	2.341	2	1.171	.341	.606	NS
		Within Groups	91.343	82	1.114			
		Total	93.684	84				
2	Portable	Between Groups	1.422	2	.711	.424	.303	NS
		Within Groups	96.261	82	1.174			
		Total	97.683	84				
3	Safe	Between Groups	.942	2	.471	.462	.533	NS
		Within Groups	89.211	82	1.088			
		Total	90.152	84				
4	Provide protection	Between Groups	.861	2	.431	.068	.224	NS
		Within Groups	85.781	82	1.046			
		Total	86.642	84				
5	Lightweight	Between Groups	.637	2	.319	.090	.169	NS
		Within Groups	86.429	82	1.054			
		Total	87.066	84				
6	Sturdy	Between Groups	.606	2	.303	.012	.144	NS
		Within Groups	87.602	82				
		Total	88.208	84				
7	Functional	Between Groups	1.001	2	.501	.301	.703	NS
		Within Groups	86.711	82	1.057			
		Total	87.712	84				
	Cluster value					**.242**	**.297**	**NS**

Table 6: t-test analysis of the difference between the mean responses of fishmongers and judges on how apparel fits when protection/safety Fishmongers (n_1 = 9), Judges (n_2 = 85)

S/N	Items	Fishmongers (1)		Judges (2)		t-cal	*p* -sig.	Decision
		Mean	*SD*	Mean	*SD*			
1	Easy to move in	4.33	.590	4.58	.740	.581	.784	NS
2	Portable	4.26	.724	4.56	.661	.222	.742	NS
3	Safe	3.72	.634	4.34	.665	.555	.805	NS
4	Provide protection	3.85	.602	4.36	.458	.634	.921	NS
5	Lightweight	3.67	.701	4.55	.591	.284	.811	NS
6	Sturdy	4.00	.763	4.26	.863	.612	.926	NS
7	Functional	3.66	.734	4.17	.812	.457	.925	NS
	Mean value	**3.93**	**.68**	**4.00**	**.68**	**.435**	**.748**	**NS**

This hypothesis sought to compare the mean ratings of the two groups of respondents on the protection components of the functional apparel. t-tests were run to compare the total protection ratings for functional apparel by female fishmongers and judges. In all the seven items on the protection rating scale, there were no significant differences found. This implies that the P values of the seven variables were greater than .05. The null hypothesis was therefore accepted in all the items. Therefore, the null hypothesis of there is no significant difference between the mean ratings of female fishmongers and judges on small, medium and large size-based users on parameters required of functional apparel is retained.

Discussion of Findings

The protection variables were positively rated with scores ranging from 3.66–4.33 for the three sets of female fishmongers and 4.17–4.58 for judges. In all the seven variables tested, there were no significant differences found all the variables ($P>.05$). Furthermore, there was no significant difference between the mean ratings of female fishmongers and judges. This shows that the design was successful. It further denotes that the functional apparel design was perceived to be protective, functional and was well constructed. This finding agrees with Fowler's (2003) findings with police officers' ballistic clothing which was perceived to be functionally protective. Since the variable "protection" received the lowest positive score indicating that the mean is not on the negative side of the scale. The findings are also in line with assertion of Kirsi et al., (2010) on the effect of cold protective clothing on and perception of performance that careful development of protective apparel guarantees good comfort and performance during cold exposure and increases the physical work load energy expenditure. The protective apparel developed for the fishmongers was able to prevent liquid, ice and fish blood from penetrating into the fibre of the work wear. This goes to support the findings Jeol (2007) in Tanko and Anigbogu, (2012) that protective devices are designed to interpose an effective barrier between object and environment. Tanko and Anigbogu (2012) supported this fact by stating that protective apparel should ensure adequate protection from the hazards to which the workers will be exposed.

Conclusion

It is therefore concluded that Computer Aided Design can be employed in developing functional apparel for female fishmongers. Irrespective of the design of the work wear it must meet the functional requirement of the job and must be able to protect the user from hazardous environment. The three-quarter coat developed for female fishmongers was able to protect their inner garment from the spill of fish water and blood as the fabric repels liquid.

It is also paramount that the material selection has to be breathable, permeable and at same time possess the characteristics of repelling liquid. The fabric chosen for the fishmongers work wear met these characteristics as the apparel was able to protect their inner garment from smelling. Therefore, in using any software in developing functional apparel, it is very paramount to look for one that meets the design criteria in its collection. In the case of this study Bernina My Label was chosen because the design criteria accepted by fishmongers was found in their drawer collections.

Recommendations

1. Since many of the subjects, both from the female fishmonger and judge populations, expressed satisfaction with the functional apparel attributes, there is need to make available the findings of the study to Clothing and Textiles lecturers and students in high institutions and fishmonger's organisations in order to create awareness about current research in the functional apparel workforce.
2. Home Economics lecturers and students should utilize the software to approach design problems in Clothing, Textiles, and Interior Design/Decoration aspects of the Home Economics programme.
3. Knowledge and skills are vital to resolving issues in functional apparel research, therefore practical illustrations and awareness must be created for the understanding of apparel design concepts in developing occupational clothing for diverse groups.

References

Abecassis-Moedas, C. (2006). Integrating design and retail in the clothing value chain –an empirical study of the organization design. *International journal of operations and production management, vol. 26* No. 4, pp. 412–428

ATIRA, (2022). *Textiles/ Applications/ Protective Clothing Compilation*. Retrieved from http://atira.in protective textiles-g....

Barker, J. F. (2007). *Comfort perceptions of police officers towards ballistic vest*. Unpublished doctoral thesis. Florida State University Tallahassee, FL

Bilalis, N. (2000). *Computer aided design (CAD)*. Retrieved from www.adi.pt>docs>innoregio-cad-en on 20/11/16.

Tanko, B. L. & Anigbogu,N.A., (2012). *The use of personal protective equipment (PPE) on Construction site in Nigeria*. Weber 2. Retrieved from https://www.researchgate.net>2339.

Eppinger, S. D. & Chikara, A. R. (2006). *The new practice of global product management review, 47*(4): 22-30.

Esper, J. (2012). *Best software for pattern making*. Retrieved from http://sewingandstyle.blogsport.com.ng/2012/04/best-software for-pattern-making.html on 20/11/16

Cheriuiyot, M. (2013). *Assessment of size and fit of ready-made forms/clothing among male consumers*. This publish thesis, Kenyatta University. Retrieved from or library ku.ac.ke>bitstream>handler on 20/01/17.

Cliffe, P. T. & Akinfolini, O. A. (2015). *Role of women in fishery activities in some coasted communities of River State Nigeria*. Retrieved from http://scialert.net/fulltext/?doi=ijar. 2015.24.32 & org=10

Crown, (2016). *Standard for fishmongers*. Seafoodacademy.org>pdfs>fishmongers

FAO, (2017). *Freezing refrigerator storage in fisheries-11 special operation consideration*. Retrieved from http://www.fao.org/home/en on 20/02/17.

Fixson, S. K. and Marion, T. (2012). Back – loading: A potential side effect of employing digital design Tools in new product development. *Journal of product innovation management, 14*: 429-458.

Gall, M.D., Gall, J.P., & Borg, W.R. (2007). *Educational research. An introduction*. 8th Edition, Pearson Education Inc U.S.A.

Glock, R.E. and Kimz, G.I. (2000). *Creation and technical design. In apparel manufacturing: sewn product analysis*. Upper Saddle River, New Jersey: Pretence Hall.

Gupta, D. (2011). Design and engineering of functional clothing. *Indian journal of fibre & Textiles research, 36,* 327-335. Retrieved from https://www.researchgate.net/publication/286223344-functional-clothing-definition and classification on 15/11/16

Hetorn, J. (2009) *Sustainable Fashion why Now?* New York. Fairchild Books, Inc.

Holmer L., (2005). *Protective clothing for cold workplace environments*. Retrieved from https://www.asasupplies.com>insulated on 22/02/17.

Palak, G. (2014). *Importance of computer in fashion design*. Retrieved from www.edu>comp101>project on 20/02/17.

Puri, A. (2013). Efficacy of pattern making software in product development. *International journal of advanced quality management, (1)* 1:21 – 39.

Kirsi, J.,Anita, V., Jouko, R., & Hannu, A. (2010). The effect of cold protective clothing on and perception of performance. *International of Journal of Occupational Safety and Ergonomics. 16*(2): 185-197.

Santos, S. R. D. (2014). *Impact of 3D Design on new product development process in the clothing industry*. Dissertation submitted in partial fulfilment of for the degree of Ms.C in Business Administration

Thompson, D. (2010). *Development of functional apparel for cosmetologists in Lagos, Nigeria*. Unpublished Doctoral Thesis. University of Nigeria, Nsukka.

Ugwu, E.N. (2010). *Development of functional laboratory coat for clothing and textile students in tertiary institutions in South East zone of Nigeria*. Unpublished thesis, University of Nigeria, Nsukka.

PEER-REVIEWED CONGRESS PAPER

Behavioral determinants associated with customers' choice of apparel in Dar es Salaam, Tanzania

Gudila Kereth [1, 2], E. Bosibori Oigo [2], J. Kaindi Isika [2], & Michael H. Kimaro [3, 4]

[1] *Sokoine University of Agriculture, Tanzania*
[2] *Kenyatta University, Kenya*
[3] *GELIFES Lab, Netherlands*
[4] *Tanzania Research and Conservation Organization, Tanzania*

Abstract

Understanding customer decisions on apparel choice together with the underlying behavioral determinants (cultural, social, personal and psychological) is essential in apparel business industry. In Tanzania, studies on behavioral determinants of customers' choice of imported and locally made apparel are scarce. The purpose of this study was to assess the behavioral determinants that influence customers' choice of apparel. A cross-sectional survey design was adopted in this study. A systematic randomly sampling technique was used to collect information from 420 customers while purposively sampling technique was applied to select second-hand apparel markets (n = 3); shopping malls (n = 10), boutiques and apparel shops (n = 14) and locally made apparel shops (n = 16) in Dar es Salaam. Generalized Linear Model with binomial and Poisson error distributions were used for the statistical analyses, and p-value of 0.05 or lower was considered significant. Quantity, expenditure of apparel, gender, income, and type of outlets were found to be significant determinants of apparel choice. Choice probability of apparel increased to locally made apparel with an increased in expenditure and being female, while the probability of apparel choice decreased from locally made apparel to imported apparel with an increased in quantity, income, and shopping outlets. Social, personal and psychological determinants as well as cultural determinants were significantly related to the quantity and frequency of purchasing apparel respectively on apparel choice. In conclusion, the quantity and expenditure of apparel, gender, income, types of outlets drive customers on the apparel choice. Social, personal, psychological and cultural determinants were associated to the quantity and frequency of purchasing apparel in that order that retailers need to take them into account when developing business strategies. This study provided additional knowledge on the existing customer's apparel choice in Tanzania. Understanding customer behavior and the types of outlets required in the area may benefit apparel marketers.

KEYWORDS: BEHAVIORAL DETERMINANTS, APPAREL CHOICES, APPAREL QUANTITY, COST, FREQUENCY

Introduction

In developed and emerging countries, the trend to purchase apparel are growing significantly and dominate the world economy (ITC, 2011; Chakrapani, 2015; Rahman et al., 2018). In developed countries, a remarkable increase of apparel in the world market was observed. The USA accounted for 58.2% of the entire market from retailing, while Europe accounted for 80%

Kereth, G., Oigo, E. B., Isika, J. K., & Kimaro, M. H. (2022). Behavioral determinants associated with customers' choice of apparel in Dar es Salaam, Tanzania. *International Journal of Home Economics, 15*(2), 80-90.

Gudila Kereth ✉ gkereth@yahoo.co.uk

of store-based, and 20% of online based apparel (FBIC, 2015; Yang et al., 2017). In developing countries, a steady economic growth (of about 7%) was recorded in 2011 (Sampath, 2014). Ethiopia as emerging country, recorded 9.7% on economic development while the apparel sector contributed 51% (van der Pols, 2015; Shiferaw, 2017). In East African countries including Tanzania, the growth of economic development was observed through marketing of apparel products from 1960 to 1980s (Katende-Magezi, 2017).

The purchase of apparel has increased in Tanzania (Katende-Magezi, 2017), however, due to limited locally made apparel products in the year 2003, the importation of second-hand apparel increased to 31%, while the country exported locally made apparel by 0.05% only (Keregero, 2016). The purchase of imported apparel particularly second-hand apparel increasing yearly due to demand of customers from different backgrounds based on income, age, education, and political power (Kinabo, 2014). Imported second-hand apparel are available and accessible at cheaper prices and are characterised by quality and aesthetic look, leaving down locally made apparel (Kinabo, 2014). Results by Calabrese et al. (2017) enlightened that importation of apparel in Tanzania was higher (97%) than 3% for locally made apparel.

Behavioral determinants, namely, cultural, social, personal and psychological influence economic development and are interdependent (Kumar, 2014; 2017) as they may influence customer choice of imported and locally made apparel (Roszkowska-Hołysz, 2013). Culture determinants (Durmaz, 2014; Singh, 2016; Akpan, 2016) interacting with the community that has its own culture appeared to influence purchasing decision (Rajagopalan and Heitmeyer, 2005). According to Kotler and Keller (2016) social determinants provide customers with information about the products and the purchases. Kotler and Armstrong (2012), and Jisana (2014) added that customers have their own personal attributes that influence the purchase decision of apparel. Ratilla, (2016) noted that customers knowledge on apparel help them to make informed choice of apparel due to attributes of apparel. Customers are also elicited with psychological determinants to make choice of apparel. Jisana (2014) asserted that psychological determinants stimulate customers to make purchases. The psychological determinants are linked with customers' attitudes, perception, preference, interest, beliefs and motivation on the choice of apparel (Halepete et al., 2009). The purchase of apparel is also affected by these variables since customers have knowledge, experiences and attitudes to purchase apparel based on demographic characteristics.

Customers' demographic characteristics change with their needs that influence the purchase of apparel (Iqbal et al., 2013; Roy et al., 2015). Behavioral determinants are used as independent variables that assess customer behavior based on apparel choice (Muhammad & Ghulam, 2019; Lee & Hwang, 2019). Product type, purchase quantity and frequency of purchasing apparel are among of the independent variables that often used to determine how customers' choice on the imported and locally made apparel (Kotler and Keller, 2016). Including demographic variables as independent factors to determine how they influence customers choice of imported and locally made apparel is important (Kumar, 2014; Anic & Mihic, 2015; Kumburu & Kessy, 2018). Inclusion of demographic characteristics in the determination of key determinants influencing behavior of customers makes the understanding customer behavior to be a challenge, however, focusing on individual determinants can heighten the purchase of imported and locally made apparel.

The magnitude to consume more imported than locally made apparel raise some questions to the researchers on what influences the rate of purchasing imported apparel. It is known that the purchase of imported and locally made apparel contributes to the economic development and the contribution of behavioral determinants cannot be overlooked. Although is advised to understand individual differences in behavioral determinants, namely cultural, social, personal and psychological determinants as they influence customers choice on purchasing of apparel, still there is limited research on behavioral determinants in Tanzania. Cultural, social, personal, psychological and demographic, determinants could be a stepping stone to be explored and understand how they influence customers' choice of imported and locally made apparel. This created an avenue undertaking of this study. Since Dar es Salaam city is the biggest business centre of apparel in Tanzania, with people from different parts of the country.

Methodology

The study was conducted in Dar es Salaam, Tanzania (figure 1). Dar es Salaam city is chosen as the study area because it is a business hub of apparel with the adequate number of shopping malls, second-hand markets and made to measure apparel shops dealing with adult males' and females' apparel (Owens, 2014). The study employed the purposive and systematic random sampling techniques for selecting shopping outlets and the respondents respectively (Creswell, 2014; Kothari, 2014). Three second-hand apparel markets, 10 malls, 14 boutiques selling imported new apparel, and 16 locally made apparel shops in Dar es Salaam that dealt with adult unisex female and male apparel were purposively selected. A mall with at least 25 shops in one building, made to measure apparel shops with at least 50 customers per week and second-hand market with at least 100 stalls for selling adult females' and males' apparel were purposively selected. A systematic random sampling technique (nth) was used in gathering information from the adult customers purchasing apparels from each shopping outlet including boutiques and apparel shops, locally made apparel shops dealt with made to measure and ready-made apparel and second-hand apparel markets. Every third adult exiting from each outlet with a shopping package was selected and requested to fill in the questionnaire.

Proportionate allocation was used to distribute 420 participants. Male and female participants were distributed relatively equal from each sampled population to obtain a diverse range of customers' interests, preferences, knowledge and experiences with their similarity in purchasing characteristics (Kusumawaty, 2016 & Njuguna, 2015). Cochran's formula was used to compute the desired sample size of the population (Cochran 1963; Saunders et al., 2012).

Cochran's formula for infinite population: $n = \frac{z^2 * p * (1-p)}{e^2}$

Where:

n = the desired sample

z^2 = standard normal deviate value (at 1.96 corresponding to 95% Confidence Interval)

e = the acceptable margin error (set at 5%) expressed in 0.05.

The proportion of 50 percentage of the population purchasing apparel was set at the decimal point, $p = 0.5$ to calculate the minimum sample size (Ndesaulwa et al., 2017). Ten percentage of 382 was added to accommodate unforeseen responses, which make a total sample size of 420 comprised of 206 (49%) male and 214 (51%) female respondents (Creswell 2014). Krejcie and Morgan (1970) revealed that a sample size of 420 is appropriate when the population has characteristics of 1,000,000 customers or more with a confidence of 95% and a margin error of 5%. During data collection a consent was sought from participants before administering the questionnaire. The researcher administered questionnaires to the customers and filled out on the spot and collected at the main outlets of the selected malls, shops and markets on the same day. While filling the questionnaire copies, clarifications were made to customers when necessary.

Data analysis

Data analysis was conducted by using the statistical software R (R Core Team, 2021). The "Performance Analytics" function was used to explore the strength of the correlation between variables and to generate two correlation matrices to examine correlation between dependent variables. As the study focused on the customer choice between imported and locally made apparel, our data were of binary nature. Choice on imported apparel was coded as “0”and locally made apparel as”1” and were treated as dependent variables. Because of their binary nature, a generalized linear model (GLM) with binomial error distribution was used. Independent variables included in this model were gender, age, marital, dependants, education, occupation, monthly income, apparel cost, apparel quantity, and shopping outlet type. The final model was selected by utilizing stepAIC function from MASS package. The study assessed how apparel quantity could be affected by customer behavior, of which linear regression model was used by utilizing lm function from R software. To fulfil the condition of linearity, quantity was log transformed and treated as dependent variable, while behavior categories named as cultural, social, personal, and psychological behaviors were treated as independent variables. As of the first binomial model, we used stepAIC from MASS package to determine the best model. Finally, the study assessed frequency (counts) of purchased apparels in relation to the behavior of customers, of which the GLM with Poisson error distribution was used. Annual frequency of purchased apparels were treated as counts, and as dependent variable, while customer behavior categories (cultural, social, personal, and psychological behaviors) were treated as independent variables.

Results

The key determinants associated with the choice of apparel choices determined by GLM with binomial error distribution were gender, income, apparel cost, apparel quantity, and retailer outlets (Table 1). Choice probability from imported to locally made apparels increased with an increase of females and expenditure, while in contrast, the probability decreased with an increase of income, quantity, and outlet type (Figure 2). Generally, quantity and cost of apparel as well as gender, income, and type of outlets are key determinants to consider when choosing apparel. Based on behavioral determinants of customers towards the quantity of apparel, the Linear model results revealed a significant effect of social, personal, and psychological behavior towards the quantity of apparel purchased (Table 2). The quantity of apparel purchased increased with an increase of social, personal, and psychological behavior (Figure 3). Therefore, social, personal, and psychological behavior contributes to the quantity of apparel purchased.

The results on the effects of behavioral determinants and the frequency of purchasing apparel, revealed that there was significant effect of cultural behavioral on the frequency of the purchased apparels (Table 3). This implies that cultural behavior associated with customer purchasing frequency, therefore, marketers should take into consideration the effect of cultural differences among their customers when deciding which apparel products to put in the market.

Discussion and conclusions

Gender, income, type of outlets, quantity and cost of apparel were significant determinants of customer choice of apparel. Expenditure and being a female associated to choose local made apparels, while personal income, quantity availability, and outlet type associated with the choice of imported apparels. Social, personal, and psychological behavior were significantly associated with the choice of apparel. The quantity of apparel purchased increased with an increase of social, personal, and psychological behavior while cultural determinants was significantly associated with the frequency of purchasing apparel.

Gender, income, apparel cost, apparel quantity, and retailer outlets were associated with the choice of apparel (Table 1). The results revealed that the choice probability from imported to locally made apparels increased with an increase of females and expenditure, in contrast, the probability from locally made to imported decreased with an increase of income, quantity, and outlet type (Figure 2). The findings on gender and income corroborate with Anić and Mihić

(2015). Income does not stop customers to purchase apparel but it determines the choice of apparel. In line with the finding, Ezen and Bello (2016) also indicated that income allows customers to make purchase decision and purchase apparel when income goes with it. Being a female or male and the apparel expenditure have an impact in the business. The choice of apparel was significantly associated with apparel expenditure which concurred with Aloma and Lawan (2013) findings. The study by Dhiman et al. (2018) also support the findings, however apparel expenditures were considered when they have value to customers for personal use. Although the difference in purchasing imported and locally made apparel were observed, but customers spend their income to purchase apparel. In this regard, income was seen to be an important indicator in defining the market of imported and locally made apparel.

The findings further revealed that the choice from locally made to imported decreased with an increase of income, quantity and the types of apparel outlet. With regard to quantity, our findings do not correspond with Ezen and Bello (2016); and Chi et al. (2021). The study findings corroborate with Dhiman et al. (2018) studies on the types of apparel brands purchased by customers. The purchase of products in quantity can be related to other attributes as observed by Huang and Yang (2014) and Dhiman et al. (2018). The quantity discounts and brand preference were the attributes influencing the quantity of products to be purchased. It means that when offering discounts can results to willingness to purchase in quantity where customers can make decision based on their requirements.

Based on the income, it was observed that income influenced customers to purchase more imported apparel than locally made apparel. The findings are inconsistent with Haque et al. (2015) findings where customers focused on quality and brand image to purchase imported apparel. This implies that income shapes customers to make decision on the choice of apparel to purchase. However, the more the products are sold at lower prices the more resources are allocated to purchase them irrespective of other attributes.

Considering the outlet type choice, Riungu (2009) found similar findings on the types of shopping outlets to select apparel and purchasing practices. The findings were agreeable by Dhiman et al. (2018) on the types of outlets preferred by customers, however the study focused on different demographic variables towards the purchase of apparel. This was also supported by Wel et al. (2012) on the types of outlets which showed that customers use multiple outlets to find the best bargain while others choose one outlet when there is price reduction of products. This shows that when the outlets deliver customer expectations, consumers tend to patronise the outlets to purchase the products. Based on the findings, income, quantity and types of the outlets are the gateway success for marketing imported and locally made apparel.

The results from linear regression model revealed significant effect of social, personal, and psychological behavior towards the quantity of apparel purchased (Table 2). The quantity of apparel purchased increased with an increase of social, personal, and psychological determinants (Figure 3). These determinants contributed to the quantity of apparel purchased. Irrespective of social, personal, and psychological determinants, customers purchased locally and imported apparel in quantity. With regard to psychological behavior, the findings are inconsistent with Agu and Onuoba (2016); and Riungu (2009). With regard to social behavior, our findings were in line to Asare et al. (2016). With regards to personal behavior the study findings supported by ur Rehman et al. (2017); and Muhammad and Ghulam (2019) that found significant association between personal behavior and the quantity of apparel purchased. Our findings provide evidence that social, personal and psychological determinants enhance the purchase of imported and locally made apparel in quantity.

The frequency of apparel purchased increased with an increase of cultural determinants (Figure 4). Due to cultural reasons, customers have basic needs and expectations which drive them to frequently purchase apparel (Lawan & Zanna, 2013). This is consistent with Akpan (2016) who revealed that culture have a tendency to shape and guide the behavior of customers to secure the products while Aditi and Uma (2021) disagreed with the study findings. The study findings also dispute the findings of McKinney et al. (2004) who revealed that the frequency of apparel purchases was associated with apparel involvement, social involvement and apparel benefits instead of cultural determinants. This shows that cultural determinants may not only be a factor to frequently guide customers to purchase apparel. This was highlighted by Arpan and Peterson (2008) who indicated that customers may also depend on other attributes to purchase apparel. However, the interactions of customers from diverse cultural background may accelerate the purchase of apparel that may explain their cultural identity.

This study concludes that apparel business requires marketers to consider targeted gender, average monthly income, and where to sell the apparel. The conclusion is also be made on the effect of quantity of apparel the customers would buy, as there are clear relationships with social, personal, and psychological determinants, while frequency of purchasing apparel has relationship with culture of customers. Therefore, this recommends marketers to understand that gender, income, type of outlet, and behavior of customers as the key determinants of purchasing apparels when developing business plan and strategies.

The study findings provide an insight into behavioral determinants influencing the purchase of imported and locally made apparel, however, research work on behavioral determinants toward the choice of apparel is still under minimal consideration. Certain limitations concerning the research setting should be suggested in order to guide future research. For instance, there might be a need of randomizing months of the year during data collection to observe annual / temporal variation, because this study data were collected in October to January, a time when there a correlation of holiday/religious celebrations. This study was conducted in Dar es Salaam city, there is a need of validating the current findings by using same sampling technique involving customers in other cities of Tanzania.

Study limitations

The study was limited to customers above 18 years old purchasing outer wear apparel for personal use. Customers below 18 years were not included because they may not have adequate purchasing power, although, they could decide on the choice of apparel with the help of their guardians. The study dealt with customers purchasing apparel from malls, boutiques and apparel shops, locally made apparel shops, and second-hand apparel markets, leaving behind other shops since the study focused on criteria set by the researchers. Despite of the limitations, this study offered important information that can be considered by retailers who are interested in marketing imported and locally made apparel to take into account determinant factors such as gender, price, levels of income, quantity, social, personal, psychological and cultural factors.

Tables

Table 1: Generalized Linear Model (GLM) with binomial error distribution results showing most significant determinants associated with the apparel choice

Predictor	Estimate	Standard Error	Z value	P value
Intercept	1.873	0.765	2.448	0.014
Gender	2.143	0.497	4.314	<0.01
Income	-0.010	0.002	-4.410	<0.01
Cost	0.021	0.004	5.467	<0.01
Quantity	-0.092	0.018	-5.117	<0.01
Outlets	-1.419	0.236	-6.015	<0.01

Table 2: Linear model results showing the most significant behavioral determinants associated with the quantity of apparel

Predictor	Estimate	Standard Error	Z value	P value
Intercept	1.282	0.106	12.112	<0.01
Social	0.201	0.055	3.651	<0.01
Personal	0.216	0.043	4.976	<0.01
Psychological	0.165	0.047	3.497	<0.01

Table 3: Generalized Linear Model (GLM) with Poisson error distribution results showing the behavioral determinants associated with the frequency of purchasing apparel

Predictor	Estimate	Standard Error	Z value	P value
Intercept	1.364	0.230	5.922	<0.01
Cultural	0.278	0.066	4.180	<0.01
Social	0.025	0.076	0.333	0.739
Personal	0.079	0.061	1.289	0.198
Psychological	0.015	0.065	0.234	0.815

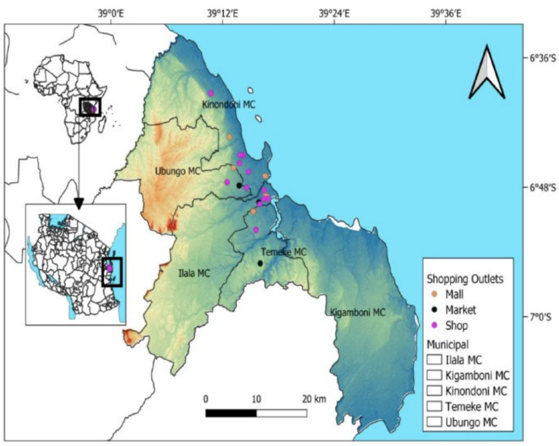


Figure 1: A Map of Dar es Salaam City and its Districts. Coloured dots indicate sampling units that were markets, malls, and shops. Each colour indicates different outlet. The Municipal Council represented with abbreviation "MC".

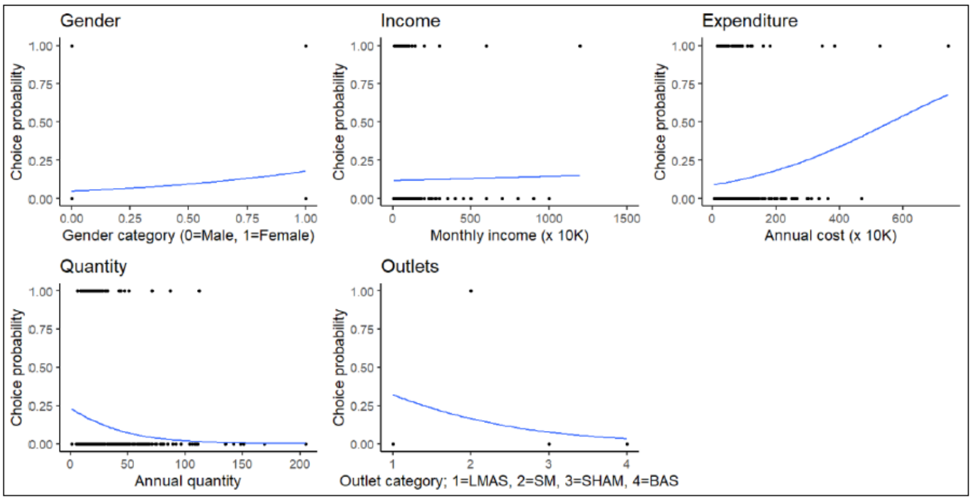


Figure 2: Relationship between apparel choice probabilities from imported to local made apparels with the associated key determinants. Imported choice was coded as "0" and locally made apparel coded as "1", although the probability was taken as a continuum ranging from 0 to 1. LMAS (Locally Made Apparel Shop), SM (shopping mall), SHAM (Second-Hand Apparel Market), BAS (Boutiques and Apparel Shop).

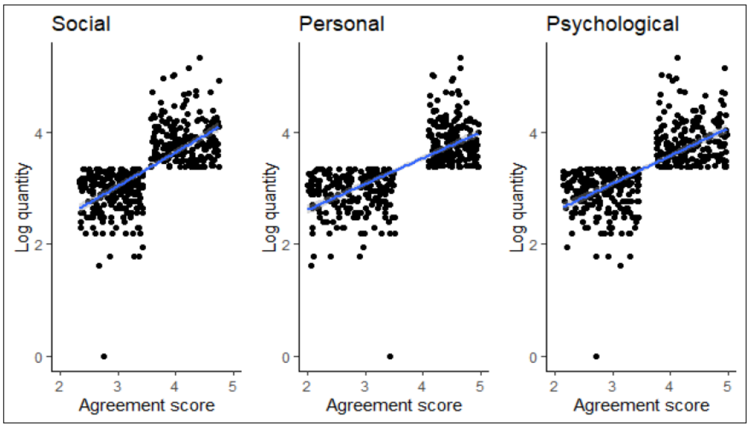


Figure 3: Relationship between the behavioral effect and the quantity of apparel purchased

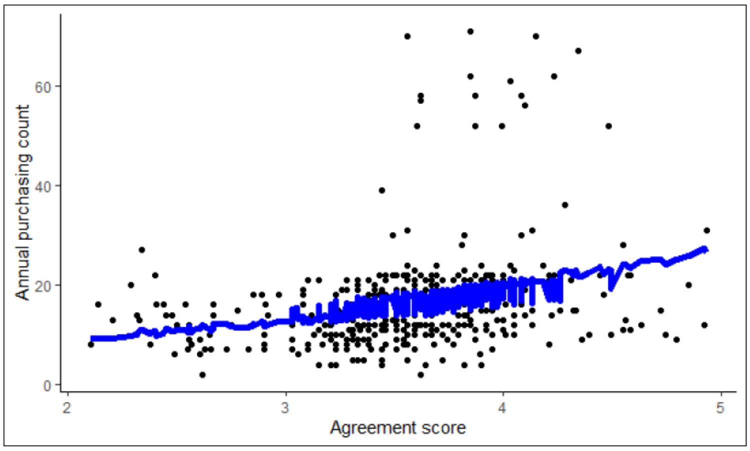


Figure 4: Relationship between the cultural effect and frequency of purchasing apparel

Acknowledgement

The authors would like to acknowledge the financial support from the Sokoine University of Agriculture. Special thanks is directed to the Kenyatta University supervisors for immeasurable guidance towards the successful of this paper. We are grateful to the respondents of Dar es Salaam City for their willingness to participate in the study and providing the required information.

Author Contributions

KGA together with OEB and IJK contributed on the design of the study. KGA collected and organized the data. KMH performed the statistical analysis. KGA wrote the first draft of the manuscript, while other co-authors reviewed and refined the manuscript.

Email addresses

Gudila Kereth ✉ gkereth@yahoo.co.uk
Elizabeth Bosibori Oigo ✉ oigo.bosibori@ku.ac.ke
Juliet Kaindi Isika ✉ isika.juliet@ku.ac.ke
Michael Honorati Kimaro ✉ m.h.kimaro@rug.nl

Declaration of Conflicting Interests

The authors of this article declared that no potential conflicts of interest with respect to the research and publication of this article. KGA was employee at the Sokoine University of Agriculture (SUA), and this employer has funded this project. However, the funders had no role in the study design, data collection, analysis or decision to publish.

References

Aditi, D. & Uma, J. (2021). Influence of fashion industry on behavior of fashion college students. *Psychology and Education, 58* (1), 5706-5712

Agu, A.G. & Onuoba, O.A. (2016). Psychological influences and fashion consumption behavior of consumers in South East Nigeria. *International Journal of Research in Business Studies and Management, 3*(12), 38-48

Akpan, S. J. (2016). The influence of cultural factors on consumer buying behavior (A case study of pork). *British journal of marketing studies, 4*(6), 44-57.

Anić, D., & Mihić, M. (2015). Demographic profile and purchasing outcomes of fashion conscious consumers in Croatia. *Ekonomski Pregled, 66*(2), 103-118.

Arpan, L.M. and Peterson, E.M. (2008) Influence of source liking and personality traits on 3perceptions of bias and future news source selection. *Media Psychology 11* (2), 310-329.

Asare, T.O., Ibrahim, A-F., & Kwesi, A.D. (2016). The influence of social and psychological factors on the selection of clothing among female students of Kumasi polytechnic, Ghana. *International Journal of Engineering Research and Reviews, 4*(4), 20-29

Calabrese, L., Balchin, N., & Mendez-Parra, M. (2017). The phase-out of second-hand clothing imports: What impact for Tanzania? *MPRA Paper No. 82175*. Retrieved on 10.06.2018, from https://mpra.ub.uni-muenchen.de/82175/

Chakrapani, A. (2015). Consumer behavior and preferences of Indian consumers towards apparel purchase in retail markets of India. *Innovative Journal of Business and Management, 4* (4) 94 -100.

Chi, T., Gerard, J., Yu, Y., & Wang, Y. (2021). A study of U.S. consumers' intention to purchase slow fashion apparel: understanding the key determinants. *International Journal of Fashion Design, Technology and Education, 14*(1), 101-112.

Cochran, W.G. (1963). *Sampling Techniques,* (2nd Edition), New York: John Wiley and Sons, Inc.

Creswell, J.W. (2014). *Research design, qualitative, quantitative and mixed method approaches* (4th Edition). London: SAGE.

Dhiman, R., Chand, P.K., & Gupta, S. (2018). Behavioural aspects influencing decision to purchase apparels amongst young Indian consumers. *FIIB Business Review, 7*(3), 188-200.

Durmaz, Y. (2014). The Influence of cultural factors on consumer buying behavior: An application in Turkey. *Global Journal of Management and Business Research. 14*(1), 36-44.

Ezen, S.C. & Bello, B.A.O. (2016). Factors influencing consumers buying behavior within the clothing industry. *British Journal of Marketing Studies, 4*(7), 63-81.

Fung Business Intelligence Centre (FBIC). (2015). Europe's 25 fastest-growing major apparel retailers, global retail and technology.

Halepete, J., Littrell, M., & Park, J. (2009). Personalization of fair trade apparel: Consumer attitudes and intentions. *Clothing and Textiles Research Journal, 27*(2), 143-160.

Haque, A., Anwar, N., Yasmin, F., Sarwar, A., Ibrahim, Z., & Momen, A. (2015). Purchase intention of foreign products: A study on Bangladeshi consumer perspective. *SAGE Open*, 1-373 12.

International Trade Centre (ITC). (2011). The Chinese market for clothing, Doc. No. SC-11-375 212, 3-13.

Iqbal, H.K., Ghafoor, M.M., & Shahbaz, S. (2013). Impact of demographic factors on store selection: An insight in Pakistani society. *Journal of Marketing Management, 1*(1), 34-45.

Jisana, T.K. (2014). Consumer behavior models: An overview. *Sai Om Journal of Commerce and Management, 1*(5), 34-43.

Katende-Magezi, E. (2017). *The impact of second hand clothes and shoes in East Africa.* 3Geneva. CUTS International, Geneva. Retrieved on 29.09.2017, Available in http://www.cutsgeneva.org/pdf

Keregero, C.M. (2016). A study on the performance of textile sector in Tanzania - Challenges and ways forward. *Journal of Business and Management, 4*(5), 1-14.

Kinabo, O.D. (2004). *The textile industry and the mitumba market in Tanzania.* In A paper presented to the Tanzania-Network. de Conference on textile market and Textile Industry in Rural and Urban areas in Tanzania on 23rd October (Vol. 23).

Kothari, C.R., & Gaurav, G. (2014). *Research Methodology: Methods and Techniques.* (3rd Edition) New Age International (P) Limited, New Delhi.

Kotler, P., & Armstrong, G. (2012). *Principles of marketing.* (14th Edition). Upper Saddle River, NJ: Prentice Hall.

Kotler, P., & Keller, K.L. (2016). *Marketing management.* (15th Edition). Essex: Pearson Education.

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607-610.

Kumar, P. (2017). An analytical study of consumer buying behavior towards fashion apparels in Ludhiana. *Journal of Internet Banking and Commerce, 22*(3), 1-12.

Kumar, R. (2014). Impact of demographic factors on consumer behavior: a consumer behavior survey in Himachal Pradesh. *Global Journal of Enterprise Information System, 6* (2), 35-47. Retrieved on 11.02.2018, from www.gjeis.org

Kumburu, N.P., & Kessy, J.F. (2018). Consumers' preference on imported and locally made furniture in Dar es Salaam and Arusha, Tanzania. *Global Business Review*, 1-13.

Kusumawaty, Y. (2016). *Determinants of cross-shopping behavior among modern and traditional food retail stores in Indonesia: An empirical analysis of Riau Province.* Unpublished PhD dissertation, Curtin University.

Lawan, L.A., & Zanna, R. (2013). Evaluation of socio-cultural factors influencing consumer buying behavior of clothes in Borno State, Nigeria. *International Journal of Basic and Applied Science, 1*(3), 519-529.

Lee, J., & Hwang, J. (2019). Factors affecting the fashion purchase decision-making of single Koreans. *Fashion and Textiles, 6*(1), 1-21.

McKinney, L.N., Legette-Traylor, D., Kincade, D.H., & Holloman, L.O. (2004). Selected social factors and the clothing buying behaviour patterns of black college consumers. *The International Review of Retail, Distribution and Consumer Research, 14*(4), 389-406.

Muhammad, I.Y., & Ghulam, M.M. (2019). An exploration of factors influencing purchase decision making of apparel consumers. *Amazonia Investiga, 8*(23), 457-468.

Njuguna, J.N. (2015). The effect of country-of-origin, consumer characteristics and attitudes on consumer behavior towards foreign clothing brands in Nairobi, Kenya. *British Journal of Marketing Studies, 3*(7), 50-92.

Owens, K.E. (2014). Negotiating the City: Urban Development in Tanzania. Unpublished PhD. Thesis, University of Michigan.

R Core Team (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: https://www.R-project.org/.

Rahman, O., Fung, B.C.M., Chen, Z., Chang, W., & Gao, X. (2018). A study of apparel consumer behavior in China and Taiwan. *International Journal of Fashion Design, Technology and Education, 11*(1), 22-33.

Rajagopalan, R., & Heitmeyer, J. (2005). Ethnicity and consumer choice: A study of consumer levels of involvement in Indian ethnic apparel and contemporary American clothing. *Journal of Fashion Marketing and Management: An International Journal.*

Ratilla, M. (2016). *Quantitative marketing research* (Master dissertation, Masarykova Univerzita, Ekonomicko-Správní Fakulta, Brno, Czechia).

Riungu, D.M. (2009). *Factors influencing clothing selection and buying practices among primary school teachers: A case of Mwimbi Division, Meru South District.* Unpublished MSc. Thesis Kenyatta University.

Roszkowska-Hołysz, D. (2013). Determinants of consumer purchasing behavior. *Management, 17*(1), 334-346.

Roy, A., Boussie, A., & Yuan, M. (2015). Demographic focus - changing global consumers. *Global Demographics Research*, 1-28. Retrieved on 20.3.2018, from https://research-doc.credit-suisse.com/docView

Sampath, P.G. (2014). Industrial development for Africa: Trade, technology and the role of the state, African. *Journal of Science, Technology, Innovation and Development, 6* (5), 439-453.

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (6th Edition). Harlow: Pearson.

Shiferaw, A. (2017). Productive capacity and economic growth in Ethiopia, department of economic & social affairs. *Committee for Development Policy (CDP) Background Paper No. 34.*

Singh, N. (2016). A study of buying behavior of youth towards branded fashion apparel in Mawana city. *International Journal of Home Science, 2*(3), 33-37.

ur Rehman, F., Yusoff, R.B.M., Zabri, A.B.M., & Ismail, F.B. (2017). Determinants of personal factors in influencing the buying behavior of consumers in sales promotion: A case of fashion industry. *Young Consumers, 18* (4), 408-424

Van der Pols, D. (2015). *Business opportunity report* Ethiopia textile & apparel industry Commissioned by Netherlands Embassy in Addis Abeba CBI and Nash international BV.

Wel, C.A.C., Hussin, S.R., Omar, N.A., & Nor, S.M. (2012). Important determinant of consumers' retail selection decision in Malaysia. *World Review of Business Research, 2*(2), 164-175

Yang, S., Song, Y., & Tong, S. (2017). Sustainable retailing in the fashion industry: A Systematic Literature Review. Sustainability, 9(1266) 1-19.

PEER-REVIEWED CONGRESS PAPER

Challenges and coping strategies of female headed households in Ikwuano Local Government Area of Abia State

Uju Ejinkeonye[1], Ijeome Ezea[1] & Chiamaka Chukwuone[2]
[1]*Michael Okpara University of Agriculture, Nigeria*
[2]*University of Nigeria, Nigeria*

Abstract

The study investigated the challenges and coping strategies of Female Headed Household in Ikwuano Local Government Area of Abia State. Two null hypotheses guided the study: There is no significant difference between the mean responses of educational levels of females on the challenges of Female Headed Household and there is no significant difference between the mean responses of different occupation of the females on the coping strategies adopted in their households. The area of the study is Ikwuano L.G.A. Simple random sampling techniques was used to select 285 females from 986 registered population of female headed household in Ikwuano Local Government Area of Abia State. Frequency, means and percentages were used to analysis the research questions while ANOVA was used to test the null hypothesis. The key findings revealed that the reasons for Female Headed Households include: widowhood, abandonment, divorce, migration and separation. The study revealed the challenges of female headed households as: economic insecurity, lack of income earning opportunities, poor social status, lack of employment, inadequate finances to run the family, lack of respect by family members/society, gender inequality, difficulty in raising children, lack of support from offspring, lack of regular income, struggling to procure food, poor access to basic healthcare and loneliness among many others, coping strategies adopted by female headed households in managing their households include; involvement in daily/weekly contribution , engaging in menial jobs, gender equality, begging, trading, regular income, support from members of religious group, free access to basic healthcare, support from family members, among others. The study recommended that Conferences, seminars and workshops should be periodically organized for heads of female headed household on how to cope with the challenges they are facing sustainability across lifespan in households among others.

KEYWORDS: **FEMALE HEADED, HOUSEHOLDS, SUSTAINABILITY ACROSS LIFESPAN IN HOUSEHOLDS, FAMILY LIVING**

Introduction

In every human society, the household is one of the most important and intrinsic part of people's lives. Primarily, it is the unit of society where individuals cooperate and compete for resources, confront and reproduce societal norms, values, power, authority and privilege. A household consists of one or more people who reside in the same dwelling and also share meals or living accommodation, and may consist of a single family or some other grouping of people (Varley, 2013). The term, head of household refers to the key economic provider, the major decision maker and the person assigned by others as the head of the household. The headship

Ejinkeonye, U., Ezea, I., & Chukwuone, C. (2022). Challenges and coping strategies of female headed households in Ikwuano Local Government Area of Abia State. *International Journal of Home Economics, 15*(2), 91-102.

Uju Ejinkeonye ✉ ejinkeonye.uju@mouau.edu.ng

of the household therefore, is usually identified with the person who has the greatest authority in the household.

Head of household from the African perspective reflects the stereotype of a man in the household as the person in authority and the breadwinner (Hedman et al., 2015). Thus, in traditional African societies, males are assumed to be heads of household irrespective of the status of their spouses (Chant and Brydon, 2016). But recently, there is an emergence and increase in Female headship of households in Nigeria and globally across nations. According to Ngwenya (2013) one fourth of all rural households in Nigeria are headed by females. While the debates over the definition of Female Headed Household increases, Batista (2015) defined Female-Headed Household (FHH) as a family where woman in the household is seen as the person in authority and the breadwinner with children and no husband or adult male present. In a female headed household, the woman could be widowed, unmarried mother, divorced or separated (Hedman et al., 2015). Folbre (2014) sees Female Headed Household (FHH) as a source of social power and self-worth.

Furthermore, recent studies have shown that in the developing world, households headed by women are increasing day-by-day and that such heads of households are over represented among the poor (United Nations, 2014). Data from United Nations (2015) on current status of the social situation also indicates that on average; around two thirds of women in developing countries are either heads of the household or the spouses of the head. Recent estimate has further shown that elderly women heads of household constitute 13 per cent in Middle East and North Africa, 22 per cent in Sub-Saharan Africa, 16 per cent in Asia, 35 per cent in the Caribbean and 24 per cent in Latin America (United Nations, 2013). In Nigeria, the National Bureau of Statistics (NBS, 2015) showed that 16.5% of households in Nigeria are headed by women majority of who are elderly women. These findings have indicated that generally, the social conditions of female heads of households present a perplexing paradox in Nigeria where the gap between women and men heads of households caught in the cycle of poverty has continued to widen in the past decade (Okoya, 2016).

Mullings (2015) stated that a female headed household is a household in which an adult female is the sole or main income producer and decision-maker. In most countries, women are not usually considered as heads of households unless no adult male is living permanently in the household (Folbre, 2014). The assumption that the head of a household is always an adult man, even if a woman's economic contribution to the household's maintenance is the same or greater than that of a man, is a form of gender bias (Ruwanpura, 2015). In developing countries, there is a general trend of more and more women being the primary source of economic support for their families.

Incidentally, the emergence of female heads of households is occurring at a period the traditional familial care and support for the female household heads are declining among family members (Eboiyehi, 2015).

The question now is, how do the heads of female household cope and manage their family activities? Based on this, the researchers decided to investigate the challenges and coping strategies of Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State.

Purpose of the Study

The major purpose of this study is to investigate into the challenges and coping strategies of Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State. Specifically, the study;

i. Identified the reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State.

ii. determined the challenges faced by Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State.
iii. Identified the coping strategies adopted by the heads of Female Headed Households (FHH) in managing their households.

Research Hypothesis

Two null hypotheses guided in this study.

$H0_1$: There is no significant difference between the mean responses of educational levels of female heads of households on the challenges of Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State.

$H0_2$: There is no significant difference between the mean responses of female heads of household's occupation on the copying strategies adopted in the households in Ikwuano Local Government Area of Abia State.

Methodology

This study adopted descriptive survey research design. The of the study was Ikwuano Local Government of Abia State. The population of the study comprised of 986 registered population of female heads of household in Ikwuano Local Government Area of Abia. Ikwuano Local Government Area comprises of Oboro and Oloko. Oboro has seven key communities in namely, Umudike, Umuariaga, Amaoba, Amawom, Ndoro, Amaba-Ime, Umugalu Oboro while Oloko has eight key communities namely; Otoro-Nchara, Ama Izi, Ezi-Amata, Ezi Uku, Umu- Akwu, Umu-Ugo, Ahaba, Azu-Iyi and Ohuhu-Nsulu, making 15 communities in Ikwuano. Simple random sampling technique was used to select 19 female heads of household from each of the 15 communities making a sample size of 285 female heads of households.

The instrument for data collection was Challenges and Coping Strategies of Female Headed Household Questionnaire (CCSFHHQ). The CCSFHHQ was developed by the researchers in line with the objectives of the study and done through extensive review of literature the instrument was divided into two major parts; A and B. A dealt with the personal data of respondents while B has three sections 1, 2 and 3 each representing the specific purposes of the study. The CCSFFHQ was validated by three lecturers from Home Science Department, Michael Okpara University of Agriculture Umudike. On the basis of their comments and suggestions, the instrument was modified to suit the purpose of the study.

The reliability of the instrument was established through Cronbach Alpha (α) coefficient index. Twenty copies of the questionnaire were administered to twenty female heads of households in Ihie Ndume in Umuahia North Local Government Area Abia State who are not part of the study. This was conducted through direct delivery to their households, after that it was correlated and it yielded a coefficient of 0.82 which was regarded as reliable. The questionnaire was given to the respondents at their houses by the researchers. The questionnaire items were explained to the respondents and were collected on the spot. Frequency, and percentages were used to analysis the demographic characteristics and means and standard deviations were used for research questions while ANOVA was used to test the null hypothesis using a computerized data analysis package known as Statistical Package for Social Science (SPSS version 22.0)

Results and Findings

Table 1 examined the demographic characteristics of the respondents.

The data collected revealed that 7.4% representing 21 respondents were divorced, 42.5% representing 121 respondents were widows, 27% representing 77 respondents were separated while 23.2% representing 66 respondents were single parents. This implies that the respondents were of different marital status. The majority of the respondents were widows while the minority of the respondents were divorcees.

Table 1: Socio-Demographic Characteristics of the Respondents

Category	Demographic Characteristics	Frequency	Percentage
Marital status	Divorced	21	7.4
	Widow	121	42.5
	Separated	77	27.0
	Single	66	23.2
	Total	**285**	**100.0**
Age	25-30 years	14	4.9
	31-35 years	27	9.5
	36-41 years	41	14.14
	42-47 years	47	16.5
	48 years and above	156	54.7
	Total	**285**	**100.0**
Education qualification	FSLC	47	16.5
	WAEC	130	45.6
	OND	55	19.3
	HND/BSc	35	12.3
	MSc/PhD	18	6.3
	Total	**285**	**100.0**
Occupation	Farming	46	16.1
	Petty trading	161	56.5
	Retiree	54	18.9
	civil servant	24	8.4
	Total	**285**	**100.0**
Number of children	None	46	16.1
	1-2	48	16.8
	3-4	104	36.5
	5-6	50	17.5
	7 and above	37	13.0
	Total	**285**	**100.0**
Age distribution of the children	5 years	64	22.5
	6-10 years	52	18.2
	11-15 years	143	50.2
	15-20 years	1	.4
	21 years and above	25	8.8
	Total	**285**	**100.0**

Source: Field survey (2017).

4.9% representing 14 respondents were within the age range of 25-30 years, 9.5% representing 27 respondents were within the age range of 31-35 years, 14.14% representing 41 respondents were within the age range of 36-41 years, 16.5% representing 47 respondents were within the age range of 42-47years, 54.7% representing 156 respondents were within the age range of 48 years and above. This study shows that the respondents were of different age group. The majority of them falling within the age range of 48 years and above while the minority were within the age range of 25-30 years.

16.5% comprising of 47 respondents had FSLC as their academic qualification only, 45.6% representing 130 respondents had WAEC certificate only, 19.3% comprising of 55 respondents had OND certificate, 12.3% comprising 35 respondents had HND/BSc certificate while 6.3% comprising of 18 respondents had only MSc /PhD certificate. This study further showed that the respondents were of different academic qualification. The majority of the respondents had WAEC while the minority had MSc/PhD certificate.

16.1% comprising 46 of the respondents are farmers, 56.5% representing 161 respondents are petty traders, 18.9% comprising 54 respondents were retiree while 8.4% representing 24 respondents are civil servants. The finding of this study suggests that the respondents had different careers/occupations. The majority of the respondents are petty traders while the minority of the respondents are civil servants.

16.1% comprising 46 of the respondents do not have any children, 16.8% representing 48 respondents have 1–2 children, 36.5% comprising 104 respondents have 3–4 children, 17.5% representing 50 respondents have 5–6 children, 13% representing 37 respondents have seven children and above.

0.4% comprising 1 respondent's children were 5 years and below, 18.2% representing 52 respondents' children were 6–10 years, 50.2% representing 143 respondents' children were 11–15 years, 22.5% comprising 64 respondents' children were 15–20 years, 8.8% representing 25 respondents' children were 21 years and above. From this study, it is evident that the majority of the respondents' children were 11–15 years while the minority of the respondents' children were 5 years and below.

From Table 2, the reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State was examined. Out of the five-item statement on the reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State, all the item statement were all accepted as the reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State. The respondents had a mean range of 3.72–3.78. This decision was arrived based on the fact the individual item statement mean score were above the criterion mean of 3.0. respondents with mean score of 3.78 as agreed that widowhood is the reasons for Female Headed Households (FHH).

Table 2: The reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State

S/No	Reasons for FHH	SA	A	SDA	D	$\bar{X}$	SD	Remark
1	Widowhood	259	9	5	12	3.78	0.71	Accept
2	Abandonment	258	9	5	13	3.74	0.75	Accept
3	Divorce	256	9	6	14	3.73	0.77	Accept
4	Migration	252	11	7	15	3.72	0.78	Accept
5	Separation	255	14	4	12	3.75	0.73	Accept

Respondents with mean score of 3.74 claimed that abandonment is the reasons for Female Headed Households (FHH), respondents with mean score of 3.73 attested that divorce is the reason for Female Headed Households (FHH), respondents with mean score of 3.72 reported that migration is the reasons for Female Headed Households (FHH), finally, respondents with mean score of 3.75 accepted that separation is the reasons for Female Headed Households (FHH). The findings of this study are in line with Verma (2013) who contested that divorce is one of the major reasons for female headed households in Ghana. Verma (2013) further stated that high rate of family crisis among family members which has led to high rate of divorce. This led to rapid and persistent increase in the female headed households in the country. The outcome of this study is in conformity with Mwawuda (2013) who submitted that family separation is one of the vital reasons behind the rising rate of female headed households in the country. After family separation, the female counterpart of the family is always forced to head her home. The outcome of this study correlates with Asiazobor (2013) who reported that migration and abandonment is one of the major reasons for female headed households in Nigeria.

Table 3 investigated the challenges of female headed household In Ikwuano Local Government Area of Abia State. Seventeen-item statement were investigated on the challenges of Female Headed Household in Ikwuano Local Government Area of Abia State. Out of the 17-item statement listed, all the item statement were all accepted as the challenges of female headed household In Ikwuano Local Government Area of Abia State. This was arrived based on the fact that all the item statement listed had a mean score above the criterion mean (X = 3.0). respondents with mean score of 3.74 accepted that economic insecurity 3.74 lack of income earning opportunities is one of the challenges of female headed household, respondents with mean score of 3.73 attested that poor social status is one of the challenges of female headed household, respondents with mean score of 3.75 agreed that lack of employment is one of the challenges of female headed household, respondents with mean score of 3.77 reported that inadequate finances to run the family is one of the challenges of female headed household, respondents with mean score of 3.76 asserted that lack of respect by family members/society is one of the challenges of female headed household, respondents with mean score of 3.73 claimed that gender inequality is one of the challenges of female headed household, respondents with mean score of 3.74 reported that difficulty in child raising is one of the challenges of female headed household, respondents with mean score of 3.55 agreed that lack of support from offspring is one of the challenges of female headed household, respondents with mean score of 3.67 claimed that lack of regular income is one of the challenges of female headed household 3.57 struggling to procure food is one of the challenges of female headed household, respondents with mean score of 3.65 reported that poor access to basic healthcare is one of the challenges of female headed household, respondents with mean score of 3.55 agreed that loneliness is one of the challenges of female headed household, respondents with mean score of 3.63 claimed that poor nutrition is one of the challenges of female headed household, respondents with mean score of 3.60 agreed that lack of support from family members is one of the challenges of female headed household, respondents with mean score of 3.56 accepted that lack of community support, finally, respondents with mean score of 3.70 agreed that lack of support from members of religious groups.

The findings of this study are in agreement with who attested that economic insecurity, and unemployment is one of the challenges facing single parents and widows in Jos, Plateau State. The study correlates with who asserted that lack of respect by family members and society as well as depression are major challenges facing widows and single parents in Nigeria. Similarly, Ngwenya (2013) reported that gender inequality is a serious challenge faced by heads of female headed households in Kano, Nigeria. Okoye (2014) reacting to the challenges of widows stated that poor nutrition and lack of support from family members are among the problems confronting single parent households. More so, Batista (2015) identified lack of support from family members and lack of community support as the problems facing female headed households. Finally, the findings of this study agree with Hedman et al., (2015) who identified poor access to basic healthcare and loneliness as challenges facing female headed households.

The coping strategies adopted by the heads of Female Headed Households in managing their households was investigated above. 34-items statement on the coping strategies adopted by the heads of Female Headed Households in managing their households were examined. Out of the 34 items statement on the coping strategies adopted by the heads of Female Headed Households in managing their households all the coping strategies listed were accepted by the respondents except item no 34 which the mean score was 2.90. The mean range of the study were 2.90–3.78. This was arrived based on the fact that the individual mean scores were above the criterion mean of the study (criterion mean X = 3.0).

Table 3: The Challenges of Female Headed Household (FHH) In Ikwuano Local Government Area of Abia State

S/No	Challenges of FHH	SA	A	SD	D	$\bar{X}$	Sd	Remark
1	Economic insecurity	261	8	4	12	3.74	0.76	Accept
2	Lack of income earning opportunities	253	12	6	14	3.74	0.75	Accept
3	Poor social status	252	11	7	15	3.73	0.78	Accept
4	Lack of employment	252	17	4	12	3.75	0.71	Accept
5	Inadequate finances to run the family	261	8	4	12	3.77	0.72	Accept
6	Lack of respect by family members/society	258	11	5	13	3.76	0.72	Accept
7	Gender inequality	261	8	4	12	3.73	0.77	Accept
8	Difficulty in child raising	14	6	10	255	3.74	0.75	Accept
9	Lack of support from offspring	216	49	6	14	3.55	0.84	Accept
10	Lack of regular income	223	46	4	12	3.67	0.73	Accept
11	Struggling to procure food	218	49	5	12	3.57	0.83	Accept
12	Poor access to basic healthcare	219	50	4	12	3.65	0.73	Accept
13	Loneliness	213	51	7	14	3.55	0.84	Accept
14	Poor nutrition	214	55	4	12	3.63	0.74	Accept
15	Lack of support from family members	220	47	5	13	3.60	0.81	Accept
16	Lack of community support	213	56	4	12	3.56	0.81	Accept
17	Lack of support from members of religious groups	255	10	6	14	3.70	0.79	Accept

The findings of this study are in line with Eboiyehi (2015) who contested that skill acquisition and food service delivery, pattern drafting, decoration bead making, trading and regular income are coping strategies suitable for widows and separated mothers. who contended that widows as well as single parents depends largely on their family members for survival. Furthermore, the study conforms to Varley (2013) who attested that addition to farming and growing of crops as strategies for survival in Malawi, Female headed household's household also go into forests in search of resources such as firewood and thatch grass, among other items. The finding of this study correlates with Verma (2013) who contested that financial support from family members and spiritual support from religious organisations are one of the ways female headed households can survive. Nyamboga (2014) submitted that medical support and domestic support from family members when made available goes a long way to running a female headed households. The findings of this study conform with Cohen (2013) who submitted that academic support for paying of her children's school fees and engagement in entrepreneurial ventures is one of the vital coping strategies for heads of female headed households.

Table 4: Coping strategies adopted by the heads of Female Headed Households (FHH) in managing their households

S/No	Coping strategies adopted by the heads of FHH	SA	A	SD	D	$\bar{X}$	SD	Remark
1	Provision of income earning opportunities by government	261	8	4	12	3.74	0.76	Accept
2	Subsistence farming	258	11	4	12	3.73	0.79	Accept
4	Daily or weekly contribution (Esusu)	261	8	4	12	3.77	0.07	Accept
5	engaging in menial jobs	261	8	4	12	3.74	0.77	Accept
6	Gender equality	261	8	4	12	3.75	0.75	Accept
7	Begging	261	8	4	12	3.78	0.69	Accept

S/No	Coping strategies adopted by the heads of FHH	SA	A	SD	D	$\overline{X}$	SD	Remark
8	Trading	261	9	3	12	3.74	0.74	Accept
9	Regular income	261	8	5	11	3.78	0.69	Accept
10	Support from members of religious group	261	8	4	12	3.77	0.72	Accept
11	Free access to basic healthcare	260	9	3	13	3.74	0.75	Accept
12	Support from family members	259	10	3	13	3.78	0.69	Accept
13	Poverty alleviation programmes for heads of female headed household	260	9	3	13	3.77	0.75	Accept
	Entrepreneurial skills available for heads of FHH							
14	Skill acquisition	254	10	7	14	3.76	0.72	Accept
15	Food service delivery	253	10	7	15	3.77	0.74	Accept
16	Preparation of refreshing drinks, e.g.; zobo and yoghurt etc.	251	11	9	14	3.75	0.73	Accept
17	Preparation of income yielding foods, e.g.; fish balls, cakes etc.	251	11	9	14	3.75	0.73	Accept
18	Pattern drafting using computer aided designs.	255	10	7	13	3.77	0.70	Accept
19	Pattern drafting using flat pattern method.	244	13	12	16	3.70	0.79	Accept
20	Electric sewing device operations	253	11	7	14	3.76	0.72	Accept
21	Sewing of simple garments	251	11	8	15	3.74	0.75	Accept
22	Sewing garments with advanced designs and pattern	249	13	9	14	3.74	0.74	Accept
23	Laundry services (using washing machine and iron etc.)	247	13	10	15	3.72	0.77	Accept
24	Decoration (interior and exterior)	246	13	11	17	3.71	0.78	Accept
25	Bead making	250	12	9	14	3.74	0.74	Accept
26	Production of home-made cleaning agents, homemade polish.	248	12	10	15	3.72	0.76	Accept
27	Floral designs e.g., macramé.	250	15	19	14	3.73	0.74	Accept
28	Child Development and Care	253	10	9	15	3.76	0.73	Accept
	Support from family members for FHH							
29	Financial support from family members	252	11	8	14	3.75	0.73	Accept
30	Spiritual support	246	13	10	16	3.72	0.78	Accept
31	Medical support	253	10	8	14	3.76	0.73	Accept
32	Domestic support	252	11	8	14	3.75	0.73	Accept
33	Academic support for paying of her children's school fees	249	11	10	15	3.73	0.76	Accept
34	Gardening	3	265	5	12	2.90	0.43	Reject

Test of hypotheses

$H0_1$: There is no significant difference between the mean responses of educational levels of female heads of households on the challenges of Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State.

Table 5 shows ANOVA Result of Difference between the Mean Responses of educational levels of staffs on the challenges of Female Headed Household (FHH) in Ikwuano Local Government Area of Abia State. $\overline{X}_1$ = mean responses of staffs with FLSC, $\overline{X}_2$ = mean responses of staff with WAEC, $\overline{X}_3$ = mean responses of staffs with OND, $\overline{X}_4$ = mean responses of staffs with HND/BSc, $\overline{X}_5$ = mean responses of staffs with MSc/PhD. The study revealed that from the Table 5 that all the items had significant difference except item 10 which is lack of regular income does not have significant difference.

Table 5: ANOVA Result of Difference between the Mean Responses of educational levels of staffs on the challenges of Female Headed Household.

S/No	Item statement	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$	$\bar{X}_5$	F ratio	Sig.	Remark
1	Economic insecurity	4.00	3.50	4.00	3.14	4.00	7.46	0.010	S
2	Lack of income earning opportunities	4.00	3.49	4.00	3.77	4.00	7.80	0.030	S
3	Poor social status	4.00	3.46	4.00	3.77	4.00	8.34	0.040	S
4	Lack of employment	4.00	3.53	4.00	3.77	4.00	7.48	0.003	S
5	Inadequate finances to run the family	4.00	3.56	4.00	3.77	4.00	6.17	0.001	S
6	Lack of respect by family members/society	4.00	3.53	4.00	3.77	4.00	6.82	0.000	S
7	Gender inequality	4.00	3.56	3.80	3.77	4.00	3.80	0.050	S
8	Difficulty in child raising	4.00	3.50	4.00	3.77	4.00	7.32	0.000	S
9	Lack of support from offspring	4.00	3.48	3.72	3.22	3.00	8.04	0.000	S
10	Lack of regular income	4.00	3.57	4.00	3.40	3.00	12.30	0.060	NS
11	Struggling to procure food	4.00	3.51	3.74	3.22	3.00	8.37	0.000	S
12	Poor access to basic healthcare	4.00	3.56	4.00	3.34	3.00	13.15	0.000	S
13	Loneliness	4.00	3.48	3.80	3.11	3.00	10.13	0.005	S
14	Poor nutrition	4.00	3.57	4.00	3.14	3.00	16.53	0.003	S
15	Lack of support from family members	4.00	3.52	3.74	3.42	3.00	7.09	0.002	S
16	Lack of community support	4.00	3.52	3.80	3.08	3.00	11.35	0.060	S
17	Lack of support from members of religious groups	4.00	3.50	4.00	3.77	3.33	7.04	0.007	S

$H0_2$: There is no significant difference between the mean responses of female heads of households' occupation on the copying strategies adopted in their households in Ikwuano Local Government Area of Abia State.

Table 6 shows ANOVA Result of Difference between the Mean Responses of different occupation on the coping strategies adopted in their households in Ikwuano Local Government Area of Abia State. $\bar{X}_1$ = mean responses of staffs with farming as occupation, $\bar{X}_2$ = mean responses of staff with petty trading as occupation, $\bar{X}_3$ = mean responses of staffs that are retiree, $\bar{X}_4$ = mean responses of staffs that are civil servants. Table 6 shows that all the items had significant difference except item 24 which is lack of regular income does not have significant difference.

Table 6: ANOVA Result of Difference between the Mean Responses of different occupation on the coping strategies adopted in their households.

S/No	Item Statement	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$	F RATIO	SIG.	Rark M
1	Provision of income earning opportunities by government	4.00	3.59	3.88	3.87	4.88	0.003	S
2	Subsistence farming	4.00	3.58	3.88	3.87	5.09	0.002	S
4	Daily or weekly contribution (Esusu)	4.00	3.65	3.88	3.80	3.74	0.012	S
5	Engaging in menial jobs	4.00	3.59	3.88	3.87	4.76	0.003	S
6	Gender equality	4.00	3.61	3.88	3.87	4.45	0.004	S

S/No	Item Statement	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$	F RATIO	SIG.	Rark M
7	Begging	4.00	3.68	3.88	3.87	3.22	0.023	S
8	Trading	4.00	3.62	3.88	3.87	4.29	0.006	S
9	Regular income	4.00	3.68	3.88	3.87	3.22	0.023	S
10	Support from members of religious group	4.00	3.65	3.89	3.87	3.74	0.012	S
11	Free access to basic healthcare	4.00	3.60	3.89	3.87	4.61	0.004	S
12	Support from family members	4.00	3.68	3.89	3.87	3.22	0.023	S
13	Poverty alleviation programmes for heads of female headed household	4.00	3.60	3.89	3.87	4.61	0.004	S
	Entrepreneurial skills available for heads of FHH							
14	Skill acquisition	4.00	3.68	3.89	3.87	3.22	0.023	S
15	Food service delivery	4.00	3.64	3.89	3.87	3.89	0.009	S
16	Preparation of refreshing drinks, e.g., zobo and yoghurt etc.	4.00	3.66	3.89	3.87	3.50	0.016	S
17	Preparation of income yielding foods, e.g., fish balls, cakes etc.	4.00	3.63	3.89	3.87	4.14	0.007	S
18	Pattern drafting using computer aided designs.	4.00	3.63	3.89	3.87	4.14	0.007	S
19	Pattern drafting using flat pattern method.	4.00	3.68	3.89	3.87	3.22	0.023	S
20	Electric sewing device operations	4.00	3.58	3.89	3.87	5.16	0.002	S
21	Sewing of simple garments	4.00	3.68	3.89	3.87	3.22	0.023	S
22	Sewing garments with advanced designs and pattern	4.00	3.65	3.89	3.87	3.74	0.012	S
23	Laundry services (using washing machine and iron etc.)	4.00	3.68	3.89	3.87	3.22	0.023	S
24	Gardening	4.00	3.60	3.89	3.87	4.61	0.060	NS
25	Decoration (interior and exterior)	4.00	3.68	3.89	3.87	3.22	0.023	S
26	Bead making	4.00	3.60	3.89	3.87	4.61	0.004	S
27	Production of homemade cleaning agents, homemade polish.	4.00	3.68	3.89	3.50	3.22	0.023	S
28	Floral designs e.g., macramé.	4.00	3.63	3.89	3.50	4.14	0.007	S
29	Child Development and Care	4.00	3.68	3.89	3.50	3.22	0.023	S
	Support from family members for FHH							
30	Financial support from family members	4.00	3.65	3.89	3.50	3.74	0.012	S
31	Spiritual support	4.00	3.68	3.88	3.50	3.22	0.023	S
32	Medical support	4.00	3.64	3.88	3.87	3.89	0.009	S
33	Domestic support	4.00	3.64	3.88	3.87	3.89	0.009	S
34	Academic support for paying of her children's school fees	4.00	3.65	3.89	3.87	3.26	0.022	S
35	Gardening	3.00	2.83	3.00	3.00	3.30	0.021	S

Major findings of the study

i. The respondents attested that the reasons for Female Headed Households (FHH) in Ikwuano Local Government Area of Abia State are as a result of widowhood, abandonment, divorce, migration and separation.

ii. The respondents agreed that the challenges of female headed household (FHH) In Ikwuano Local Government Area Of Abia State are economic insecurity, lack of income earning opportunities, poor social status, lack of employment, inadequate finances to run the family, lack of respect by family members/society, gender inequality , difficulty in child raising, lack of support from offspring , lack of regular income, struggling to procure food, poor access to basic healthcare and loneliness among many others.

iii. The respondents agreed that the coping strategies adopted by the heads of Female Headed Households (FHH) in managing their households are; involvement in daily or weekly contribution (esusu), engaging in menial jobs, gender equality, begging, trading, regular income, support from members of religious group, free access to basic healthcare, support from family members, poverty alleviation programmes for heads of female headed household, entrepreneurial skills available for heads of female headed households, skill acquisition, food service delivery, preparation of refreshing drinks, for example; zobo and yoghurt and son, preparation of income yielding foods, for example; fish balls, cakes and so on, and pattern drafting using computer aided designs just to mention but a few.

Conclusion

A female headed household is a household in which an adult female is the sole or main income producer and decision-maker. In most countries, women are not usually considered as heads of households unless no adult male is living permanently in the household. The study identified the reasons for Female Headed Households as widowhood, abandonment, divorce, migration and separation. The study investigated the challenges of Female Headed Household and found out that economic insecurity, lack of income earning opportunities, poor social status, lack of employment, inadequate finances to run the family, lack of respect by family members/society, gender inequality among many others are the challenges faced by female headed households. The study further identified the coping strategies adopted by the heads of Female Headed Households in managing their households in Ikwuano Local Government Area of Abia State as provision of income earning opportunities by government, subsistence farming, daily or weekly contribution (esusu), engaging in menial jobs, gender equality and alms begging.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Conferences, seminars and workshops should be periodically organized by communities and religious groups on how to cope with the challenges associated with Female Headed Household.
2. Government and community leaders should organize free seminars for heads of female households on how to manage their homes.
3. Government, rich individuals and religious groups should grant loans to heads of female headed households as form of financial assistance.

References

Asiazobor, C. C. (2013). The “feminisation of poverty” and the “feminisation” of anti-poverty programmes: Room for revision?. *The Journal of Development Studies, 44*(2), 165–197.

Batista, W.K. (2015). *The economic organisation of the household*. Cambridge: Cambridge University Press.

Bureau Of Statistics (2015). *Women in the third world: An encyclopedia of contemporary issues*. New York: Garland Publishing.

Chant H. M., (2013) The state of Female Headed Households in Kano. *Journal of Home management*. *41*(3), 270–280.

Cohen, L., Manion, L. & Marrison, K. (2013). *Research methods in education* (5th ed,) London: Routledge Falmer.

Folbre, C. N. (2014). *Rural Women’s Contribution to Food Security*. African Women’s Development Fund

Hedman, R. T., Agegre F. R., & Chant, S. (2015). *Female-household Headship and the Feminization of Poverty: Facts, Fiction and Forward Strategies*. Gender Institute, London School of Economics and Political Science, London.

Mullings, M. S., (2015).”Predicting Poverty: Methodological Issues and the PRSP Process in Kenya,” (with Mwabu and Manda), Chapter 2 in *Rural Livelihoods and Poverty Reduction Policies*.

Mwawuda, E. R. (2013). Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family, 66*(2), 351–367.

Ngwenya, D, P. (2013). *Rural Women, Food Security and Agricultural Cooperatives*. New Delhi: Wiley.

Nyamboga D. H., (2014). *The Effectiveness of Poverty Reduction Efforts in Kenya: An Evaluation of Kenyan Government’s Policy Initiatives on Poverty Alleviatio*n. International Affairs and Global Strategy www.iiste.org ISSN 2224-574X (Paper)

Okoya, O. O. (2016). Measuring inequality with asset indicators. *Journal of Population Economics, 18*(2), 229–260. http://dx.doi.org/ 10.1007/s00148-005-0224-7.

Okoye D, T., (2014). *Agricultural Dynamics and Food Security Trends in Kenya*. Developmental Regimes in Africa (DRA)

Ruwanpura, P. R., (2015). Children’s adjustment to divorce: Theories, hypotheses, and empirical support. *Journal of Marriage and the Family, 55*, 23-58.

United Nations (2014). Role of science and technology in the context of international security and disarmament -- Report of the First Committee. *Annual publication of United Nations*.

United Nations (2015). United Nations Sustainable Development Summit. *Annual publication of United Nations*.

Varley, W. B., (2013). Reducing teen out-of-wedlock births: The role of parental education and family stability. *The LaFollette Policy Report, 3*(2), 8-19. LaFollette Institute of Public Affairs, 1225 Observatory Drive, Madison.

Vera-Sanso, F. D. (2006). *Gender planning and development: Theory, practice and training*. New York: Routledge.

Verma L. S. (2013). Gender Awareness: The Missing Element in the Third World Development Project: In Tina Wallace and Candida March and (Eds.). *Changing Perception: Writings on Gender and Development*. Oxfam: Oxford, 149-57.

PEER-REVIEWED CONGRESS PAPER

Conceptualization of Filipino family wellbeing

Consuelo Chua, Florenda Gabriel, Joanne Bantang & Aurora Llige
University of the Philippines, the Philippines

Abstract

The definition of family wellbeing should be sensitive to the characteristics of a specific culture or population. Several studies have examined the conceptualization of family wellbeing among Western cultures. Yet, very little studies exist, if any, among Southeast Asian cultures. This qualitative study aimed to develop a conceptualization of Filipino Family Wellbeing. In-depth interviews were conducted among mothers or fathers of 63 Filipino families from low, middle, and high-income groups. The families came from different parts of Metro Manila (the capital city of the Philippines) and nearby rural areas. During the in-depth interviews, the respondents were asked to determine their definitions and descriptions of family wellbeing, identify the experiences that they associated with family wellbeing, and describe the characteristics of families with family wellbeing. The interview transcripts were analyzed using thematic analysis. To enhance the credibility of the study findings, interview transcripts were analyzed by at least three members of the research team. Eight dimensions of Filipino Family Wellbeing emerged from the analysis—Resource Adequacy, Comfortable Lifestyle, Financial Security and Stability, Good Family Relationships, Good Parenting, Good Health, Virtuous Family, and Family Satisfaction and Contentment. Specific indicators for each family wellbeing dimension were also identified based on the interview codes. A comparison of the research outcomes with existing literature showed that the Filipinos' concept of family wellbeing is similar in various ways with the conceptualizations of other populations. However, some indicators of Filipino family wellbeing were distinct from those found in other countries, such as the strong emphasis on providing the wants of children and leading a virtuous family life. Based on the peculiarities of the Filipinos' definition of family wellbeing, the study recommends the development of a family wellbeing measure that is suitable for Filipino families.

KEYWORDS: **FILIPINO FAMILIES; FAMILY WELLBEING; QUALITY OF LIFE; FAMILY FUNCTIONING; CONCEPTUALIZATION**

Introduction

The family is considered as the primary social institution for providing basic needs and care for its members. Family functioning is essential to a person's well-being and is considered the foundation of a good society. Everyone will agree that "families that function well support societies, and families with effective quality of life are seen as social resource" (Isaacs et al., 2007, p. 178). Given the critical role of the family, proper attention should be given to ensure its well-being.

Chua, C., Gabriel, F., Bantang, J., & Llige, A. (2022). Conceptualization of Filipino family wellbeing. *International Journal of Home Economics, 15*(2), 103-114.

Consuelo Chua ✉ cielo3chua@gmail.com

Collective well-being is composed of the shared interest and characteristics of individuals in community, ethnic, and cultural groups (King, 2007). This includes family well-being since it refers to both the well-being of its individual members and the relationship among them (Fahey, Keilthy, & Polek, 2012). Well-being includes how families are able to operate as members of the society (Braun & Bauer, 1997), as well as the ways they behave and socialize with others (Huppert, 2005 as cited in Camfield, Streuli, & Woodhead, 2009; Gough & McGregor, 2007).

While family wellbeing (FWB) plays a critical role in individual wellbeing, a clear and consistent conceptualization of family wellbeing is quite elusive (McGregor, 2020). There have been several initiatives to conceptualize family wellbeing, but most of these have Western origins (e.g., Baldwin, 1996; Isaacs et al., 2007; McGregor, 2020; Poston et.al, 2003). The dimensions of well-being, both objective and subjective, vary depending on personal, cultural, social, and geographic characteristics (Deiner & Scollon, 2014; Wish, 1986). This fluid nature of well-being entails the development of conceptualizations that are sensitive to the characteristics of a specific population, suggesting that Western conceptualizations of FWB are not necessarily applicable to non-Western countries. In fact, McGregor (2020) emphasized the need for future FWB conceptualizations to focus on other non-Western regions including Asia and Africa. In so doing, FWB conceptualizations could target the real meaning of family wellbeing for specific populations, which could lead to more meaningful programs and metrics that address salient dimensions of family living.

Similar to other Southeast Asian countries, studies on the conceptualization of family wellbeing in the Philippines is still at its early stage. The study of SyCip et al. (2000) is probably the most encompassing local study in the Philippines on well-being (translated to *magandang buhay*), but this study focused on individual wellbeing. At the family level, a conceptualization of Filipino wellbeing has not been located in literature. Although individual wellbeing and family wellbeing are related, these are two different concepts that merit separate conceptualizations. In fact, McGregor (2020) underscored the need to distinguish individual from family wellbeing "to ensure proper comprehension, and application in practice, education, policy, and research." (p. 3)

The Philippines, being a developing country, is home to 4,740,000 poor families (Mapa, 2021). Given this, home economists and social development practitioners face a great challenge in developing applicable programs and interventions that can effectively improve Filipino families' quality of life. A good starting point to address this challenge is to offer a clear conceptualization of FWB for Filipino families. Through this, programs and interventions could be more tailored to address the families' wellbeing needs. The desire to uplift the wellbeing of Filipino families, alongside the growing importance attributed to family well-being in different contexts, and the dearth of local understanding of Filipino FWB gave impetus to this study. This research sought to elucidate the Filipino perspective on the concept of family well-being. Using the study of Poston et.al. (2003) as an inspiration, this study aimed to develop a conceptualization of Filipino family wellbeing. Specifically, it aimed to determine the dimensions and indicators of family well-being based on the perspective of Filipino family members.

Methods and Materials

Participants

The study followed a qualitative research design in developing a conceptualization of Filipino FWB. The study participants included mothers (10) or fathers (53) of 63 Filipino families. Thirty-five of the families resided in different areas of Metro Manila, the capital of the Philippines, while 28 came from nearby rural areas including Bataan, Bulacan, Pampanga, and Rizal. Among the families, 19 were low-income, 32 were middle-income, and 12 were high-income. The participants' family size ranged from three to 12 members, with most families having less than six members. The number of children of the respondents ranged from zero to 10, with the majority having one to three children. The families belonged to different stages in the family life cycle. The occupation of the respondents was also varied. Most high-income participants were professionals or are business-owners while those from the low-income bracket were mostly skilled laborers, caretakers, housewives, or self-employed.

The families were purposively selected based on the following inclusion criteria: the family should 1) have at least one parent; 2) belong to either one of the three income levels; 3) have at least one child, and 4) have parents who are not more than 60 years old. The definition of a family by the Philippine Statistics Authority (PSA) was used in selecting participants. PSA defines a family as "a group of persons usually living together and composed of the head and other persons related to the head by blood, marriage or adoption. It includes both the nuclear and extended family" (Philippines, Statistics Authority, 2003). On the other hand, family income level was determined using the study of Albert et.al (2018) as a guide, with corresponding adjustments for inflation and the number of family members.

The families were recruited by approaching them in their neighborhoods and through referrals. The selection of new participants continued until data saturation was reached. The definition of data saturation provided by Fusch & Ness (2015) was used as a guide in determining whether data saturation has been achieved. According to Fusch and Ness, "Data saturation is reached when there is enough information to replicate the study when the ability to obtain additional new information has been attained, and when further coding is no longer feasible" (p. 1408). In the current study, the sample size of 63 participants was more than sufficient to satisfy data saturation, since after analyzing only 60% of the interview transcripts, key terms were already observed to constantly repeat with each additional analysis. At the same time, new codes of family wellbeing no longer emerged. The emergent themes were also observed to be similar across income status and respondent locale.

Instrument and Data Collection Procedures

Since an inductive approach was sought in developing a conceptualization of Filipino FWB, in-depth interviews were conducted to gather narratives about the meaning of family wellbeing for Filipinos. An open-ended interview questionnaire was used to gather data from the families. The study of Poston et. al. (2003) was used as a guide in writing the interview questions. The first part of the interview guide included questions about family wellbeing in general such as: 1) What things or experiences cross your mind when you hear the term family wellbeing? 2) Do you know a family who has family wellbeing? 3) What are the characteristics and experiences of this family? On the other hand, the second part of the interview guide involved more specific questions about the family wellbeing experiences of the individual families such as—1) Can you relay a time wherein your family experienced family wellbeing? 2) Can you describe what you experienced during this time? 3) Can you relay an instance that your family or a family that you know experienced family illbeing?

The interviews were conducted by six trained research assistants. Each research assistant attended an interviewer training session and was provided with an interviewer manual. The first set of data was collected through face-to-face interviews from February to early March 2020.

However, data collection was temporarily halted in mid-March of 2020 due to the COVID 19 Pandemic. Interviews resumed in August 2020, but the mode of the interview was modified from face-to-face to voice or video call due to the movement restrictions brought about by the ongoing pandemic.

In gathering interview data before the Pandemic, the research assistants visited the respective homes of target participants. They explained the nature of the study to them and requested for their informed consent to participate if they meet the study's selection criteria. Similar data collection procedures were followed during the pandemic; however, all communication was carried out through voice or video call and consent forms were accomplished electronically. The interviews lasted for approximately 30 to 45 minutes each. The participants received a simple token (e.g., eco bag, snack items) after each interview.

Data Analysis

The qualitative data that ensued from the interviews were analyzed using thematic analysis. To enhance the credibility of the study findings, interview transcripts were analyzed separately by at least three members of the research team. Each of the researchers individually coded the transcripts and identified family wellbeing categories that were common across the codes. Separate analyses were done for each income level (low, middle, high) and research locale (rural and urban). After their initial analysis, the researcher team met to compare the codes and categories that they generated from the transcripts. Upon comparison, the categories generated were found to be very similar across each individual analysis, and even across the three income levels and respondent locale. However, there were some variations on the labels that were used by the individual researchers. As such, another meeting was held to re-examine the categories and agree on the most appropriate category labels. After agreeing on the categories, the members of the research team recoded all 63 interview transcripts to double-check whether the data indeed matched the FWB categories that were generated. During the process of recoding, a few overlaps among the codes and categories were noted. Following this process, the research team met once again to refine the categories. This iterative data analysis process led to eight themes or dimensions of Filipino Family Wellbeing.

The next step involved identifying specific indicators for each FWB dimension. Each member of the research team separately identified specific indicators for each FWB dimension based on the interview codes. Subsequently, the research team met twice to agree on the indicators that appropriately describe each family wellbeing dimension.

Ethical Considerations

Ethical protocols were practiced all throughout the conduct of the research. Informed consent forms were secured from each willing participant. The details of the informed consent form such as voluntary participation, confidentiality, the benefits, and risks of participation were explained to the potential participants. The data obtained were handled carefully by the research team to ensure confidentiality.

Results

Throughout the iterative process of thematic analysis, eight dimensions of Filipino family wellbeing recurrently emerged—resource adequacy, comfortable lifestyle, financial security and stability, good health of family members, good family relationships, good parenting, virtuous family living, and family satisfaction and contentment. An illustration of the Filipino FWB dimensions is presented in Figure 1. The definition of each dimension and the common indicators encompassing each dimension are presented in Table 1.

Figure 1. Filipino Family Wellbeing Dimensions

Table 1. Dimensions and Indicators of Filipino Family Wellbeing

Filipino Family Wellbeing Dimensions *Definition*	**Indicators**
Resource Adequacy *This dimension pertains to the ability of the family to acquire or access basic needs such as food, clothing, shelter, health care, and education.*	1. Family has sufficient food to eat everyday 2. Family can send children to school 3. Family has access to medical and health needs 4. Family has sufficient resources to meet daily needs 5. Family members have adequate clothing 6. Family has as a decent and safe dwelling space
Comfortable Lifestyle *This dimension refers to the ability of the family to enjoy simple leisure and comforts of life and their capacity to choose or acquire things that they want.*	1. Family can provide the simple wishes of children 2. Family has choice over basic needs (e.g., choosing the food and clothing that they like) 3. Family can enjoy simple vacations, leisure activities, and simple luxuries 4. Family can afford to celebrate special occasions 5. Family members have sufficient time to rest and relax
Financial Security and Stability *This dimension refers to the regularity and stability of the family's income, their capacity to acquire assets, and their capacity to save and financially prepare for the future.*	1. Family has a regular and stable source of income 2. Family has financial resources to acquire assets 3. Family has enough savings for emergencies and future needs
Good Health of Family Members *This refers to the general health of family members.*	1. All family members are generally healthy 2. There is absence of long-term illness in the family
Good Family Relationships *This dimension refers to the positive, loving, and harmonious relationships among family members, family togetherness, and their capacity to support each other and solve internal problems.*	1. Family can solve internal problems and challenges 2. Family has a positive, loving, and harmonious relationship 3. Family is complete (not broken) 4. Family spends time together 5. Family members help each other 6. Family has positive communication 7. Family is happy as a whole

Filipino Family Wellbeing Dimensions *Definition*	**Indicators**
Good Parenting *This refers to the ability of the parents to raise morally upright children and provide the necessary guidance.*	1. Parents provide proper guidance to children 2. Parents serve as good role models to children 3. Parents are able to raise good children 4. Parents can enable children to finish their education
Virtuous Family Living *This refers to family members practicing sound moral values and having faith in God. This entails refraining from vices and engaging in charitable acts.*	1. The family has faith in God 2. The family practices good moral values
Family Satisfaction and Contentment *This refers to the general satisfaction that family members feel with their living standards.*	1. The family is satisfied with their standard of living 2. The family is contended with what they have

Note. This table took inspiration from the presentation of family wellbeing domains in the study of Poston et.al. (2003), p. 322

Resource adequacy

Resource adequacy pertains to the ability of the family to acquire or access sufficient basic needs such as food, clothing, shelter, and education. This points to the universal aspect of living a good life that starts with having adequate necessities to support a family's daily living and functioning. Resource adequacy is not necessarily akin to financial adequacy, since basic needs may be accessed through other means such as gifts or assistance from relatives, neighbors, and the government. One major indicator of this dimension is that the family should have sufficient food to eat every day. One respondent shared, "We get to eat enough throughout the day. Even though it is just adequate, at least we still eat."

Across the income groups, many noted the unwritten rule of having three meals a day. Although few specifically noted the importance of having rice in their diet, the respondents did not give a detailed description of the food they should eat, not even the quality and diversity of meals. Sufficiency is measured in terms of the required frequency of daily food intake. Another indicator of resource adequacy is sending children to school. Once again, the respondents did not give very specific requirements except to say that their children should go to a "good school." In general, they referred to the simple fact that their children can be formally educated as seen in the following response: "I can say that we have family well-being because I could send my child to a good school."

The family's access to medical and health needs emerged as another indicator of resource adequacy. Just like having sufficient meals every day, the respondents stated that having enough resources at hand to cover health-related expenses is important to family well-being. These resources for medical needs should be readily or easily accessible. These sentiments can be seen in the following response: "You have enough money for proper healthcare. If someone is sick, you have no trouble finding money to pay the doctor." Other indicators that emerged pertain to other basic needs such as clothing and shelter. They, once again, pointed out that there is no need for excess. These needs should be met at the minimum level where they can feel protected and safe. One responded pointed out, "The house should be comfortable and livable. It does not have to be luxurious. It's safe and clean."

Beyond addressing food, clothing, shelter, education, and health needs, a family should have other sufficient resources for running the household. Therefore, another indicator is having sufficient resources to meet other daily needs including paying for utilities and other bills. The respondents further described that sufficiency means not having to borrow money for basic needs.

Comfortable lifestyle

While resource adequacy pertains to acquiring the necessities where family members are adequately supported and family functioning is not impeded, comfortable lifestyle is focused on pleasures of life. This dimension refers to the ability of the family to enjoy simple leisure and comforts of life and their capacity to choose or acquire things that they want. Several indicators emerged under this dimension. The first and most prominent indicator is the ability of the family to provide for the simple wishes of the children as seen in the following response: "I can buy what my children want when there is extra money."

This indicator seems to be unique to Filipino FWB as it was not highlighted in other FWB studies. This study showed that for Filipinos, family wellbeing is closely linked to providing the simple desires of children. It is interesting to note that none of the respondents focused solely on their personal wants or wishes. Rather, they referred to the wants of their children or their entire family unit. This reflects the Filipino value of family-centeredness. In connection to this is another strong indicator which is having choice over basic needs (e.g., choosing the food and clothing that they like) of the family, such as this statement from one respondent, "We can buy what we want. We can eat what we want, even if it's expensive."

None of the respondents shared extravagant choices, but merely noted several things they wish to do that go beyond the basic level of needs. This capacity to choose simple wants is indicative of having a comfortable lifestyle. It allows the family to be more relaxed, knowing they have some extra resources to spend on simple luxuries. This is related to another indicator which is the family's ability to enjoy simple vacations and leisure activities. The family's ability to celebrate special occasions and spend time to rest and relax also emerged as indicators of this dimension. Celebrating as a family is a big part of the Filipino family culture. Oftentimes, this means inviting relatives and friends to join special occasions such as birthdays and Christmas.

Financial Security and Stability

Next to comfortable lifestyle, financial security and stability emerged as another salient dimension of Filipino FWB across all income strata and locale (urban or rural). Financial security and stability pertain to the regularity and stability of the family's income, their capacity to acquire assets, and their capacity to save and financially prepare for the future. In contrast to resource adequacy, family security and stability go beyond simply having sufficient resources or means to acquire basic daily needs. One prominent indicator of this dimension is income stability and regularity, which is seen as a means for families to either improve their living standards (for low-income families) or maintain their current standards of living (for high-income families). Related to having a stable source of income is the emphasis on having a good job or source of livelihood.

The capacity of the family to acquire assets also emerged as an indicator of this dimension. Particularly, the respondents placed strong importance on acquiring their own house and car. One respondent shared, "Yes, (we have family wellbeing) because we are slowly achieving our dream of owning a nice house and a car that we can use."

Another strong indicator of financial security and stability is the capacity to save for the future needs of the families and for emergency situations, especially healthcare needs. Having a secure emergency fund to rely on is essential for Filipino families, especially since the Philippines do not have adequate social services such as free healthcare and livable government pension benefits. One respondent mentioned, "To achieve family wellbeing, a family should have savings to rely on during emergencies."

Good Health of Family Members

Aside from resource and financial needs, the respondents across all income groups identified good health as one aspect of family well-being. This dimension refers to the general health of family members. Two indicators were identified for this dimension. The first indicator, "all family members are generally healthy" is about having good health and being able to maintain good health for all the members of the family. In the words of the respondent, the family should have "ability to prepare and provide for health". Good health for the respondents includes not only physical health but mental and emotional health as well ("not having emotional distress"). The second indicator pertains to the "absence of long-term illness in the family". This indicator refers to freedom from any sickness or incident that negatively impacts the health of the family members. This includes accidents as one respondent said that "accidents have a big effect on health". It also includes not having chronic diseases that lead to prolonged hospitalizations and perennial illnesses. Maintaining good health also indicates that healthy family members would be able to care for each other. One respondent said that: "When members are healthy, they are able to take care of the sick family." Moreover, there is also recognition that health translates into other aspects of well-being, thus, the axiom "health is wealth" mentioned by the respondents.

Good Family Relationships

Good family relationships emerged as another dominant dimension of family wellbeing. Good family relationship refers to the positive, loving, and harmonious relationships among family members. The most common expectations of respondents are simply being together peacefully, spending happy times after a day's work, and expressing love between couples and among family members. One respondent shared that there's family well-being when one "goes home to a happy family after work where family members—children and parents—share stories, talk to each other, laugh together, even sing together."

Many respondents simply say that the absence of fights or conflict already constitutes a good life. In fact, for many respondents, the economic aspect of FWB becomes insignificant if there is no harmony within the family. In the same manner, a conflictual relationship is seen as aggravating a family who already suffers financial inadequacy. As one respondent shared, "If the relationship is chaotic, there's always fighting; it's already bad that a family has nothing to eat so it is worse if on top of that, there's still fighting! A good life does not always pertain to having material goods, as long as the relationship is intact, [that is already a good life]".

This dimension even acknowledges that there can still be problems even if a family is living a good life; however, the key point is that the family members have the capacity to support each other and solve internal problems together. Synonymous to cooperation in solving problems is helping one another, especially in achieving their family goals. It is reflected in some of the responses, particularly among those in the low-income group, who believe that even if there is resource insufficiency, a good life can still be achieved. According to one respondent, "There's cooperation; no faulty-finding if problems arise, instead, they will find a solution to whatever problem the family encounters."

Good Parenting

Similar to the previous dimension, good parenting is another indicator that is grounded on the social and relational aspects of well-being. This dimension refers to the ability of the parents to be good role models to their children, to raise morally upright children, and provide the necessary guidance for their children to finish their education. Good parenting is an equally important responsibility of parents, perhaps more so than providing children with sufficient resources. It is usual for Filipino families to say that good parenting, which results in having good children can compensate for the lack of financial stability or security of a family. It can be observed, however, that the success indicators of raising children well slightly differ according to the income class. For the low- and middle-income families, raising children well means that the children have finished schooling that promises a stable career and are doing well financially. A respondent shared, “I tell you that it is not only financial success that suggests a good life; when I was able to support my children until they finish schooling, I can already say that we already have a good life.”

On the other hand, for high income families, raising children well means exhibiting good behavior or breeding—an indigenous concept articulated to mean having a good social background and good manners. As mentioned by one respondent, “You can see that the kids have breeding; not problematic.”

Virtuous Family Life

This dimension elucidates further what it means to have a good family relationship and good or well-behaved children. It appears that being good parents and having a good family relationship are outcomes of practicing a virtuous life. It is differentiated from the other dimensions by anchoring the basis of virtue to faith in God and is practiced through sound moral values, refraining from vices, and engaging in charitable acts. Living a virtuous life does not necessarily mean devout practice—it is sufficient that they believe and hope in God and that belief is lived. This is not surprising since Filipinos are known for their religiosity and majority are believers in God or a Supreme Being. Many respondents resonate with this statement, “for me, the number one indicator of a good life is the family’s belief in God.”

Family Satisfaction and Contentment

This dimension of family well-being refers to the general satisfaction that family members feel with their living standards. This dimension is most noticeable among low-income and middle-income families and less among the high-income ones. The first indicator for this dimension—“the family is satisfied with their standard of living”—indicates a feeling that the family has enough for the kind of life that they want. As one respondent puts it “we are satisfied that we are doing okay”. The second indicator refers to the family’s “contentment with what they have”. Family well-being is not determined by mere acquisition of wealth and extravagant living but in having sufficient resources for their wants. One respondent said, “we are not looking for more material things, but just what’s right; we do not need a car, we can still travel”.

Discussion

This study is the first attempt to develop a conceptualization of Filipino FWB and develop dimensions and indicators that distinctly describe the construct. Previous studies, mostly Western in origin, developed conceptualizations of FWB based on an analysis of related literature rather than from the perspectives of real families. For instance, an early attempt by home economists looked into a conceptualization of FWB based on the critical science paradigm composed of three aspects of human interest—technical action and the material dimension, communicative action, and the practical-moral dimension, and power and the emancipative dimension (Baldwin, 1996) but did not propose a definition nor dimensions of the concept. On the other hand, a more recent conceptualization of family well-being was proposed by McGregor (2020), which comprised eight dimensions. There were studies that developed conceptualizations of family quality of life based on interviews of family members or individuals (e.g., IHC, New Zealand, 2016, Poston et. al, 2003) or consultations with various stakeholders (Isaacs, et.al., 2007), but the focus was more on the conceptualization of family quality of life for families with a disabled member.

This study revealed that the Filipino's concept of family wellbeing can be captured in terms of eight dimensions—resource adequacy, comfortable lifestyle, financial security and stability, good health of family members, good family relationships, good parenting, virtuous family living, and family satisfaction and contentment. Some of the dimensions (resource adequacy, comfortable lifestyle, financial security and stability, good health of family members, good family relationships, virtuous family living) are similar to the dimensions found in other studies, however, the indicators have some distinctions. A comparison of the family quality of life or FWB domains that emerged from Western studies and the current study point to certain peculiarities with the way Filipinos perceive FWB.

First, it can be noted that "resource adequacy" and "comfortable lifestyle" dimensions echo other attempts at understanding well-being and its dimensions. This is mainly because these two describe fundamental human needs that will allow them to function and flourish (Gasper, 2007; Ventegodt, Merrick, & Andersen, 2003). However, the indicators of resource adequacy (e.g., access to basic needs, healthcare, and basic education) are commonly included under financial wellbeing in other studies (e.g., Poston, et.al, 2003). Yet, in the present study resource adequacy comprise a separate dimension because Filipino families, especially from low-income groups, do not view access to resources solely from a financial perspective. Resource adequacy could be obtained through other means such as government aid, assistance (in kind or in cash) from other people, or readily available resources in one's community. It should be noted that the perspective of Filipinos on what constitutes sufficient resources is anchored on the general standard of living in the Philippines, which may not be globally accepted.

Second, some indicators of "a comfortable lifestyle" such as leisure and recreation were also evident in other family wellbeing conceptualizations (e.g., Isaacs, et.al., 2007; Poston, et. al, 2003), but one prominent indicator in the current study (satisfying the simple wishes of children) is unique to the Filipino concept of FWB. This captures the primary importance that Filipino families give to their children and validates an earlier study by Dy & Chua (2020), saying that one major source of happiness for Filipinos is providing for the needs and wants of their children.

Third, while parenting was a domain that was similarly found in the study of Poston, et.al. (2003) albeit not in other conceptualizations, one distinct emphasis of good parenting in the Filipino FWB sense is the ability to put children through school, specifically finish college education. This peculiarity validates the priority given by Filipino families to education. Filipino parents give primary importance to education and consider education "as one of the most important legacies they can impart to their children (Maligalig, et.al, 2010, p. 1)." They view education as a ticket to a good future and a way out of poverty (Maligalig, 2010).

Fourth, while the dimension, virtuous family living, was similar in a sense to the dimension of "spiritual health" of McGregor (2020) that considers having a relationship with a deity (for Filipinos, God in particular) and "influence of values" by Isaacs, et.al. (2007) that considers the utilization of values to guide life, "virtuous family living" also emphasizes living a virtuous life that is free from immoral acts and vices. The importance of helping others and giving to charity was also a salient indicator of this dimension.

Finally, the dimension "family satisfaction and contentment" was not evident in other family wellbeing conceptualizations, making this distinct to Filipino FWB. This dimension substantiates an earlier finding that Filipino families, particularly low-income families, find happiness by being content with whatever they have and the simple provisions from God (Dy & Chua, 2020). In the current study, many Filipino families signified being satisfied with a simple life and keeping the family together. The respondents mentioned the importance of family contentment, without necessarily having an abundance of material resources. For Filipinos, FWB may still be achieved, even if resources are limited, as long as the family is satisfied and content.

Conclusion and Recommendations

This study developed a conceptualization of Filipino family wellbeing based on the perspectives of individual family members. Filipino FWB can be described in terms of eight dimensions—resource adequacy, comfortable lifestyle, financial security and stability, good health of family members, good family relationships, good parenting, virtuous family living, and family satisfaction and contentment. Most of these dimensions have similarities with earlier conceptualizations of FWB, however, the indicators that describe these dimensions have certain distinctions, indicating that there are peculiarities with how Filipinos assign meaning to FWB. Of particular interest is the importance given to providing the simple wishes of children, which was a salient dimension of a comfortable lifestyle. Another distinction is the value given to supporting children through college, which was an indicator of good parenting. One unique dimension that emerged, family contentment and satisfaction, was not evident in other FWB conceptualizations. This captures the notion of Filipinos that FWB is achievable so long as the family is happy and content.

This study has certain limitations that may be addressed by succeeding research. First, although the sample included families from rural and urban areas, only rural areas near the capital city was included. There is a possibility that families in remote rural areas have conceptions of FWB that were not captured in this study. Future studies may consider gathering the perspectives of families from other geographic areas in the Philippines that were not part of the study. Second, member checking was not implemented due to the time lapse between data collection and analysis that was caused by the ongoing pandemic. Although, this limitation was mitigated by recoding the interview transcripts after the initial round of conceptualization, future studies would benefit from conducting a member check of emerging dimensions to further strengthen the validity of the FWB conceptualization.

Finally, since the study showed that Filipino FWB has its peculiarities, the development of a family wellbeing measure that is suitable for Filipino families is recommended.

Acknowledgement

This study was funded by the Office of the Vice-Chancellor for Research and Development, University of the Philippines, Diliman.

References

Albert, J.R.G., Santos, A.G.F., & Vizmanos, J.F.A. (2018, December). Defining and profiling the middle class. *PIDS Policy Notes*. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn1818.pdf

Armstrong, M.I., Birnie-Lefcovitch, S. & Ungar, M.T. (2005). Pathways between social support, family well-being, quality of parenting, and child resilience: What we know. *Journal of Child and Family Studies,14*, 269–281. https://doi.org/10.1007/s10826-005-5054-4

Baldwin, E. (1996). Family well-being: A conceptualization guide to professional practice. *Toward a Theory of Family Well-being*. (pp. 5-14). Kappa Omicron Nu Honor Society. https://www.kon.org/family_well-being_1.pdf

Braun, B., & Bauer, J. (1997, June). From welfare to well-being: A framework for dialogue and action. in M. Henry, D. Mistifer, & F. Smith (Eds.), *Toward a Theory of Family Wellbeing II*. (pp. 60-64). Kappa Omicron Nu Honor Society. https://www.kon.org/family_well-being_2.pdf

Camfield, L., Streuli, N., & Woodhead, M. (2009). What's the use of 'well-being' in contexts of child poverty? Approaches to research, monitoring and children's participation. *International Journal of Children's Rights, 17*, 65-109. https://doi.org/10.1163/157181808X357330.

Diener, E., & Scollon, C. N. (2014). The What, Why, When, and How of Teaching the Science of Subjective Well-Being. *Teaching of Psychology, 41*(2), 175–183. https://doi.org/10.1177/0098628314530346

Dy, KD.K. & Chua, C.T. (2020). Happiness among urban poor Filipino families. *IAFOR Journal of Psychology and the Behavioral Sciences, 6* (1), 3-14. https://doi.org/10.22492/ijpbs.6.1.01

Fahey, T., Keilthy, P., & Polek, E. (2012). *Family relationships and family well-being: A study of families of nine year-olds in Ireland*. University College Dublin and the Family Support Agency. https://onefamily.ie/wp-content/uploads/2016/07/Family_ Relationships_and_Family_Well-Being_Dec_2012.pdf

Fusch, P. I., & Ness, L. R. (2015). Are We There Yet? Data Saturation in Qualitative Research. *The Qualitative Report, 20*(9), 1408-1416. https://doi.org/10.46743/2160-3715/2015.2281

Gasper, D. (2007). *Conceptualising human needs and wellbeing*. https://repub.eur.nl/pub/50678/metis_168753 .pdf

Gough, I., & McGregor, J. (2007). *Wellbeing in developing countries: From theory to research*. Cambridge University Press. http://assets.cambridge.org/97805218/57512/f rontmatter/9780521857512_frontmatter.pdf

IHC New Zealand. (2016, April). *What's important for family wellbeing*. What's important for family well-being_7May2016_0.pdf (ihc.org.nz)

Isaacs, B. J., Brown, I., Brown, R. I., Baum, N., Myerscough, T., Neikrug, S., … Wang, M. (2007). The international family quality of life project: Goals and description of a survey tool. *Journal of Policy and Practice in Intellectual Disabilities, 4*(3), 177–185. https://doi.org/10.1111/J.1741-1130.2007.00116.X

King, P. (2007, March). *The concept of wellbeing and its application in a study of ageing in Aotearoa New Zealand*. (EWAS Working Paper Series No. 8). http://www.ewas.net.nz/Publications/filesEW AS/Conceptualising%20wellbeing.pdf

Maligalig, D.S., Caoli-Rodriguez, R.B., Martinez, A. & Cuevas, S. (2010, May). *Education outcomes in the Philippines*. (ADB Economics Working Paper Series No. 199). https://www.adb.org/sites/default/files/publi cation/28409/economics-wp199.pdf

Mapa, D.S. (2021, December 17). *Proportion of poor Filipinos registered at 23.7 percent in the first semester of 2021*. Philippine Statistics Authority. https://psa.gov.ph/poverty-press-r eleases/nid/165535

McGregor, S. L.T. (2020, May). *Conceptualizing family well-being*. (McGregor Monograph Series 202001). Seabright, NS: McGregor Consulting Group. www.consultmcgregor.com

Philippine Statistics Authority (2003, October). *Approving and adopting the official concepts and definitions for statistical purposes of the selected: Prices, population, housing, and tourism*. (NSCB Resolution No. 11 Series of 2003) https://psa.gov.ph/article/nscb-executive-board-resolution-no-11-approving-and-adopting-official-concepts-and

Poston, D.J., Turnbull, A.P., Park, J., Mannan, H., Marquis, J., & Wang, M. (2003). Family quality of life: a qualitative inquiry. *Mental Retardation, 41* 5, 313-28. https://doi.org/10.1352/0047-6765(2003)41<313:FQOLAQ>2.0.CO;2

SyCip, L.Y., Asis, M.B., & Luna, E. M. (2000). *The measurement of well-being: Technical report*. University of the Philippines Center for Integrative and Development Studies.

Ventegodt, S., Merrick, J., & Andersen, N. J. (2003). Quality of life theory III. Maslow revisited. *The Scientific World Journal, 3*, 1050-1057. https://doi.org/10.1100/tsw.2003.84 Wish, N. B. (1986). Are We Really Measuring the Quality of Life? Well-Being Has

Subjective Dimensions, As Well As Objective Ones. *American Journal of Economics and Sociology, 45*, 93-99. https://doi.org/10.1111/j.1536-7150.1986.tb01906.x

Wollny, I., Apps, J., Henricson, C. (2010) Can *Government measure family wellbeing? A literature review*. London: Family and Parenting Institute. https://www.familyandchildcaretrust.org/sites /default/files/Resource%20Library/Can%20 Government%20measure%20Family%20Wellbeing %20%282010%29.pdf

Peer-Reviewed Congress Paper

Correlating figure types and garment preferences towards sustainable psycho-social and general wellbeing of female undergraduate students of federal universities in South East, Nigeria

Stella Ozougwu & Amarachi Ekeowa

Abstract

The survey study determined relationship between figure types and garment preferences towards psychosocial and general well-being of female undergraduate students of Federal Universities in South East, Nigeria. Study population comprised female undergraduates from five Federal Universities in the study area. About 300 participants selected through purposive and random sampling responded to questionnaire items dealing with respondents' personal data and clothing preference variables. Using anthropometric measurements, subjects' body mass index (BMI) was categorised into underweight, normal, overweight and obese, and further for adiposity, into straight/banana, pear, hour glass/perfect, and apple figure types following body measurement guide (BMG). Clothing preferences were determined based on respondents' frequency of utilization of fabrics with design elements of line, colour, shape, texture; garments' styles, and fits. Data generated were analyzed with descriptive statistics (percentages, mean, and Pearson's product moment correlation coefficient). Significant relationships were established with chi square (X2) using Statistical Package for Service Solutions (SPSS) version 21. Findings include: About 5.3% of the subjects' BMI were underweight, 57.7% were normal, 26.0% were overweight and 11.0% were obese. About 14.3% subjects with normal BMI were found to be in hour glass/perfect figure category. The overweight, obese and underweight subjects possess pear (53.7%), apple (11.0 %), and straight/banana (23.7%) figure types respectively. There were no significant relationships (P>0.05) between subjects' figure types and their clothing preferences in fabric design elements of; line (p = 0.091), colour (p = 0.73), shape (p = 0.45), texture (p = 0.31), space (p = 0.10) and garment styles (p = 0.35) and fits (p = 0.91) at 0.05 level of significance. Much emphasis should be focussed more on selecting becoming clothes for the figure irrespective of type considering design elements and garment fits rather than focusing on using life destructive figure manipulation and alteration techniques, drugs and devices. Thus, regular orientations on clothing norms for female students especially freshmen on campuses are imminent.

Keywords: **Figure type, Clothing preferences, Design elements, Well-being, Female undergraduates**

Introduction

A feature of every being is its shape or form. Human shapes vary depending on sex, muscle and fat distribution which significantly correlate with food habits, sex hormone profile, and activity

Ozougwu, S., & Ekeowa A. (2022). Correlating figure types and garment preferences towards sustainable psycho-social and general wellbeing of female undergraduate students of federal universities in South East, Nigeria. *International Journal of Home Economics, 15*(2), 115-128.

Stella Ozougwu ✉ ekeowaamarachi@gmail.com

levels. Figure is a term usually associated with females' body shape or form. The bust, waist, and hips also known as the inflection points and the ratios of their circumferences are used to define basic figure types using anthropometric measurements and following body measurement guide (BMG). Anthropometry is the study of the measurement of the human body in terms of dimensions of bone, muscle, and adiposity or fat deposits.

Female figures have been variously categorized by different authors (Vulker & Cooper, 1987; Olaitan and Mba 1991; Spenser, 1998; Anyakoha & Eluwa, 1999) but those of McCormack, (2005) adopted in this study include; banana/straight, pear, apple and hourglass figures. Apple shaped figures have broader shoulders compared to their narrower hips. They have slim legs/thighs, while the abdomen and chest look larger compared to the rest of the body. Fat is mainly distributed in the abdomen, chest, and face. In banana, straight, or rectangular figure, the waist measurement is less than 9 inches smaller than the hips and bust measurements. Body fat is distributed predominantly in the abdomen, buttocks, chest, and face. This overall fat distribution creates the typical ruler (straight) shape. The hip measurement is greater than the bust measurement in the pear or spoon figure type. The distribution of fat varies with fat tending to deposit first in the buttocks, hips, and thighs. As body fat percentage increases, an increasing proportion of body fat is distributed around the waist and upper abdomen. The women of this body type tend to have a (relatively) larger rear, thicker thighs, and a smaller bosom. The hourglass has the hip and bust almost equal in size with a narrow waist. Body fat distribution tends to be around both the upper and lower body. This figure type enlarges the arms, chest, hips, and rear before other parts, such as the waist and upper abdomen (Mc Cormack, 2005).

Fashion professionals agree that ideal, average or perfect figure has the hip and bust almost equal in size with a difference of 9–11 inches between the waist and bust/ hip thus producing a figure "8", X or "hourglass" shape (Olaitan and Mba, 1991; Igbo and Iloeje, 2015). Thus, the pear, apple, and straight or banana figure types were perceived as not ideal. Worst still, protruding derriere, heavy and extra-large hips, small busts, knock knees and bow legs create more serious problems.

Though what constitutes an ideal or preferred female figure has varied over time and continues to vary among cultures, a preference for a small waist has remained fairly constant throughout history (Khansi, 2007). Females' tiny waists have been perceived as a sign of good health, fertility, social status, physical attractiveness and sexual pleasure, (Singh, 2000; Barford, 2012). In recent times, much emphasis is placed on figure and appearance by young females worldwide, specifically among Nigerian female youths. The quest to appear the most beautiful legend as Miss; State, Nigeria, Africa, World among others during fashion and beauty contests have led many to seek various means of achieving perfect figure. Often, activities ranging from minor to rigorous exercises, assorted Ketogenic and fad diets and other more life risking plastic and cosmetic surgeries, silicone implants and other artificial devices have been adopted either to increase or decrease body parts such as bust, hips, thighs and bottom to correct figure faults or achieve perfect figure to present flattering and attractive looks but without success. Unfortunately, such measures often predispose such individuals not only to psychological problems but health challenges and untimely death. They fail to understand that the secret to a pleasing and attractive appearance lies in the ability to understand self-figure type and to select clothes that flatter or call attention to attractive parts, conceal or camouflage the bad ones through careful consideration of design elements and garment fit.

Design elements are the building blocks used by designers to create good and pleasing designs. Design elements are also important for wearers to create illusions that can reshape the body to achieve beautiful looks by emphasizing, enlarging, and minimizing, concealing or camouflaging figure faults. They include colour, line, shape/form, space and texture. Colour communicates mood. For instance, bright colours (red, orange, yellow, pink) create illusions of warmness and make wearers appear cheerful and also increase the apparent size of figure or objects. Dark colours such as blues and greens are cool and create illusion of calmness, seriousness or mourning (black), and make figure or objects smaller. Line is a thin narrow mark. It influences eye movement to establish shape and form mood. Structural lines in clothing formed by seams, darts, edges or folds in garment form the silhouette and create illusions. Vertical lines go up and down in a fabric or garment, create illusion of tallness or slenderness and make figure appear taller or thinner and so looks better on fat figures. Horizontal lines go across and tend to make objects or figures fatter, wider, bulkier or shorter (Marshal et al, 2000) and so look better on slim or thin figures. Curved lines such as circles and closed lines stop the eyes, add softness and make a person appear shorter and rounded. Texture determines how a fabric feels, looks and moves when it is worn. It can be soft or crisp, smooth or nubby, dull or shinny (Marshal et al, 2000). Soft or clingy fabrics hug the body and emphasize any irregularities while nubby fabrics add dimension and can make one appear larger. Shinny fabrics reflect light and give impression of added size. The form of a garment is its overall shape; natural, tubular, bell and full shapes. The application of form depends on the shape of the human body itself, the external shape or silhouette of the garment and the outline of the figure. A design or figure is beautiful when there is a relationship among these three features (Johnson and Foster, 1990) and one's clothing is able to camouflage figure faults and add graceful look. Space is the area inside and between a garment. Narrow spaces cause the eyes to move side by side along the width of the space. Too much spaces within a garment make the wearer look like a blob with very uninteresting appearance. It is imperative that individuals gain consciousness of particular figure types possessed to appropriately select becoming clothes to conceal or camouflage whatever fault so as to look beautiful, acceptable and attractive irrespective of figure faults. This cannot be achieved without due consideration of design elements in garment selection Kwon (1991), reiterated that clothing and appearance is a way of expressing who one is, and its practices can be used to boost one's self-concept, appearance, behaviours and general wellbeing.

Well-being includes the presence of positive emotions and moods (contentment, happiness), the absence of negative emotions (depression, anxiety) satisfaction with life, fulfilment and positive functioning (Diener, 2000; Frey & Stutzer 2002;). Different aspects of well-being have been identified; physical, economic, social, development and activity, emotional, life satisfaction, domain specific satisfaction and engaging activities and work and psychological well-being (Frey & Stutzer 2002; Keyes, 2002). Studies show that there is a positive correlation between an individual's clothing and appearance which influence greatly his or her psychosocial wellbeing; lifestyle, self-concept and image, likes and dislikes, body, self-esteem, self-expression, personality, body, and mood (Francis, 2011). An individual's clothes should therefore fit properly. Essential for good fit is the correct ease, "the difference between the size of the garment and the size of the wearer" (Huck, Maganga & Kim, 1994). Properly fitted garment makes for comfort and confidence of the wearer. Conversely, improper fitted garments create a problem for the wearer. Too loose clothes appear unattractive, lack quality, often depicting comical and pathetic characters (Marshal, Jackson, Stanley, kefgen and Touchie-specht, 2000) and too tight clothes reveal body contours, hinder proper blood circulation, cause disciplinary problems, are sexually provocative, erotic, and induce sexual harassment and rape.

Various studies have been conducted on the relationship between body image, clothing perceptions and fashion (Shwet and Otieno, 2013; Arooj, 2019; Francis, 2011) using qualitative ethnographic approaches. Various studies have also been done on effects of design elements on garments (Gbetodeme, Amankwa, & Dzegbloor, 2016; Siaw, Kermeror & Dzramedo. 2014). Such studies failed to address if garment consumers consider such design elements in selecting garments that suit their figure types. This is the focus of the present study.

Purpose of the Study

The main purpose of the study was to determine the relationship between figure types and garment preferences towards the psychosocial and general well-being of female undergraduate students of Federal Universities in South East Zone, Nigeria.

Specifically, the study sought to determine the:

- body mass index (BMI) of female undergraduate students of Federal Universities in South East, Nigeria.
- figure types of female undergraduate students of Federal Universities in South East, Nigeria.
- garment fabric design preferences of female undergraduate students of Federal Universities in South East, Nigeria.
- garment styles and fit preferences of female undergraduate students of Federal Universities in South East, Nigeria.

Research Questions

The following research questions guided the study:

- What are the body mass indexes (BMI) of female undergraduate students of Federal Universities in South East, Nigeria?
- What are the figure types of female undergraduate students of Federal Universities in South East, Nigeria?
- What are the garment fabric design preferences of female undergraduate students of Federal Universities in South East, Nigeria.
- What are the garment styles and fit preferences of female undergraduate students of Federal Universities in South East, Nigeria?

Hypotheses

Two hypotheses guided the study:

HO_1: There are no significant relationships between figure types and fabric design preferences of female undergraduate students of Federal Universities in South East, Nigeria

HO_2: There are no significant relationships between figure types and garment styles and fits preferences of female undergraduate students of Federal Universities in South East, Nigeria

Methodology

The study adopted a cross sectional survey design to carry out the study in Federal University in South East Nigeria. Five Federal Universities are located in each of the five states in the zone. They include, University of Nigeria, Nsukka, Enugu State, Nnamdi Azikiwe university, Awka, Anambra State, Micheal Okpala University of Agriculture, Umudike, Abia State, University of Ndikerionwu, Ebonyi State, Federal Univerversity of Technology, Owerri (FUTO). The study population comprised all the female undergraduate students of the five Universities from which a sample of 300 participants were selected using purposive and random sampling techniques.

Structured validated questionnaire developed from review of related literature was used for data collection. The questionnaire comprised three sections. Section A elicited personal data characteristics of the respondents. Sections B and C dealt with clothing preferences and anthropometric assessment of their BMI and figure types.

Anthropometry

The anthropometric measurements were carried out to ascertain the height, weight, waist and hip circumference, mid-upper arm circumference and chest/bust circumference. The Subjects were made to stand on a smooth platform without foot wear, feet parallel to each other with arms by the sides and head erect. A non-stretch pliable measuring tape calibrated in centimetre (cm) was used to take the reading to the nearest 0.1cm and converted to metre (m) by dividing by 100. The respondent's weight was obtained using a bathroom scale that was placed on a firm horizontal surface and the respondents standing on the scale without foot wear. They were made to be on light clothes and no heavy jewelleries. Each respondent had to stand erect on the scale with arms on each side (left and right hand) and head erect. The readings were taken to the nearest 0.1kg. The respondents' body mass indexes (BMI) were determined using the formula: BMI = Kilogram per meter square (KG/M2). The waist circumference was taken on the natural waist line with string tied round at one inch above the navel round the waist with the subject standing erect and abdominal muscles relaxed, Tape was held snugly and readings taken to the nearest 0.1cm and recorded. The hip circumference was recorded as the measurement of the greatest point circumference around the hip region (7½ inches down from waistline) with the subject standing erect, feet together, without heavy clothes and empty pocket. The tape was tightened to make close contact with the body but without indenting the soft tissues. The bust circumference was taken on the fullest part of the bust round the back to front. The tape measure was tightened allowing a space of one finger inside and held securely. The reading was taken. The mid upper arm was measured with the hand hanging freely, the tape measure was placed on the left or right upper arm midway between the acromion process (bony tip) of the scapula and the olecranon process (the point of the elbow), reading was taken to the nearest 0.1cm and recorded. After getting the anthropometric measurements, the other body shape measurements were taken using the four major body shapes calculator by calculator.

Data Analysis

Data were analyzed with descriptive statistics using Statistical Package for Service Solution version 22. Chi-square (X^2) was used to test null hypotheses on the relationship between figure types and clothing preferences, and accepted at 0.05 probability level.

Results

Table 1 shows the background data of the subjects. Majority of the subjects (67.7%) were within the ages of 21–25 years. Data on marital status of the subjects showed that 94.7% were single while 5.3% were married. For the ethnic group of the subjects, respondents from Igbo ethnic group had the highest percentage (89.0) while Hausa had the lowest percentage (0.3) respectively. However, 99.3% of the subjects were Christians and 0.7% was Muslims.

Table 1: Background information of the respondents

Demographic	Factors	Frequency	Percentage
Age (in years)	16 – 20	58	19.3
	21 – 25	203	67.7
	26 – 30	35	11.7
	31 – 35	3	1.0
	36 and above	1	.3
	Total	**300**	**100.0**
Marital status	Single	284	94.7

Demographic	Factors	Frequency	Percentage
	Married	16	5.3
	Total	**300**	**100**
Ethnic group	Igbo	267	89.0
	Hausa	1	0.3
	Yoruba	10	3.3
	Others	22	7.3
	Total	**300**	**100.0**
Religion	Christianity	298	99.3
	Islamic	2	.7
	Total	**300**	**100.0**

Research question 1: What are the body mass indexes (BMI) of female undergraduate students of Federal Universities in South East, Nigeria?

Table 2: Body mass index (BMI) of Female Undergraduate Students of Federal Universities in South East Zone, Nigeria *N* = 300

Body mass index	Bdy wt in Kg/height m^2	Frequency	Percent
Underweight	Less than (≤)18.5	16	5.3
Normal	Between 18.5 and 24.9	173	57.7
Overweight	Between 25.0 and 29.9	78	26.0
Obese	More than (≥) 30	33	11.0
Total		**300**	**100.0**

The BMI of the subjects on Table 2 showed that those categorized as normal had the highest percentage (57.7%) while others were overweight (26.0%) obese (11.0%) and underweight (5.3%), respectively.

Research question 2: What are the figure types of female undergraduate students of Federal Universities in South East, Nigeria?

Figure 1 shows the different figure types of the subjects. The table shows that majority of the subjects (51.3%) were pear shaped, 23.3% were straight/banana shaped and 14.4% were hourglass shaped. However only (11.0%) of the subjects were apple shaped.

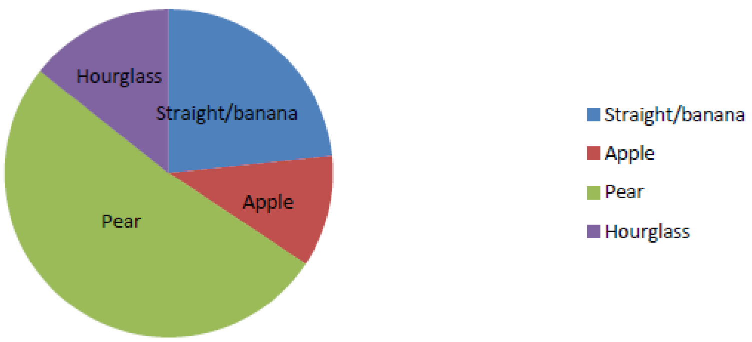
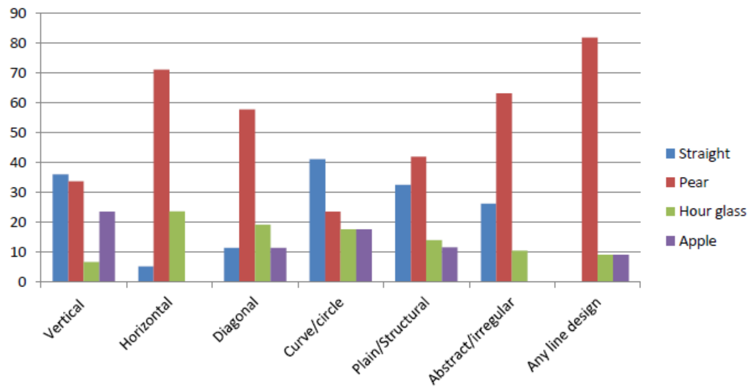


Figure 1: Figure types Female Undergraduate Students of Federal Universities in South East, Nigeria *N* = 300

Research question 3: What are the fabric design elements preferences of female undergraduate students of Federal Universities in South East, Nigeria. Figures 2, 3, 4, 5 and 6 will answer the research question

Figure 2 shows data on fabric design element of line preferences across the different figure types. It shows that straight or banana figures have the highest preferences for vertical line (36.0%), while the hour glass figures (6.7%) were the least that preferred vertical line garment consumption. The pear figures scored highest on horizontal line (71.1%) and in diagonal (57.7%), plain/structural (41.9%), Abstract or irregular lines (63.2%) as well as in utilizing any line fabric design (81.1%) in garment utilization. Straight figures totally reject any line design (0.0%) indicating they are selective in their choices of lines in fabrics.



Note: Design Elements of Line 1: *N* = 300 (X^2 = 50.335 P = 0.091)

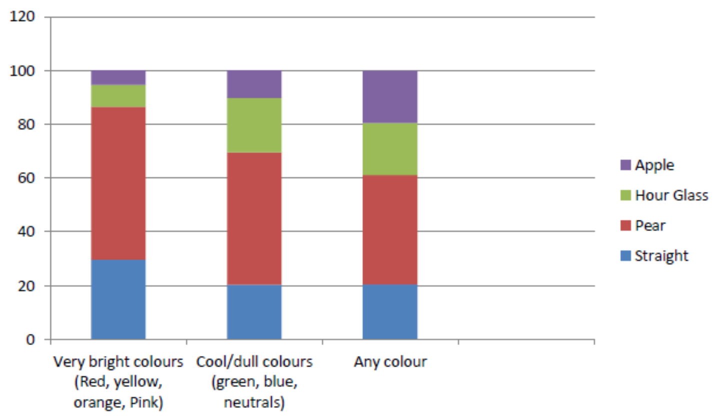
Figure 2: Percentage responses on the fabric design element of line preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East Nigeria

Hypothesis 1: There are no significant relationships between figure types and fabric design preferences of female undergraduate students of Federal Universities in South East, Nigeria.

The X^2 P-value of 0.091 is greater than 0.05 indicating that the null hypothesis stating that there is no significant relationship (P>0.05) between subjects' figure types and their preferences in fabric design elements of line is accepted at 0.05 level of significance

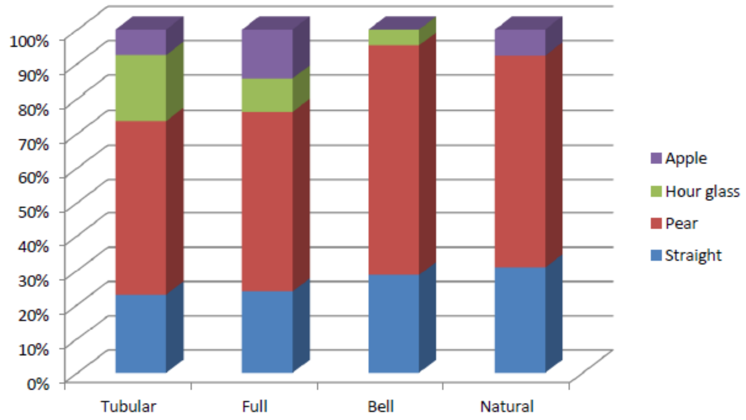
The data in figure 4 above reveals that tubular shape or silhouette was mostly preferred by pear figures (50.7%) followed by the straight figures (22.9%) while apple figures were rated the least (7.5%). The pear figures also rated highest in preferences for full (52.4%), bell (45.2%) and natural (61.3%) shapes. Within individual figure types, the most preferred shapes include tubular for straight and hour glass (22.9 % and 18.9% respectively) natural for pears (61.5%), and full for apple figures (14.3%),

The P-value of 0.45 is greater than 0.05 indicating that the null hypothesis stating that there is no significant relationship (P>0.05) between subjects' figure types and their preferences in fabric design elements of shape is therefore accepted at 0.05 level of significance.



Note: Element of Colour. *N* = 30, (X^2 = 12.107, P = 0.733)

Figure 3: Percentage responses on the fabric design element of colour preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East, Nigeria

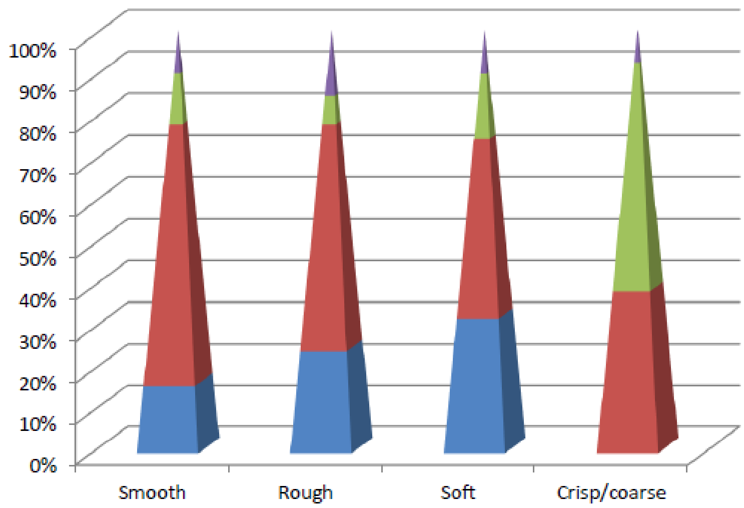


Note: Fabric design elements of Shape/form N = 300, X^2 = 80.424 P = 0.45

Figure 4: Percentage responses on the fabric design element of shape/form preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East Nigeria

In Figure 5, data on fabric texture preferences by different figures show that pear figures scored highest in all the fabric texture variables including smooth (61.5%,), rough (53.35%), soft (42.4%) except crisp or coarse (53.8%) texture which was valued most by the hour glass figures. For the specifics, straight figures preferred soft textures (32.0%), Pear figures preferred smooth textures (61.5%), Hour glass preferred crisp or coarse textures (53.8%) while apple figures preferred rough textured fabrics most (15.6%)

The P-value of 0.311 is greater than 0.05 indicating that the null hypothesis stating that there is no significant relationship (P>0.05) between subjects' figure types and their preferences in fabric textures is therefore accepted at 0.05 level of significance.

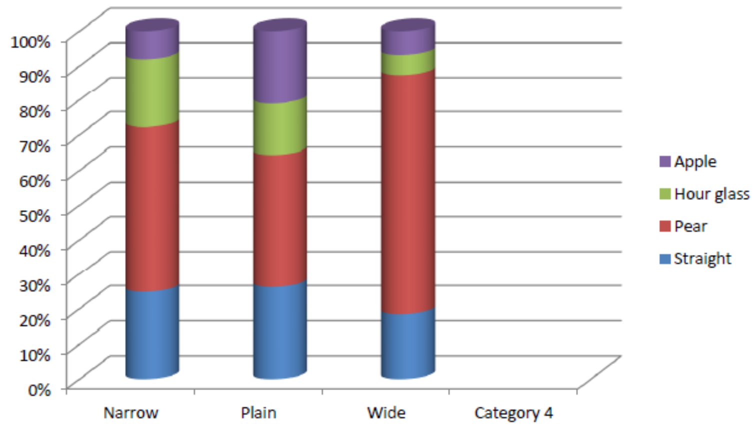


Note: Element of Texture *N* = 300, X2 = 11.955, P = 0.311

Figure 5: Percentage responses on the fabric design element of texture preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East Nigeria

Figure 6 shows data on subjects' preferences for design elements of space and their relationships with their figure types. Results show that all the space elements were rated high by the pear figures with wide space scoring highest (69.0%), closely followed by narrow space (47.4%) and last plain space (23.6%). Within the figure types, straight figures value plain designed fabrics most (24.8%), Pear figures preferred wide spaces in garment fabrics (69.0%), hour glass figures treasured narrow spaces (19.7%) while apple figures valued plain spaces most 21.0%).

The P-value of 0.11 is greater than 0.05 indicating that the null hypothesis stating that there is no significant relationship (P>0.05) between subjects' figure types and their preferences for fabric design element of space is therefore accepted at 0.05 level of significance.



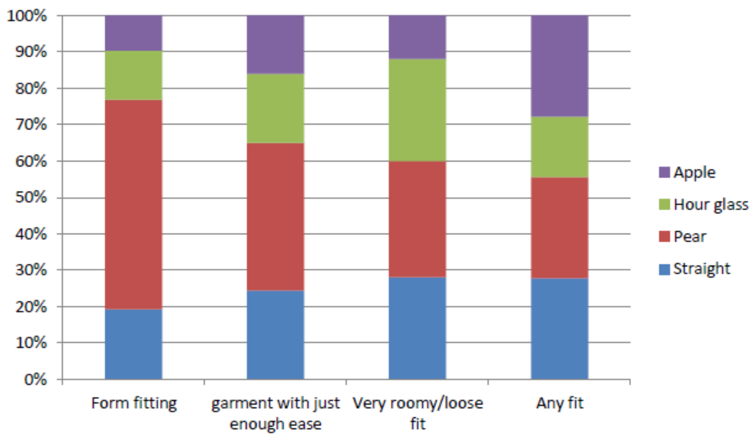
Note Design Element of Space N = 300, P = 0.11

Figure 6: Percentage responses on the fabric design element of space preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East, Nigeria

Research question 4: What are the garment styles and fit preferences of female undergraduate students of Federal Universities in South East, Nigeria? Answers to this research question are presented in Figures 7 and 8.

Data on Figure 7 reveals that pear figure subjects scored highest in their preferences for all the garment styles such as clinging or tight garments (57.6%), garments with just enough ease (40.5%). For the individual figures, straight figures valued any fit (40.0%), pear figures was clinging fits (57.6%), hour glass preferred roomy or loose fits while apple figures agreed on garment with just enough ease (16.2%).

The P-value of 0.11 is greater than 0.05 indicating that the null hypothesis stating that there is no significant relationship (P>0.05) between subjects' figure types and their preferences for fabric garment fits is therefore accepted at 0.05 level of significance.

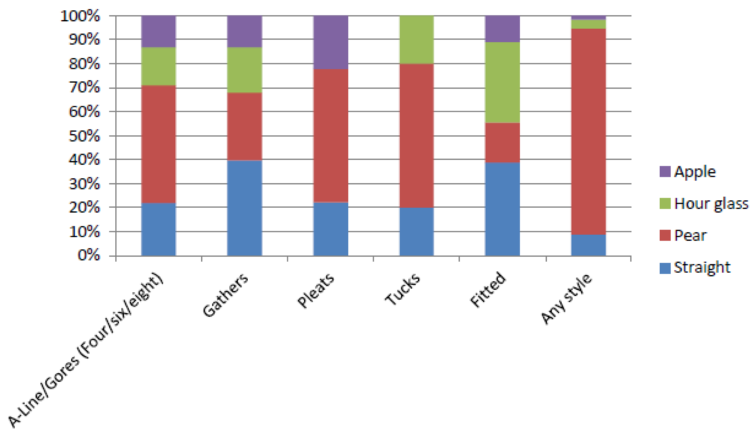


Note Garment Fit N = 300, P = 0. 091

Figure 7: Percentage responses on garment fit preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East Nigeria

Data on Figure 8 above indicate that out of the six garment style options presented, pear figures recorded highest scores in four of them including valuing any style (85.7%), tucks (60.0%), pleats (55.6%), and A-line /four, six or eight gore garments (49.1%). For specific figures, straight figures mostly preferred fitted (38.9%), pear figures value any garment style (85.7%), Hour glass was fitted style (33.3%) and apple figures was pleats (22.2%).

The P-value of 0.35 is greater than 0.05 indicating that the null hypothesis stating no significant relationship (P>0.05) between subjects' figure types and their preferences for garment styles is therefore accepted at 0.05 level of significance.



Note Garment style preferences: *N* = 300, X2 = 53.982, P = 0.346

Figure 8: Percentage responses on the garment style preferences and their relationship with figure types of female undergraduate students of Federal Universities in South East Nigeria.

Discussion of findings

The demographic data showed that majority of the subjects (67.7%) were within 21–25 years age bracket, 94.7% were single while 5.3% were married. For ethnic backgrounds, 89.0% were from Igbo, 3.3% were from Yoruba, 0.3% were from Hausa and 7.3% were from other ethnic background. However, 99.3% of the subjects were Christians and 0.7% was Muslims. The personal data showed that the female undergraduates studied were in their late adolescent/early adult years described as age of active conformity to dress pattern of the peers' group, celebrities or other influential personalities encountered.

Majority of the subjects' BMI were normal (57.7%), and few at both negative ends. While 5.3% were underweight, 11.0% were obese. The findings on the subjects' figure types revealed that 14.3% possess hour glass, perfect or ideal figure. This finding is a very good news to the subjects contrary to the speculations by Shweta, & Otieno (2013), and Kim. Sharon & Nancy (2014) that having an ideal or perfect figure is illusionary. Having a perfect figure is a huge asset as fashion professionals agree that an individual with perfect figure does not encounter much difficulty in both fabrics and garment selection as virtually everything fits. More than half of the subjects possess pear figure (51.3%) followed by straight or banana figures (23.3%). This finding has implications to clothing choices. The pear and apple figures recording highest scores on horizontal lines (71.1%), abstract (63.2%) as well as any line fabric (81.1%) indicates ignorance and lack of skill in selecting becoming clothes that camouflage figure faults as documented by Tootal Sewing Product, (1987), and Vulker and Cooper (1987). Horizontal lines fabric makes pear and apple figures look shorter, more rounded and disgusting (Marshal et al, 2000). Fashion professionals agree that the link between style and mood or emotional states is stronger than imagined. Thus, wrong choice could be a predisposing factor to seeking for alternatives (which could be destructive to health and wellbeing) to boost figure. The rejected vertical line fabric garments would have created illusions of slenderness and tallness to make the pear and apple figures look more beautiful and attractive. Pine in Forbes-Bill (2020), reiterated that the more individuals care about enclothed cognition and how it can lift a person's mood, the less anti-depressant medication will be needed. The theory of enclothed cognition states that clothes influence the wearer's psychological processes based on two variables; the meaning created for particular clothing and the concrete somatic sense that wearing clothing has (Smith, 2017). The null hypothesis stating that there was no significant relationship (P>0.05) between subjects' figure types and their preferences in fabric design elements of line is accepted at 0.05 level of significance.

The pear figures rated highest in all colour parameters (very bright colours such as red, yellow, orange and pink 56.8%. Very bright colours are wrong choices for pear figures especially at the hip, and derriere region as their illusion enlarges. Darker, cool or dull colour contrast would give better camouflage to de-emphasize the flaw and flatter the figure as suggested by Vulcar and Cooper (1987), Igbo and Iloeje, (2015), The apple figures rated highly on cool colours, a better choice to conceal the top-heavy figure.

On design element of texture, pear figures scored highest in all the variables including smooth (61.5%), rough (53.35%), soft (42.4%) except crisp or coarse (53.8%) texture which was valued most by the hour glass figures. Soft or clingy fabrics hug the body and emphasize any irregularities while nubby fabrics add dimension and can make one appear larger (Marshal et al, 2000). For the hour glass choice of crisp texture, they have coveted figures with nothing to hide or compensate for. They can therefore wear any garment fabric of any texture and it looks good on them.

All the space elements were rated highly by the pear figures with wide space scoring highest (69.0%). Within the figure types, straight figures value plain designed fabrics most (24.8%), Pear figures preferred wide spaces in garment fabrics (69.0%), hour glass figures treasured narrow spaces (19.7%) while apple figures valued plain spaces most (21.0%). This finding is contrary to suggestions by Marshal et al (2000), on becoming elements of space on different figures. Bold spaces on fabrics when worn by pear or apple figures make the figure size bigger but looks better on straight thin and perfect figures.

On design element of shape/form, garment style and fit follow the same trend. There were no consistencies in the right choice of design elements in garment selection and consumption. There were high preferences for form/tight fitting garments by both pear and straight figures. Form/tight fitting garments are the current trend of fashion among females in the study area. This is confirmed by the finding of the present study. Form fitting is contour revealing garments that present unbecoming and unattractive appearance for pear, straight and apple figures. Pear figure subjects scored highest in their preferences for clinging or tight garments (57.6%), garments with just enough ease (40.5%), and garment with roomy fits (32.0). For the individual figures, straight figures valued any fit (40.0%), pear figures was clinging fits (57.6%), hour glass preferred roomy or loose fits while apple figures agreed on garment with just enough ease (16.2%).

Generally, the findings reveal that the pear, apple and straight figures make wrong garment choices contrary to recommendations for garment designs that complement different figure types by Robertson (2008), Tootal Sewing Products (1984), Vulker and Cooper, (1987), Marshal et al (2000) and Kefgen and Spect in Anikweze (2013).

Conclusion

The present study correlated figure types and clothing preferences of female undergraduate students of Federal Universities of South East, Nigeria. Specifically, the study categorised the female undergraduates into four major figure types namely pear shape (51.3%), straight/banana (23.3%), hour glass/average/figure eight (14.4%) and apple figure (11.0%). Null hypotheses tested showed no significant relationships between subjects' figure types and their garment preferences. It was established that the subjects lack appropriate skills in the choice of recommended clothes for their different figure types considering the design elements, garment fit and styles. This could predispose them to clothing related problems. These findings have much implication to the undergraduate students, their parents, the universities as well as their beholders.

Recommendations

Based on the findings of the study, the following recommendations were made:

- Basic clothing education especially on effective apparel selection practices should form part of freshmen orientation programmes on campuses. The orientation programmes should be given by professionals in clothing and textile discipline.
- Occasional seminars, quizzes and competitions should be organised for the students both males and females to inculcate in them desirable clothing norms and the need to always select clothing articles that best suit figure type.
- Students should be educated on their figures and the factors that promote good figures such as adequate diet, exercises and good lives. They should be taught that looking good does not only depend on having perfect figure but also ability to apply design elements and principles to camouflage, conceal bad points and emphasize good ones.

References

Anikweze G U (2013). *Figure Types and the Challenges of Making Garments in Nigeria*. PAT ISSN: 0794-5213 9 (1): 135-146

Anyakoha E U and Eluwa M A (1999). *Home management for schools and colleges*. Onitsha: Africana-FEP Publishers.

Arooj R (2019). *The media effect: Implication for manifesting maintainable body image in the context of global fashion industry*. Retrieved 4/6/2020 from https://www.intechopen.com/online-first/the-media-effect-

Barford, V (2012.). "The re-re-re-rise of the corset" BBC. Retrieved 3 November

Chowdhary U and Ryan L (2003). Self-Esteem and Apparel Satisfaction with Appropriate Clothing: Value of Product Attributes and Support Groups for Mastectomy Survivors, Mount Pleasant ,Central Michigan University, *Percept Mot Skills. Aug; 97*(1):35-44.

Diener E, Scollon C N, Lucas R E (2009). The evolving concept of subjective well-being: the multifaceted nature of happiness. In: E Diener (ed.) *Assessing well-being: the collected works of Ed Diener*. New York: Springer; 2009:67–100.

Diener E (2000). Subjective well being: the science of happiness and a proposal for a national index. *American Psychologist; 55*(1): 34–43.

Francis D (2011). Daily rituals of dress: Women recreating themselves over time. *American Society on Aging,v.35*, no.3, p. 64-7

Forbes-Bill S (2020). *How fashion professionals are managing their mental health during COVID-19; Fashion is psychology*. Retrieved on 8/6/20202 from Fashion is Psychology.com/tag/mental-wellbeing

Frey B S and Stutzer A (2002). *Happiness and economics*. Princeton, N.J.: Princeton University Press.

Huck J, Maganga, O and Kim Y (1994). "Protective overalls: Evaluation of garment design and fit.", *International Journal Of Clothing Science And Technology, vol. 9*, No. 1, 99. Pp

Igbo C A & Iloeje C I (2015). The basics of dress pattern drafting. Enugu, Nigeria: Inselberg (Nigeria) Ltd.

Johnson, J G & Foster A G (1990). *Clothing, Image & Impact*. Cincinnati; Ohio, South Western Publishing Co: 145.

Kahneman D, Krueger A B, Schkade D A, Schwarz N, Stone A A (2004). A survey method for characterizing daily life: the day reconstruction method. *Science; 306*:1776–1780.

Khansi R (2007). "The hourglass figure is truly timeless". Retrieved from.https://www.newscientist.com/article/dn10927-the-hourglass-figure-is-truly-timeless/

Keyes CLM (2002). The mental health continuum: from languishing to flourishing in life. *J Journal of Health and Social Behaviour*

Kim J, Sharon J L & Nancy R (2014). Dress, body & self; research in the Social Psychology of dress. *Fashion Textile 1* (2).

Kwon Y H (1991). The influence the perception of mood and self consciousness on the selection of clothing and textiles. *Research journal, 9* (4), 41-46.

Kwon Y H (1994). Feeling toward one's clothing and self-perception of emotion, sociability, and work competency. *Journal of Social Behaviour and Personality, 9*(1), 129-139.

Marshal S G., Jackson, J O, Stanley M. S, Kefgen, M & Tochie–Specht P (2000). *Individuality in Clothing Selection and Personal Appearance*. New Jersey. Prentice hall Inc: 80

McComack H (2005). *The shape of things to wear: scientists identify how women's figures have changed in 50 years*. The Independent, UK

Siaw S D, Kermeror A K and Dzramedo B E (2014). Appropriate effects of elements and principles of designing apparel in fashion: *Global Journal of Arts Humanities and Social Sciences* 2(9):1-12.

Smith R (2017). Wellbeing. *The Fashion Studies Journal* Retrieved on 6/6/2020 from http://www.fashionstudiesjournal.org/4-notes-from-the-field-3/2017/7/29/wearing-wellbeing

Singh D (2010). *An Evolutionary Theory of Female Physical Attractiveness*. Retrieved on May 2007 from http://www.psichi.org.

Shweta, R & Otieno R (2013). Relationship between body image and clothing perceptions among women aged 18-55 years in the UK. *Internatinal Journal of Arts and Commerce*; 40-49

Spenser, C. (1998). *Carol Spenser's STYLE, Counsel Slim line clever ways to flatter your figure*. London: Judy Piatku (Pub) Ltd.

Tootal sewing Product, (1987). *Sew simple: A step by step guide to dree making* (revised Edition). London. Hutchinson Educ. Ltd.

Vulker.J.and Cooper, H. (1987). *Textiles, fabrics and Design*. London: Heinemann Educational Books Ltd

PEER-REVIEWED CONGRESS PAPER

COVID-19 pandemic lockdown's potential influence on nutritional security and status of children under five (CU5) in Shomolu, Lagos

Ifeoma Akeredolu, Abosede Rufus, Madesola Adegeye & Favour Chinedu
Lagos State, Nigeria

Abstract

The COVID 19 pandemic was identified by the World Health Organization (WHO) as a health and human crisis that affected the food security and nutrition of millions of people all over the world. In an attempt to stop the virus from spreading, the government of Nigeria imposed a national lockdown. This had impact on production, supply and access to key staples with consequent rise in prices, limiting affordability and access to food amongst other issues of feeding practices. The goal of this study was to determine how the COVID 19 pandemic lockdown affected the food security, nutrition and health of children under the age of five (CU5). A structured questionnaire was used to collect information on nutrition security and feeding patterns of CU5 from 200 mothers randomly sampled from the study area. Anthropometric data was also used to determine the nutritional status of children. The results were analyzed using descriptive and inferential statistics. The food frequency distribution before the pandemic revealed that consumption was between six to seven times weekly for all food groups while consumption dropped to two to three times weekly during the lockdown, consequently about 35% of children sampled had severe acute malnutrition, 7.5% were wasted, 18.5% underweight and 48.5% stunted. The result showed significant relationship between caregivers' socio-demographic characteristics and nutritional security and feeding patterns of CU5. It showed an inverse relationship between COVID-19 pandemic lockdown and the nutritional security and status of CU5. As the employment status of parents/caregivers declined by 18%, unemployment increased by 4.5% and self-employment increased by 3.5%. This affected food availability, affordability and accessibility which was about 74% before the lockdown but dropped to about 57% during the lockdown. It is recommended that mothers receive nutrition education on good feeding practices, also government and non-government organizations (NGOs) are advised to intervene in the provision of food for CU5, particularly during emergencies and also provide an environment for self and economic empowerment that can reduce the vulnerabilities of children and caregivers to poor nutrition.

KEYWORDS: **NUTRITIONAL SECURITY, NUTRITIONAL STATUS, COVID-19 LOCKDOWN, CU5.**

Introduction

Diet is a factor that determines children's ability to grow, develop, and learn to their full potentials. A UNICEF (2019) report observed that one out of every three children under the age of five was undernourished or overweight, and one out of every two suffered from hidden hunger. This indicates high tendencies of food and nutritional insecurities which jeopardize millions of children's ability to develop their full potentials. Nutrition security is achieved with

Akeredolu, I., Rufus, A., Adegeye, M., & Chinedu, F. (2022). COVID-19 pandemic lockdown's potential influence on nutritional security and status of children under five (CU5) in Shomolu, Lagos. International Journal of Home Economics, 15(2), 129-137.

Ifeoma Akeredolu ✉ favours94@yahoo.co.uk

access to sufficiently nutritious diet combined with a hygienic environment, appropriate health services and care to enable a healthy and active life for all household members, (FAO et al. 2012). Although nutrition security necessitates food security, the two concepts are sometimes used interchangeably to stress both food and health requirements (Weingartner, 2013). Household food insecurity has been shown to have detrimental impacts through limited varieties, nutrient intake, and nutritional status of household members (Osei et al 2010). Nutritional status of children (being most vulnerable to nutritional imbalances) is a key indicator for measuring the nutritional and health conditions of a community experiencing a food crisis (Jesmin et al 2011).

According to nutritional studies, attempts in many developing countries to improve the quality of children's dietary intake have been incredibly slow (Crawley 2004), owing to a range of factors such as rising food commodity prices amongst others (Keikhaei et al 2007). Income was observed to be a crucial driver of nutritional status in a study carried out by Salois et al. (2012) on the impact of income on nutrient consumption, also a connection between calories consumption disaggregation and its relationship with income was established. Carbohydrate consumption was found to have a positive elasticity at low-income levels but a negative elasticity at high income levels.

The COVID 19 pandemic, though a human health crisis affected the economy and general livability of global population, threatening food security and nutrition of millions globally. The devastating influence on the economy caused unprecedented recession and impoverishments. As a result of the pandemic and the consequences that came with it, millions of people, especially the low economic strata became vulnerable, lacking adequate food and malnutrition. Hence, Income level is associated with food demand, livelihoods and security, (Torero 2020, Arndt 2020, Samuel et al (2021). This was depicted in the increased food insecurity and rising unaffordability of healthy diets. As at 2019, 690,000,000 people, or 8.9% of the world's population, were undernourished, 135,000,000 were in hunger crises or worse in 55 countries, and 2,000,000,000 people lacked regular access to safe, nutritious, and sufficient food (FAO et al., 2020). According to World Food Programme, (2020) the COVID-19 crisis was observed to have worsened the hardship and may lead to an additional 121,000,000 people faced with extreme food insecurity by the end of 2020.

In 2020, 22.0% (149,200,000) of children under the age of five were estimated to have stunted growth, 6.7% (45,400,000) wasting, and 5.7% (38,900,000) overweight. (FAO, IFAD, UNICEF, World Food Programme, and WHO, 2021).

In 2019, Nigeria had a Global Hunger Index (GHI) score of 27.9, placing it in the serious category. These statistics show that Nigeria lags behind in meeting the SDG 2 target of eradicating all forms of hunger, achieving food security, improved nutrition, and sustainable agriculture by 2030. This is worsened by the pandemic as food production and distribution is affected by other factors such as climate change and poverty. The pandemic has impacted the agricultural sector which has influenced food security negatively and in turn the nutritional security of people especially children under the age of five. Nigeria Demographic and Health Survey (2013) revealed that 37% of children under the age of five in Nigeria were stunted, while 21% were severely stunted, 18% wasted and 9% severely wasted while 29% were underweight, with 12% being severely underweight. A study in Tanzania among CU5 revealed that 41% were stunted, 18.8% were underweight and 7.3% were wasted, making stunting the most prevalent form of malnutrition experienced among CU5. Another study among preschool children in south-west Nigeria found a prevalence of 8.1%, stunting, 7.7% underweight and 1.9% wasting. (Onifade et al., 2019)

The COVID-19 pandemic brought about social and economic crisis that rapidly increased the ongoing nutrition insecurity in Nigeria, (Federal Ministry of Health, 2020). The lockdown had drastic effect on the food supply system which affected food availability, pricing and quality (Barrett 2020). Terazono and Munshi (2020) also observed that the demand for perishable commodities decreased significantly because of the lockdown. Several studies have been carried out on the nutritional status of children in Nigeria however, there is a paucity of published data on the nutritional status and security of CU5 before and during the COVID-19 lockdown. In view of the above, this study was conducted to determine the potential influence of COVID-19 pandemic lockdown on the nutritional status and security of children under 5 (1–3 years of age toddlers) in Shomolu Local Government Area of Lagos State.

Methodology

Study location and Research Design

The study was conducted in Shomolu Local Government Area (LGA) of Lagos State, Nigeria. It was randomly selected from the Lagos east senatorial district. The LGA is made up of eight communities (Onipanu, Okesuna/Alase, Igbari, Fadeyi/Igbobi, Bashua, Orile/Alade, Bajulaiye and Ijebu-Tedo). These communities are predominantly indigenous ethnic groups of different socio-economic stratifications. The people in the communities are either civil servants, workers in the private industries or self-employed.

The study used primary and secondary data to determine the influence of COVID-19 pandemic lockdown on the nutritional status and security of toddlers in Shomolu LGA. Structured questionnaire was used to solicit information from mothers of children under five years, ages 1–3 years (toddlers). The questionnaire comprised of four Sections; socio-demographic characteristics, Anthropometric parameters, Food Availability and Accessibility and Food Frequency Questionnaire (FFQ). A random sample of 200 mothers with children ages one to three was randomly selected from the LGA. Information about the nutritional status and security of toddlers was elicited via the questionnaire. The instrument was designed to assess information on nutritional status and security of toddlers as well as determine the children's feeding pattern before and during the COVID-19 Pandemic lockdown.

Descriptive and inferential statistics such as Cross tabulations, frequency distribution and Chi-square (x^2) test were employed to describe the socio-demographic characteristics and nutritional security. Nutritional status was determined using WHO Child Growth Standards (2006), Z-scores, which was used to calculate the indicator prevalence for; Child Weight-for-age [(WAZ) Weight for Age Z score: -1-<WAZ < 0 Well Nourished, -2<WAZ <-1 Mild underweight, 3<WAZ <-2 Moderate underweight, WAZ <-3 Severe underweight] Child Height-for-age [(HAZ)- Height for Age Z Score: -1-<HAZ < 0 Well Nourished, -2<HAZ <-1 Mild Stunting, -3<HAZ <-2 Moderate Stunting, HAZ <-3 Severe Stunting] Child Weight-for-height [(WHZ) Weight for Height Z score: -1-<WHZ < 0 Well Nourished, -2<WHZ <-1 Mild Wasting, -3<WHZ <-2 Moderate Wasting, WHZ <-3 Severe Wasting]. Mid Upper Arm Circumference (MUAC) parameters were used to determine the prevalence of malnutrition, 0–11cm on the MUAC Tape indicating severe Malnourishment (Red), 11–12.5cm indicating mild Malnourishment (Yellow) and 12.5–20cm indicating good nourishment (Green).

Result and Discussion

The socio demographic characteristics of respondents showed that 56.5% of mothers had tertiary education, 36% had secondary education and only 7.5% primary education. Reported educational level of spouses showed that 74.5% had tertiary education, 20.5% had secondary education and only 5% had primary education. The employment status of mothers before the pandemic showed that 40.5% were employed, 34.5% were self-employed and only 20% were unemployed. Reported employment status of spouses before the pandemic showed that 56% were employed, 23.5% were self-employed and only 20.5% were unemployed. The employment of mothers during the pandemic showed that 31% remained employed, 39.5% were self-employed and 29.5% were unemployed. The reported employment status of spouses during the pandemic showed that 47.5% were employed, 28% were self-employed and 24.5% were unemployed. The employment status of mothers and their spouses showed a slight variation during the pandemic compared with the period before the pandemic. Although both parents' employment status remained good, fathers' employment status dropped by 8.5% and that of mothers dropped by 9.5%. The percentage of parents in self-employment increased slightly, mothers at 5% and fathers at 4.5%.

The monthly income distribution of mothers showed that only about 15.5% earned above $217 before and during the pandemic, while 19.5% earned between $145–$217 before the pandemic and 15.5% during the pandemic resulting in a decline of about 4%. About 22.5% of mothers earned between $73 and $145 before the pandemic and about 23.5% earned the same amount during the pandemic. About 42.5% of mothers earned less than $73 before the pandemic and about 46% earned less than $73 during the pandemic. This implies that while some mothers lost their jobs, others had income reduction during the pandemic. The reported income of fathers also showed a reduction as about 26.5% earned above $217 before the pandemic and 24.5% during the pandemic indicating a reduction of about 2%. About 21% of fathers earned between $145 and $217 before the pandemic and 14% during the pandemic indicating about 7% decline. About 29% earned between $73–$145 before the pandemic and 26% during the pandemic indicating a 3% reduction in income. While about 23.5% earned less than that before the pandemic which increased to 35.5% during the pandemic.

The job loss during the pandemic lockdown has significant implications for income which is one of the indicators for measuring child food and nutrition security, and this can further aggravate malnutrition amongst the children. This also implies that as parents' income reduce, the purchasing power of good, adequate and nutritious food for their children will be affected, thereby leading to nutrition insecurity. This further shows that income is a major determinant of food and nutrition security. This finding is similar to that of Arndt et al. (2020) who posited that a reduction in the total household income will jeopardize household food security during the pandemic. It however agrees with the findings of Samuel, et.al. (2021) who reported that income level was associated with experience of food insecurity during the lockdown.

Food Frequency Distribution Before and During the Lockdown

Before the lockdown majority (41.6%) of the CU5 consumed starchy foods (Cereals, grains, roots and tubers) 6–7 times weekly whereas during the lockdown, consumption reduced to 2–3 times weekly for majority (46%). The frequency of protein consumption (Poultry, meat, fish, dry beans and nuts) among majority of them (38%) was 6–7 times weekly before the lockdown and for majority (50%) during the lockdown the frequency of consumption reduced to 2–3 times weekly. For milk and milk products, consumption for majority (38.5%) was 6–7times weekly and reduced to 2-3times weekly for most of them (49.9%). Frequency of consumption of fats and oil for most of the respondents (37%) before the lockdown was also 6–7 times weekly and this reduced to 2–3 times weekly (45%). Similarly, the frequency of consumption of fruits and vegetables for majority of CU5 (34% vegetable, fruits 31%) was 6–7 times weekly and also reduced to 2–3 times weekly (vegetable 46.5%, fruits 45.5%). All the above confirm that availability and accessibility of food during the lockdown was hampered.

The result from this study shows that during the lockdown, the food and nutrition security of the children was compromised because majority of the respondents lacked healthy feeding habits according to the food frequency distribution result. This implies that the feeding habits of the children was majorly affected during the COVID-19 pandemic lockdown and led to high malnutrition among CU5, since feeding frequency is a determinant of food and nutrition security. The drastic reduction in the consumption of fruits and vegetables is similar to the observation of Terazono and Munshi (2020) that there was a decline in demand for perishable commodities significantly during the lockdown.

Table 1: Food Frequency Distribution

Food Group	Before Pandemic				During Pandemic			
	Once	2-3 times	4-5 times	6-7 times	Once	2-3 times	4-5 times	6-7 times
Starchy foods: Cereals, grains, roots and tubers	13 (6.5%)	52 (26%)	52 (26%)	83 (41.5%)	28 (14.0%)	92 (46.0%)	63 (31.5%)	17 (8.5%)
Poultry, meat, fish, dry beans and nuts	21 (10.5%)	54 (27.0%)	49 (24.5%)	76 (38.0%)	39 (19.5%)	100 (50.0%)	58 (29.0%)	3 (1.5%)
Milk and milk products	6 (8.0%)	55 (27.5%)	52 (26.0%)	77 (38.5%)	29 (14.5%)	99 (49.5%)	67 (33.5%)	5 (2.5%)
Fats and oil and sweets	24 (12.0%)	55 (27.5%)	47 (23.5%)	74 (37.0%)	42 (21.0%)	90 (45.0%)	46 (23.0%)	22 (11.0%)
Vegetables	25 (12.5%)	61 (30.5%)	46 (23.0%)	68 (34.0%)	47 (23.5%)	93 (46.5%)	54 (27.0%)	6 (3.0%)
Fruits	24 (12.0%)	61 (30.5%)	53 (26.5%)	62 (31.0%)	51 (25.5%)	91 (45.5%)	53 (26.5%)	5 (2.5%)

Food Availability and Accessibility (Before the Lockdown)

Food availability and accessibility before the lockdown was 81.0% as respondents claimed to have got different types of food before lockdown while 19.0% did not have food at their disposal. Also, 59.5% of mothers did not experience increase in food prices, 40.5% of them experienced increase in food prices before the lockdown. It was observed that 75.5% of mothers had enough money to purchase food items needed by the family while about 24.5% did not have enough money to purchase food items before the lockdown. A larger percent of caregivers (76.5%) purchased food items based on household preferences while 23.5% purchased based on household needs. Majority (71.5%) of mothers were able to purchase all food items needed by the family while 23.1% could not purchase all their food items. Most (81.0%) of them said all their preferred food items were available at the market before the lockdown while 19.0% reported that their food preferences were not available at the market before the lockdown. Majority (90.5%) of caregivers got fresh food items at the market before the lockdown while very few (9.5%) were unable to get fresh food items at the market before the lockdown.

Food Availability and Accessibility (During the Lockdown)

Majority of mothers (61.0%) were able to have access to different types of food during the lockdown. About 92.5% of mothers agreed that there was an increase in food prices compared to 7.5% who did not experience any increase in food prices. It was also observed that 58.0% caregivers did not have enough money to purchase food items needed by the family while 42.0% of them could afford to purchase family needs. About 35.5% of mothers purchased food items based on preferences while more than half (65.5%) of caregivers purchase of foods items were not based on their preferences during the lockdown. Majority 72.0% of mothers confirmed that all their preferred food items were available in the market during the lockdown while 28.0% where unable to get their preferred food items in the market during the lockdown. About 87.5% of mothers were not breastfeeding during the lockdown while 12.5% were still breastfeeding their toddlers. The availability and accessibility of food before and during the lockdown reveal a huge gap compared to the variation observed in income during these periods. Children in one year bracket experienced about 10% decline in their food consumption, children in age two category experienced about 15% decline while children in age three category experienced 15.5% decline.

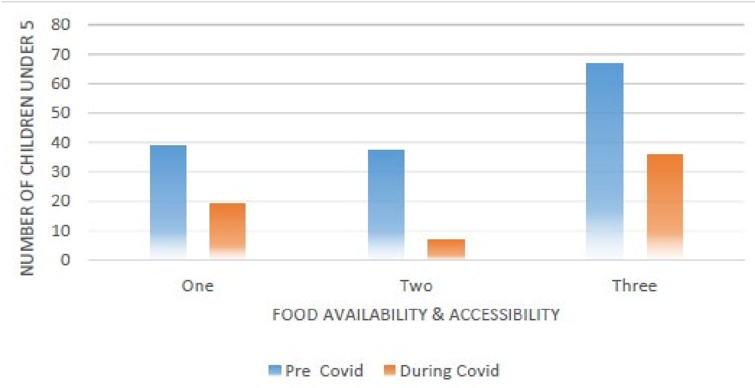


Figure 1: Food availability and accessibility by children age one to three pre-COVID and during lockdown

The result on Table 2 describes the nutritional status of the CU5. 7.5% were wasted (4.5% mild, 2.5% moderate and .5% severe). Wasting depicts Low weight-for-height and helps to identify children suffering from current or acute under nutrition or wasting. It is appropriate for examining short-term effects such as seasonal changes in food supply or short-term nutritional stress brought about by illness. So many of the children (48.5%) were stunted (20.5% mild, 18.0% moderate and 10.0% severe). Stunting which depicts Low Height-for-age index identifies past under-nutrition or chronic malnutrition. It is associated with a number of long-term factors including chronic insufficient protein and energy intake, frequent infection, sustained inappropriate feeding practices and poverty. It is possible that these children were already stunted before the lockdown or that the they became so due to the unavailability and or lack of access to protein-rich and energy foods, as shown in the result of their reported frequency of consumption. In children over 2 years of age, the effects of these long-term factors may not be reversible. About 18.5% were underweight (12.5% mild, 3.5% moderate and 3.5 severe). Underweight is identified by a low weight-for-age index. This index reflects both past (Chronic) and/or present (acute) under nutrition (although it is unable to distinguish between the two).

Table 2: Nutritional Status of the Under Five Children

Classification	Normal	Mild	Moderate	Severe
WHZ	54 (27.0)	9 (4.5)	5 (2.5)	1 (0.5)
HAZ	69 (34.5)	41 (20.5)	36 (18.0)	20 (10.0)
WAZ	90 (45.0)	25 (12.5)	7 (3.5)	7 (3.5)

Note: WHZ-Weight for Height z-score; HAZ-Height for Age z-score; WAZ-Weight for Age z-score; MUAZ-Mid Upper Arm Circumference for Age z-score; BAZ-BMI for Age z-score

This result in this study is higher than that obtained by of Onifade et al. (2019) which indicated that among preschool children, there was 8.1% stunting, 7.7% underweight and 1.9% wasting. It is however similar to the findings of Nicodemas et al., (2019) in a study in Tanzania among CU5 that showed 41% stunting.

The age-MUAC distribution result also showed that about 11.0% of children of age 1, have severe acute malnutrition, with about 5% moderately malnourished, while 7.0%, were at risk for acute malnutrition and only 4.5% were well nourished. For children two years old, about 12.0% of them had severe acute malnutrition, 7.0% were moderately malnourished, 6.5% were at risk for acute malnutrition and only 28.5% of them were well nourished. About 12.5% of children age 3 had had severe malnutrition, about 7.5% were moderately malnourished, 10.0% were at risk for acute malnutrition and only 14.0% were well nourished.

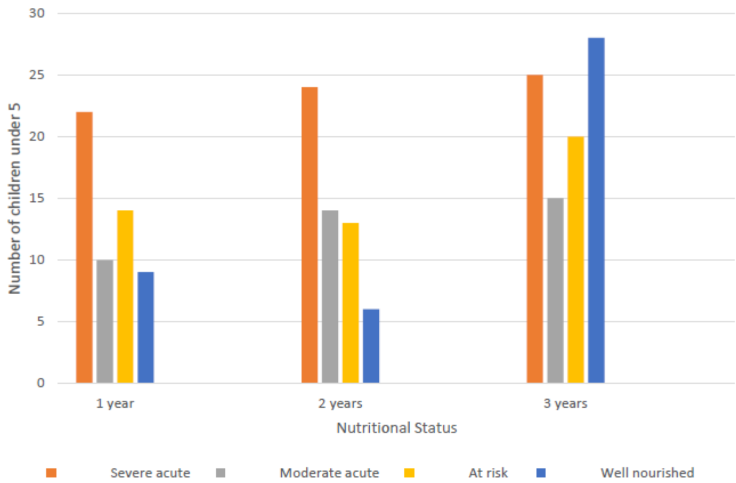


Figure 2: Nutritional status using Age-Mid upper arm circumference

The weight for height z-score on Table 3 showed that about 0.5% of boys were severely wasted, while there was no record of severe wasting among the girls, 2.0% of the boys were wasted while 0.5% of girls were wasted.

Table 3: Weight for Height for CU5

		WHZ score						
Gender		**3**	**2**	**1**	**0**	**-1**	**-2**	**-3**
Male	Count	2	6	56	20	4	4	1
	%	1.0%	3.0%	28.0%	10.0%	2.0%	2.0%	0.5%
Female	Count	4	3	60	34	5	1	0
	%	2.0%	1.5%	30.0%	17.0%	2.5%	0.5%	0.0%
Total	Count	6	9	116	54	9	5	1
	%	3.0%	4.5%	58.0%	27.0%	4.5%	2.5%	0.5%

Weight for Age of children under 5 years showed that about 0.5% of boys were underweight while 3.0% were underweight among the girls, 7.0% were mildly underweight for boys while 5.5% were mildly underweight for girls, 13.5% of boys were slightly overweight while 15.5% of girls were mildly overweight. About 9.5% of boys were underweight and 10% of girls were underweight with 2% and 1.5% being severely underweight for boys and girls respectively. 18% of boys were underweight (13.5% mild, 4% moderate and .5% severe) and 17.5% of girls were underweight (15.5% mild and 2% moderate).

Table 4: Weight for Age for CU5

		WAZscore						
Gender		**3**	**2**	**1**	**0**	**-1**	**-2**	**-3**
Male	Count	1	8	27	38	14	1	4
	% of Total	0.5%	4.0%	13.5%	19.0%	7.0%	0.5%	2.0%

Female	Count	0	4	31	52	11	6	3
	% of Total	0.0%	2.0%	15.5%	26.0%	5.5%	3.0%	1.5%
Total	Count	1	12	58	90	25	7	7
	% of Total	0.5%	6.0%	29.0%	45.0%	12.5%	3.5%	3.5%

Height for Age of CU5 showed that about 3.5% of boys and 17% of girls were slightly stunted, 9% of both boys and girls were mildly stunted while 4% of boys and 6% of girls were severely stunted.

Table 5: Height for Age

		HAZ score						
Gender		**3**	**2**	**1**	**0**	**-1**	**-2**	**-3**
Male	Count	1	11	8	40	7	18	8
	% of Total	.5%	5.5%	4%	20%	3.5%	9%	4%
Female	Count	2	4	8	29	34	18	12
	% of Total	1%	2%	4%	14.5%	17%	9%	6%
Total	Count	3	15	16	69	41	36	20
	% of Total	1.5%	7.5%	8%	34.5%	20.5%	18%	10%

The stunting level (48.5%) among CU5 in Shomolu local government area is above cut off point from the significant level of public health, thus suggesting immediate attention of all the concerned bodies such as public health authorities. The result from the 2013 Nigeria Demographic and Health Survey (NDHS) revealed that 37% of CU5 were stunted, while 21% were severely stunted, 18% of under-five children in Nigeria were considered wasted and 9% were severely wasted while 29% were underweight, with 12% being severely underweight. The prevalence of stunting in the present study is higher than that of NDHS 2013. NDHS (2018) also showed that about 37% of Nigerian CU5 were stunted, 7% were wasted, 22% are underweight, and 2% are overweight. This implies that the COVID 19 lockdown increased stunting among CU5. This is likely to be due to income reduction that affected food accessibility and affordability. Though the rate of stunting reported by NDHS (2013) and NDHS (2018) is somewhat lower than that of this study, all the reports still follow a similar trend.

Table 6: Nutritional Status of CU5 and Lockdown

Income and ability to purchase all food items needed in the house during lockdown	Mid upper arm circumference				
	SAM	**MAM**	**ARM**	**WN**	**Total (%)**
Yes	23 (11.5%)	9 (4.5%)	22 (11.0%)	30 (15.0%)	84 (42.0)
No	48 (24.0)	30 (15%)	25 (12.5)	13 (6.5)	116 (58.5)
Total	71 (35.5)	39 (19.5)	47 (23.5)	43 (21.5)	200 (100.0)

Note: $x^2 = 22.478$; df =3 $p = 0.000$

The relationship between the lockdown and nutritional security and status of children under 5 shows that about 4.5% toddlers who suffer from moderate acute malnutrition (MAM) are from families that did not have enough money to purchase all the food items needed in the family during the lockdown while 15.0% CU5 that were well nourished (WN) are from families who had enough money to purchase food items during the pandemic. The result also reveals that about 24% of the children who suffer from severe acute malnutrition (SAM) are from families who did not have enough cash to purchase food items during the lockdown while 15.0% who suffer from moderate acute malnutrition (MAM) are from families who did not have enough money to purchase food items. This finding agrees with that of Salois et al., (2012) who observed that income is a key determinant of nutritional status.

Conclusion

The COVID-19 pandemic had a huge influence on the nutritional security and status of children under five in Shomolu LGA. The study found a significant relationship between mothers' socio-demographic characteristics and nutritional security and status of their CU5. The effect of the lockdown was seen in the decline in employment of parents, the number of children that suffered acute malnutrition. In view of this, it is recommended that mothers should be given nutrition education on good feeding practices, also government and non-governmental organizations (NGOs) are advised to intervene in the provision of food for CU5, particularly during emergencies and also provide an environment for self and economic empowerment that can reduce the vulnerabilities of children and caregivers to poor nutrition.

References

Arndt, C., Davies, R., Gabriel, S., Harris, L., Makrelov, K., Robinson, S., Levy, S., Simbanegavi, W., Seventer, D. Van, Anderson, L., van Seventer, D., & Anderson, L. (2020). COVID-19 lockdowns, income distribution, and food security : An analysis for South Africa. *Global Food Security, 26*, 100410.

Barrett, C. 2020. Actions now can curb food systems fallout from COVID-19. *Nature Food. 1*: 319-320

Crawley J. Reducing the burden of anemia in infants and young children in malaria-endemic countries of Africa: From evidence to action. *Am J Trop Med Hyg. 2004; 71*(2):25-34.

FAO, IFAD, UNICEF, WFP and WHO. 2021. *The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all.* Rome, FAO.

Federal Ministry of Health. 2020. *Nigeria food and nutrition response plan for COVID-19 pandemic*.

Jesmin A, Yamamoto SS, Malik AA, Haque MA. Prevalence and determinants of chronic malnutrition among preschool children: a cross sectional study in Dhaka City, Bangladesh. *J Health Popul Nutr. 2011; 29*(5):494-9.

Keikhaei, B., Zandian, K., Ghasemi, A. & Tabibi, R. 2007. Iron-deficiency anemia among children in southwest Iran. *Food Nutr Bull. 28* (4):406-11.

National Population Commission (NPC) (Nigeria) and ICF. 2019. *Nigeria Demographic and Health Survey 2018*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.

National Population Commission (NPC) (Nigeria) and ICF. 2014. *Nigeria Demographic and Health Survey 2013*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.

Nicodemas, D., Fweja, L.W.T & Magoha, S.H. (2019) Association between feeding patterns and nutritional status of the under five children (6-59 months) in Mtwara Rural District, Tanzania. *Journal of Food, Nutrition and Agriculture 2*(1) 20¤26

Onifade, O. M. Okorie, K. J. and Otegbayo, J. A. 2019. Nutritional status and eating patterns of preschool children in a community in south-west Nigeria. *Nigerian Journal of Nutritional Sciences (ISSN 0189-0913).Vol. 40* No. 2.

Osei A, Pandey P, Spiro D, Nielson J, Shrestha R, Talukder Z, Quinn, V. & Haselow, N. 2010. Household food insecurity and nutritional status of children aged 6 to 23 months in Kailali District of Nepal. *Food Nutr Bull. Vol 31*(4):483-94.

Salois, M. J., Tiffin, R. and Balcombe, K. G. (2012) Impact of income on nutrient intakes: implications for undernourishment and obesity. *Journal of Development Studies, 48* (12). pp. 1716-1730. ISSN 1743-9140

Samuel, F.O., Eyinla, T.E., Oluwaseun, A., Leshi, O.O., Brai, B.I.C. and Afolabi, W.A.O. 2021. Food Access and Experience of Food Insecurity in Nigerian Households during the COVID-19 Lockdown. *Food and Nutrition Sciences, 12*, 1062-1072

Terazono, E. & Munshi, N. 2020. Choc waves: how coronavirus shook the cocoa market. *Financial Times*, July 30.

Torero, Maximo. 2020. Prepare food systems for a long-haul fight against COVID-19. In *COVID-19 and global food security*, eds. Johan Swinnen and John McDermott. Part Seven: Preparing food systems for future pandemics, Chapter 27, Pp. 118-121. Washington, DC: International Food Policy Research Institute (IFPRI).

UNICEF 2019. *The State of the World's Children 2019.* Children, Food and Nutrition: Growing well in a changing world. UNICEF, New York.

United Nations Children's Fund. 2009. *The State of the World's Children Special Edition: Celebrating 20 Years of the Convention of the Rights of the Child.* New York: United Nations Children's Fund.

United Nations System Standing Committee on Nutrition. *6th Report on the World Nutrition Situation: Progress in Nutrition*. 2010. Geneva, Switzerland: United Nations Standing Committee on Nutrition

United Nations. 2012. *The Millennium Development Goals* report.

Weingartner L. 2013. Paper I: The concept of food and nutrition security. In: Klennert K, ed. *Achieving food and nutrition security: Actions to meet the global challenge: A training course reader*. German Society for International Cooperation

United Nations Children's Fund, World Health Organization, and the World Bank. 2012. *UNICEF-WHO-World Bank joint child malnutrition estimates: Levels & trends in child malnutrition*.

PEER-REVIEWED CONGRESS PAPER

Exploring cooking skills, food preparation, and quality of dinner meals in Australian households during COVID-19

Neha Rathi[1], Janandani Nanayakkara[2], Anthony Worsley[2] & Rimante Ronto[3]
[1]Banaras Hindu University, Varanasi, 221005, Uttar Pradesh, India
[2]Deakin University, Geelong, Australia
[3]Macquarie University, NSW 2109, Australia

Abstract

Introduction: *The unprecedented COVID-19 pandemic and associated lockdowns has had a significant impact on the socio-cultural and food environment in Australia and globally, with potential implications for dietary and culinary practices. We explored Australian primary food gatekeepers' cooking skills, meal preparation behaviours, and the quality of dinner meals based on food groups during the COVID-19 pandemic and its associated lockdowns.*

Methods: *A convenience sample of 25 primary food gatekeepers was recruited from different states of Australia to participate in semi-structured interviews. During the online interviews, the food gatekeepers were asked to share photographs of three dinner meals prepared by them. Meal quality (number of food groups), a food preparation scale, and a cooking skills tool were used to analyse the dinner photographs.*

Results: *Seventy-three dinner photographs were provided by the participants. The majority of meals (n = 51, 81%) were prepared by the gatekeepers using raw ingredients with only eight meals (11%) being categorised as takeout or restaurant meals. Peeling and chopping vegetables (100%); use of herbs and spices (92%); chopping, mixing and stirring foods (88%); boiling or simmering food (88%), and fry/stir-fry food (80%) emerged as the five most frequently practised cooking skills. The mean number of food skills used in dinner meal preparation was 6.68 (SD 1.52). Vegetables and legumes/beans (89%) and grains (75%) were the most popular core food groups for dinner meals. Fruits (12%) and dairy and/or alternatives (11%) rarely featured as part of the dinner meals. Besides the five core food groups, the use of unsaturated spreads and oils (79%) was very common during the preparation of dinner.*

Conclusions: *Overall, the primary food gatekeepers practised a variety of cooking skills and the quality of their dinner meals was relatively healthy. Future research could explore if these cooking skills and food preparation behaviours continue post COVID-19.*

Introduction

The unprecedented COVID-19 pandemic arising from Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Cov-2) infection has disturbed the daily life of millions of people around the globe (World Health Organization, 2021). In an attempt to contain this health crisis, several countries including Australia (Department of Health, 2020) adopted different preventive measures including sealing of inter-state and international borders, lockdowns, curfews,

Rathi, N., Ronto, R., Nanayakkara, J., & Worsley, A.(2022). Exploring cooking skills, food preparation, and quality of dinner meals in Australian households during COVID-19. *International Journal of Home Economics, 15*(2), 138-150.

Neha Rathi ✉ neha.nutri01@gmail.com

confinement at home, and physical distancing (Laborde et al., 2020). The enforcement of these measures was vital to mitigate the transmission of the deadly pathogen (Laborde et al., 2020). However, this enforcement had a significant impact on the socio-cultural and food environments (Laborde et al., 2020).

A new business model, that is, "working from home" emerged as one of the most striking changes in the socio-cultural environment (Kramer & Kramer, 2020; Laborde et al., 2020). Besides this, COVID-19 and its associated restrictions led to the closure of a number of business establishments resulting in widespread unemployment with associated financial burdens (Blustein et al., 2020; Hensher, 2020). In the same vein, the food environment was also challenged by the regulatory measures, (Hobbs, 2020; Laborde et al., 2020) that is, there were limitations over dining in restaurants in a number of countries, for example, New Zealand (Gerritsen et al., 2021), Australia (Victorian Department of Health and Human Services, 2020) and also restaurants were only permitted to offer take-away or home delivery services as seen in the state of Victoria, Australia (Victorian Department of Health and Human Services, 2020).

In view of these societal changes, people in Australia as well as other parts of the world made changes to their cooking and eating practices, meal planning and food purchasing behaviours (De Backer et al., 2020; Menon et al., 2021; Murphy et al., 2021; Ronto et al., 2021). The fear of infection and long queues in supermarkets compelled many consumers to shift to online shopping as it was convenient, safe, and time saving (Menon et al., 2021; Ronto et al., 2021). Some people resorted to "panic buying" as they were uncertain about the present and future food supplies (Hall et al., 2021; Murphy et al., 2021).

The limited functioning and/or closure of food service establishments considerably reduced the purchase of food from them (e.g., take-away meals) (Murphy et al., 2021; Scarmozzino & Visioli, 2020) with subsequent increases in home cooking (Carroll et al., 2020; Hobbs, 2020; Murphy et al., 2021) and food literacy (De Backer et al., 2020). Nevertheless, the stress, anxiety and boredom experienced by many during the lockdown resulted in increased consumption of food, especially unhealthy foods as seen in Italian (Scarmozzino & Visioli, 2020), Canadian (Carroll et al., 2020), and Australian (Buckland & Kemps, 2021) households. Collectively, these changes may have potential implications for dietary health (Neira et al., 2021). Therefore, it is important to understand the role of COVID-19 on the development of new cooking skills, the level of meal preparation (e.g., cooking from scratch) and the dietary quality of meals.

Many previous studies of home food preparation have relied on interviews or questionnaire surveys (Clifford Astbury et al., 2019; De Backer et al., 2020; Fertig et al., 2019; Han, 2018). In the present study we employed digital photography. Digital food photography (DFP) has recently attracted great attention in the context of dietary assessment. This increasing popularity is endorsed by several researchers who identify DFP as a valid and reliable dietary assessment tool used to quantify the energy and nutrient intake of both children (Martin et al., 2010; Nicklas et al., 2018; Williamson et al., 2013) and adults (Boushey et al., 2017; Martin et al., 2014; McClung et al., 2017; Williamson et al., 2002). Besides estimating dietary intake, DFP also may provide a valuable opportunity to gauge other aspects of mealtimes including food preparation, meal timing, meal setting and concordance, and quality and quantity of food items served to different family members (McCloskey et al., 2019). Beyond dietary assessment, digital photography has been widely implemented in health behaviour research for investigating school-based health environments (Kontak et al., 2017), community-built environments (Chow et al., 2014), and the obesogenic environment of adolescents (Staiano et al., 2011). Photographs are a rich and compelling data source and have the potential to provide deep and comprehensive insights about the context of health and food-related behaviours (McCloskey et al., 2019).

The use of digital food photography has been quite popular among food consumers during COVID-19 pandemic as it allowed them to upload pictures of new recipes they had tried on social media (e.g., Facebook, Instagram) (MICHELIN Guide, 2021; Torres-Romay & Garcia-Miron, 2020). As part of our previous qualitative study on culinary behaviours (Ronto et al., 2021), we had asked our study participants, that is, Australian household food gatekeepers to share three photographs of the dinner meals consumed during the pandemic (Ronto et al., 2021). Therefore, the aim of the present study was to analyse these food photographs in order to explore the cooking skills, meal preparation behaviours, and quality of dinner meals based on food groups in Australian households during the pandemic.

Methods

A qualitative study was undertaken using semi-structured interviews as the data collection method to explore Australian primary food gatekeepers' cooking and food preparation skills during the COVID-19 pandemic and associated lockdowns. The primary food gatekeepers were invited to take part in the interviews through placing advertisements on social media (e.g., Facebook, Instagram, Twitter) and through personal networks. An informed consent form was provided to all participants. Prior to the interview, the participants were instructed to send three photographs of their dinners on different days (either weekdays or weekend) which they either prepared by themselves or purchased during the COVID-19 lockdown. All the dinner food photographs were sent by email and interviews were conducted using Zoom teleconferencing software between June and October 2020. At the beginning of the interview, participants provided a brief socio-demographic information and description of the dinner meals. This manuscript will report the analysis of Australian primary food gatekeepers' dinner meal photographs. Their perceptions of changes in culinary behaviours during the pandemic has been reported elsewhere (Ronto et al., 2021). Ethical approval was granted by Medicine and Health Sciences Subcommittee of Macquarie University (Project ID: 6692; Reference No. 52020669215870).

All dinner plate photographs were deidentified and coded with number of participant and number of the photograph, for example, Participant 1.1., Participant 1.2. and so on. The photographs were analysed to assess cooking skills, meal preparation behaviours, and the quality of dinner meals based on food groups. The research team, who are experts in public health nutrition, food literacy including cooking skills and qualitative research, created the data coding template and met on regular basis to discuss data coding. One investigator (Neha Rathi) did the initial coding, and two other investigators (Janandani Nanayakkara, Rimante Ronto) cross-checked the data and made minor modifications to the coding.

First, the investigators identified, and coded cooking skills used to prepare home cooked meals using validated cooking skills confidence measure (Lavelle et al., 2020). Food photographs including take-away food bought outside from home were excluded from this analysis. Cooking skills refer to physical or mechanical skills used in the production of a meal encompassing cooking methods and food preparation techniques (Lavelle et al., 2020). In total, 14 cooking skills were used to code the data: peel and chop vegetables; use herbs and spices; chop, mix and stir foods, boil or simmer foods; fry/stir-fry food in a frying pan/wok with oil/fat; prepare and cook raw meat/poultry; make sauces and gravy from scratch; prepare and cook raw fish; roast food in the oven; blend foods to make them smooth, like soups or sauces; steam food; stew food; microwave food; and bake goods (Lavelle et al., 2020). The cooking skill "roast food in the oven" was modified to "roast food in the oven/pan" as several participants roasted food on the pan rather than oven. Then, we calculated the frequencies of different cooking skills used by participants and the number of skills possessed by each participant. Second, we used a meal preparation scale to measure the level of meal preparation (McCloskey et al., 2019). This scale ranged from 0–3, in which 0 was given to a takeout or restaurant meal, 1 was given for a convenience or ready to heat or eat meal, 2 was given for a semi-convenience meal, and 3 was given to a non-convenience meal prepared mainly from raw ingredients (See Figure 1).

Takeout or restaurant meal (0)	**Convenience or ready to heat/eat meal (1)**
 Photo 1 Chicken skewers with fresh salad (leaves, tomato, cucumber) and side sauce	 Photo 2 Frozen-precooked dumplings
Semi-convenience meal (2)	**Non-convenience meal (3)**
 Photo 3 Chilean hot dog	 Photo 4 Rice and vegetable curry with tofu

Figure 1 Meal preparation scale with examples

Finally, we analysed participants' dinner plate photographs based on five core food groups using the Australian Guide to Healthy Eating (National Health and Medical Research Council, 2013): 1) vegetables and legumes/beans; 2) fruit; 3) grain; 4) lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans; 5) milk, yoghurt, cheese and/or alternatives, mostly reduced fat. We also assessed non-core food groups such as unsaturated spreads and oils, and discretionary choices. We calculated frequencies for both the level of meal preparation and food groups.

Results

Socio-demographic characteristics of the sample

Twenty-five gatekeepers participated in this study, who provided in total 73 photographs. Majority of our participants were females (84%) and had attained a university degree (84%). Three-fifths of the sample (60%) were aged between 31–40 years and 44% identified as Caucasian origin. Except for one gatekeeper, all the other gatekeepers were employed prior to the pandemic restrictions and four of them reported loss of their jobs during the pandemic. Nearly three quarters of the households did not have children (72%). The socio-demographic characteristics of the gatekeepers are presented in Table 1.

Table 1 Demographic characteristics of the sample (*N* = 25)*

Sociodemographic items		*N*	%
Gender	Female	21	84
	Male	4	16
Age	21-30 years	8	32
	31–40 years	15	60
	41-50 years	2	8
Education	High school/Diploma	4	16
	Bachelors	5	20
	Masters	12	48
	Doctorate	4	16
Ethnicity	Caucasian	11	44
	South Asian	12	48
	East Asian	2	8
Employment status before lockdown	Yes	24	96
	No	1	4
Employment status during lockdown	Yes	20	80
	No	5	20
Children <16 years living in the household	0	18	72
	1-2	5	20
	≥3	2	8

Note: *(Ronto et al., 2021)

Cooking skills used by primary food gatekeepers in preparing dinner meals

The majority of participants (≥80%) used the following five cooking skills in their dinner meal preparation: peeling and chopping vegetables (100%); use of herbs and spices (92%); chopping, mixing and stirring foods (88%); boiling or simmering food (88%), and fry/stir-fry food (80%) (Table 2). Cooking skills such as steam (12%) or stew (8%) food, microwave (8%) and bake goods (4%) were the least used in meal preparation by the participants. One third of participants (32%) used eight and nearly half of the participants (46%) used seven to 10 different cooking skills in their meal preparation (Table 3). The mean number of cooking skills used in dinner meal preparation was 6.68.

Table 2 Type of cooking skills used by primary food gatekeepers in dinner meal preparation (*N* = 25)

Cooking skill	*N*	%
Peel & chop vegetables	25	100
Use herbs & spices	23	92
Chop, mix & stir foods	22	88
Boil or simmer food	22	88
Fry/Stir-fry food in a frying pan/wok with oil/fat	20	80
Prepare & cook raw meat/poultry	15	60
Make sauces & gravy from scratch	13	52
Prepare & cook raw fish	8	32
Roast food in the oven/pan	7	28
Blend foods to make them smooth, like soups or sauces	4	16
Steam food	3	12
Stew food	2	8
Microwave food	2	8
Bake goods	1	4

Table 3 The number of cooking skills used by participants (*N* = 25)

No of skills	*N*	%
Four	3	12
Five	1	4
Six	8	32
Seven	5	20
Eight	6	24
Nine	1	4
Ten	1	4

The level of meal preparation of dinner meals

The majority of meals (81%) were prepared by the gatekeepers using raw ingredients with only 12 meals (17%) being categorised as takeout or convenience meals (see Table 4).

Table 4 The level of meal preparation identified in dinner meal photographs (*N* = 73)

Level of meal preparation	*N*	%
Takeout or restaurant meal (0)	8	11
Convenience or ready to heat or eat meal (1)	2	3
Semi-convenience meal (2)	2	3
Non-convenience meal prepared primarily from raw ingredients (3)	59	81
*Non-convenience meal prepared primarily from raw ingredients (3) with takeout or restaurant meal (0)	1	1
*Non-convenience meal prepared primarily from raw ingredients (3) with convenience or ready to heat or eat meal (1)	1	1

Note: *Two levels of meal preparation have been used to prepare these dinner meals

Food groups identified in dinner meals prepared/purchased by primary food gatekeepers

The majority of meals (76%) included two to three food groups per meal. Vegetables and legumes/beans (Group 1) (89%), grains (Group 3) (75%) and meats/fish or alternatives (Group 4) (71%) were the most popular core food groups for dinner meals. Fruits (12%) and dairy and/or alternatives (11%) rarely featured as part of the dinner meals. Besides the five core food groups, the use of unsaturated spreads and oils (79%) was very common during the preparation of dinner meals. Only 12 meals (16%) included discretionary foods.

Table 5 Food groups used by primary food gatekeepers for dinner meal preparation (*N* = 73)

	Presence of food groups in meals	*N*	%
Number of core food groups	0	2	3
	1	5	7
	2	26	36
	3	29	40
	4	10	14
	5	1	1
Types of food groups	Group 1 Vegetables and legumes/beans	65	89
	Group 2 Fruit	9	12
	Group 3 Grain	55	75
	Group 4 Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	52	71
	Group 5 Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	8	11
	Unsaturated spreads and oils	58	79
	Discretionary choices	12	16

Discussion

Photographs of dinner meals provided by the household food gatekeepers along with the descriptions of these meals were used to explore the Australian primary household food gatekeepers' meal preparation behaviours and cooking skills, and the quality of the dinner meals. Overall, the photographs revealed that during the COVID-19 pandemic and associated lockdowns, the gatekeepers prepared healthy dinner meals from scratch, and they employed a variety of cooking skills to prepare these meals. Digital food photography (DFP) is becoming a popular tool in assessing food intake and plate waste and capturing details on eating context (e.g., use of utensils and food serving techniques) (Elliott et al., 2021; Lindsay et al., 2021; McCloskey et al., 2019; Norman et al., 2020) in different settings such as schools, preschools and day-care centres. The present study is unique in two ways. First, according to the best of the authors' knowledge, this is the first study that used DFP in capturing the household food gatekeepers' food preparation behaviours and quality of dinner meals during the COVID-19 pandemic and associated lockdowns. Secondly, this study demonstrated the new potential for employing DFP in deriving objective measurement of cooking skills.

Cooking meals at home from scratch have been shown to be associated with many benefits such as developing the cooking skills of family members, improving family food interactions, transferring food skills to children, and importantly improving the healthiness of meals (Mills et al., 2020; Wolfson & Bleich, 2015). A consumer survey conducted in pre-pandemic times reported that two-thirds of Australians prepared their dinner meal from scratch (Ipsos, 2016). This was high as 76% for older Australians (>60 years) whereas it was just over 50% for the 18-29 years old group (Ipsos, 2016). However, this survey identified that certain segments of the population such as young adults and young families showed an increasing tendency to eat away-from-home food (Ipsos, 2016). In our study, most of the dinner meals were prepared at home from scratch. The online surveys done in the United Kingdom (Snuggs & McGregor, 2021), Croatia (Pfeifer et al., 2021), New Zealand (Gerritsen et al., 2021) during the COVID-19 pandemic and associated lockdowns report similar findings. The pandemic related circumstances (e.g., increase availability of time as most gatekeepers were working from home, reluctant to order food from food delivery services due to safety concerns, and limited- or non-availability of on-premises dining in food outlets) may have triggered this behaviour (Menon et al., 2021; Ronto et al., 2021; Snuggs & McGregor, 2021). Future studies should investigate whether these positive food preparation practices continue post-pandemic times.

Dinner plate photographs and the descriptions revealed that most gatekeepers employed cooking skills such as peeling, chopping, stirring, and boiling in preparing their dinner meals.

Also, most gatekeepers fried or stir-fried food with the use of oil or fat to prepare their dinner. Certain cooking skills such as cooking raw meat/ poultry and making sauces and gravy from scratch were employed by slightly over half of the gatekeepers, whereas cooking fish was employed by fewer participants. This could be because the gatekeepers had not prepared these animal sources over the three days that they took dinner photos. Even it could be due to their preference or even having lower skills in preparing these food items. Overall, a majority of gatekeepers exhibited 6–8 cooking skills through the three dinner plate photographs they shared. This may have helped the gatekeepers to prepare high quality and diverse dinner meals. Previous research has shown that there is a positive relationship between self-reported cooking skills and diet quality (Lavelle et al., 2020). Future research should explore whether the gatekeepers use these skills routinely in preparing their dinner meals in post-pandemic times.

In Australia, baked dinner (i.e., roasted meat with vegetables is most often prepared and served as a weekend dinner which is often enjoyed with the family members and guests (Lupton, 2000). In the present study, baking was used by just one gatekeeper in preparing dinner meals. There could be a few possible explanations for this. We did not specifically ask to take dinner meals at weekends, thus leaving out such meals if prepared. The qualitative interviews revealed that some of the gatekeepers increased baking of other food items such as cakes, cookies, and savoury pastries (Ronto et al., 2021). It could be another reason why they did employ the same cooking method to make their dinner. Only two gatekeepers reported using microwaving as a cooking skill in preparing their dinner meals. Most often, microwaving is used to re-heat food as opposed to cook meals (Lavelle et al., 2017). Perhaps this could be why microwaving was sparsely mentioned in this study.

Overall, a majority of dinner meals comprised of 2–3 core food groups (i.e., vegetables, grains and proteins sources were the frequent food groups) indicating the dinner meals were of high quality. A recent consumer survey reports similar findings where fresh vegetables, meat and poultry were the most common food groups followed by grain-based products such as rice, pasta, and bread in Australian dinner (Ipsos, 2016). Dinner is the most important meal of the day for most Australians (Litterbach et al., 2017; Lupton, 2000). Perhaps that is why the gatekeepers in our study tried to incorporate a few core food groups including vegetables in these dinner meals. Though there are no obvious differences in the types of food groups present in these dinner meals from that of previous research (Ipsos, 2016), there could be differences in types and complexity of dishes. As depicted by dinner photos, some of the meals were comprised of complex and elaborated (i.e., more time consuming to prepare) food items/ dishes.

As mentioned by these gatekeepers (Ronto et al., 2021), increased time availability associated with working from home enabled them to make more time-consuming dishes that they would not normally prepare for dinner during a typical pre-pandemic working day. Follow-up studies should explore whether the gatekeepers continue to make these time-consuming and complex dishes post-pandemic times.

A higher number of dinner meals featured fats and oils as an ingredient or cooking medium. However, it is not known the type of fat or oil the gatekeepers used to prepare these meals. The Australian dietary guidelines recommend limiting the intake of food high in saturated fats to reduce cardiovascular disease risks (National Health and Medical Research Council, 2013). As mentioned earlier, future studies should explore gatekeepers' practices related to the use of fats and oils in their cooking. Such studies are important to understand the type, quantity, and frequency of using fats and oils in cooking and ways of supporting them in using healthier fats and oils in their cooking as required.

Strengths and Limitations

Several studies have reported the influence of the COVID-19 pandemic and associated lockdowns on food preparation and consumption behaviours of people (Caso et al., 2022; Hayashi & Takemi, 2021; Murphy et al., 2021; Pfeifer et al., 2021; Phillipou et al., 2020). These studies have employed the usual self-reported assessment of food preparation skills and food intake. The novelty of this study is the use of dinner plate photographs to derive objective measurements of the food preparation behaviours, cooking skills, and quality of dinner meals eaten during the COVID-19 pandemic and associated lockdowns. This method allowed us to capture the quality of dinner meals with minimal burden to the participants having to recall what they used to prepare their dinner meals. Multiple photographs from each gatekeeper provided diverse information related to their dinner practices compared to a single dinner photograph, which may therefore accurately exhibit their usual dietary habits during the pandemic and lockdowns.

This study did not intend to measure the number of servings of each food group presented in the study, therefore we did not provide the gatekeepers with any instructions related to food portion size. Thus, some gatekeepers took photos of their individual dinner meal whereas others took photos of their entire family dinner. However, this did not influence our analysis as we just counted and recorded the number of food groups present in each meal.

The participants were asked not to change their usual dietary patterns to take photographs for this study. However, it may be possible that some have made changes to their usual dinner meals to make them more appealing and healthier. Participants were asked to take photos of their dinner meals only. If they had anything later as a part of their dinner meals such as desserts, tea, coffee, these may not have been captured in these photos. Although most gatekeepers provided photographs of three dinner meals, the overall sample size was small. Also, the ethnic composition of the study participants could have influenced the types of cooking skills and core ingredients they used in preparing dinner meals. In future studies, a large sample with diverse ethnic backgrounds is needed to determine the quality and diversity of dinner meals in Australia. The participants were only asked to take photographs of the dinner plates. Therefore, we could not explore the eating location, food interactions, or utensils used during dinner time. In future studies, participants should be asked to capture both their dinner plates with actual food quantities they serve on to them along with the dinner set-up to capture these details.

Implications for research and practice

Capturing the photographs of daily meals can be used as a self-monitoring and reflecting tool, (Andersen et al., 2021) that is, opportunity to revisit the meals and think of how the meals align with one's personal nutrition goals, values, enjoyment, budget and so on. The household food gatekeepers should be taught how they can use the meal photos to monitor and track their cooking skills and diet quality and then make necessary amendments.

The pandemic and associated public health safety measures have caused many changes in the Australians' lifestyle and some of these changes may likely continue for quite a long period (for example, working from home). Therefore, such lifestyle changes may likely influence the food preparation and consumption behaviours of Australians over the next few years. A global cross-cultural study of meal practices using the photographs would capture the diversity of meals across households belonging to different ethnic groups and geographical locations. With a minimal burden to respondents, photographs can provide rich insights into the diversity of meals and food preparation practices (Bekelman et al., 2019; Lindsay et al., 2021; Mills et al., 2017) and explore the needs for improving the quality of meals.

Conclusions

In sum, during the COVID-19 pandemic and associated lockdowns, the primary food gatekeepers of this study used a considerable number of cooking skills in preparing their dinner meals. The majority of meals were prepared at home from scratch and overall, the meals were of high dietary quality.

References

Andersen, T., Byrne, D. V., & Wang, Q. J. (2021). How Digital Food Affects Our Analog Lives: The Impact of Food Photography on Healthy Eating Behavior [Review]. *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.634261

Bekelman, T. A., Bellows, L. L., McCloskey, M. L., Martin, C. K., & Johnson, S. L. (2019). Assessing dinner meals offered at home among preschoolers from low-income families with the Remote Food Photography Method. *Pediatric Obesity, 14*(11), e12558. https://doi.org/https://doi.org/10.1111/ijpo.12558

Blustein, D. L., Duffy, R., Ferreira, J. A., Cohen-Scali, V., Cinamon, R. G., & Allan, B. A. (2020). Unemployment in the time of COVID-19: A research agenda. *Journal of Vocational Behavior, 119*, 103436. Retrieved 2020/06/01/, from https://www.sciencedirect.com/science/article/pii/S0001879120300610

Boushey, C. J., Spoden, M., Zhu, F. M., Delp, E. J., & Kerr, D. A. (2017). New mobile methods for dietary assessment: review of image-assisted and image-based dietary assessment methods. *Proceedings of the Nutrition Society, 76*(3), 283-294. https://doi.org/10.1017/S0029665116002913

Buckland, N. J., & Kemps, E. (2021). Low craving control predicts increased high energy density food intake during the COVID-19 lockdown: Result replicated in an Australian sample. *Appetite, 166*, 105317. https://doi.org/https://doi.org/10.1016/j.appet.2021.105317

Carroll, N., Sadowski, A., Laila, A., Hruska, V., Nixon, M., Ma, D. W. L., & Haines, J. (2020). The Impact of COVID-19 on Health Behavior, Stress, Financial and Food Security among Middle to High Income Canadian Families with Young Children. *Nutrients, 12*(8). https://doi.org/10.3390/nu12082352

Caso, D., Guidetti, M., Capasso, M., & Cavazza, N. (2022). Finally, the chance to eat healthily: Longitudinal study about food consumption during and after the first COVID-19 lockdown in Italy. *Food Quality and Preference, 95*, 104275. https://doi.org/https://doi.org/10.1016/j.foodqual.2021.104275

Chow, C. K., Corsi, D. J., Lock, K., Madhavan, M., Mackie, P., Li, W., Yi, S., Wang, Y., Swaminathan, S., Lopez-Jaramillo, P., Gomez-Arbelaez, D., Avezum, Á., Lear, S. A., Dagenais, G., Teo, K., McKee, M., & Yusuf, S. (2014). A Novel Method to Evaluate the Community Built Environment Using Photographs – Environmental Profile of a Community Health (EPOCH) Photo Neighbourhood Evaluation Tool. *PLOS ONE, 9*(11), e110042. https://doi.org/10.1371/journal.pone.0110042

Clifford Astbury, C., Penney, T. L., & Adams, J. (2019). Comparison of individuals with low versus high consumption of home-prepared food in a group with universally high dietary quality: a cross-sectional analysis of the UK National Diet & Nutrition Survey (2008–2016). *International Journal of Behavioral Nutrition and Physical Activity, 16*(1), 9. https://doi.org/10.1186/s12966-019-0768-7

De Backer, C., Teunissen, L., Cuykx, I., Decorte, P., Pabian, S., Gerritsen, S., Matthys, C., Al Sabbah, H., Van Royen, K., & Group, C. C. S. S. (2020). An evaluation of the COVID-19 pandemic and perceived social distancing policies in relation to planning, selecting, and preparing healthy meals: an observational study in 38 countries worldwide. *Frontiers in Nutrition, 7*. https://doi.org/https://dx.doi.org/10.3389%2Ffnut.2020.621726

Department of Health. (2020). Coronavirus (COVID-19) health alert.In *Australian Government Department of Health*. Retrieved 26 October 2020 from https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert

Elliott, S., McCloskey, M. L., Johnson, S. L., Mena, N. Z., Swindle, T., & Bellows, L. L. (2021). Food Photography as a Tool to Assess Type, Quantity, and Quality of Foods in Parent-Packed Lunches for Preschoolers. *Journal of nutrition education and behavior, 53*(2), 164-173. https://doi.org/https://doi.org/10.1016/j.jneb.2020.10.007

Fertig, A. R., Loth, K. A., Trofholz, A. C., Tate, A. D., Miner, M., Neumark-Sztainer, D., & Berge, J. M. (2019). Compared to Pre-prepared Meals, Fully and Partly Home-Cooked Meals in Diverse Families with Young Children Are More Likely to Include Nutritious Ingredients. *Journal of the Academy of Nutrition and Dietetics, 119*(5), 818-830. https://doi.org/https://doi.org/10.1016/j.jand.2018.12.006

Gerritsen, S., Egli, V., Roy, R., Haszard, J., Backer, C. D., Teunissen, L., Cuykx, I., Decorte, P., Pabian, S. P., Van Royen, K., & Te Morenga, L. (2021). Seven weeks of home-cooked meals: changes to New Zealanders' grocery shopping, cooking and eating during the COVID-19 lockdown. *Journal of the Royal Society of New Zealand, 51*(sup1), S4-S22. https://doi.org/10.1080/03036758.2020.1841010

Hall, M. C., Prayag, G., Fieger, P., & Dyason, D. (2021). Beyond panic buying: consumption displacement and COVID-19. *Journal of Service Management, 32*(1), 113-128. https://doi.org/10.1108/JOSM-05-2020-0151

Han, G. (2018). Dietary Assessment and Frequency of Home Meals according to the Socio-economic Characteristics of Korean Adults: Data from the Korea National Health and Nutrition Examination Survey 2013~ 2015. *The Korean Journal of Community Living Science, 29*(2), 169-183.

Hayashi, F., & Takemi, Y. (2021). Factors Influencing Changes in Food Preparation during the COVID-19 Pandemic and Associations with Food Intake among Japanese Adults. *Nutrients, 13*(11). https://doi.org/10.3390/nu13113864

Hensher, M. (2020). COVID-19, unemployment, and health: time for deeper solutions? *BMJ*. https://doi.org/https://doi.org/10.1136/bmj.m3687

Hobbs, J. E. (2020). Food supply chains during the COVID-19 pandemic [https://doi.org/10.1111/cjag.12237]. Canadian *Journal of Agricultural Economics/Revue canadienne d'agroeconomie, 68*(2), 171-176. https://doi.org/https://doi.org/10.1111/cjag.12237

Ipsos. (2016). *Australia's most comprehensive study integrating consumer attitudinal trends with consumption behaviour change Annual Report 2015-16*. A. Ipsos.

Kontak, J. C. H., McIsaac, J.-L. D., Penney, T. L., Kuhle, S., & Kirk, S. F. L. (2017). The picture of health: examining school-based health environments through photographs. *Health Promotion International, 32*(2), 322-330. https://doi.org/10.1093/heapro/daw027

Kramer, A., & Kramer, K. Z. (2020). The potential impact of the COVID-19 pandemic on occupational status, work from home, and occupational mobility. *Journal of Vocational Behavior, 119*, 103442. https://doi.org/https://doi.org/10.1016/j.jvb.2020.103442

Laborde, D., Vos, R., & Martin, W. J. (2020). Poverty and food insecurity could grow dramatically as COVID-19 spreads. In *Food Securlty, Poverty, and Inequallty* (pp. 16-19). International Food Policy Research Institute (IFPRI).

Lavelle, F., Bucher, T., Dean, M., Brown, H. M., Rollo, M. E., & Collins, C. E. (2020). Diet quality is more strongly related to food skills rather than cooking skills confidence: Results from a national cross-sectional survey. *Nutrition & Dietetics, 77*(1), 112-120.

Lavelle, F., McGowan, L., Hollywood, L., Surgenor, D., McCloat, A., Mooney, E., Caraher, M., Raats, M., & Dean, M. (2017). The development and validation of measures to assess cooking skills and food skills. *International Journal of Behavioral Nutrition and Physical Activity, 14*(1), 118. https://doi.org/10.1186/s12966-017-0575-y

Lindsay, J., Tanner, C., Leahy, D., Supski, S., Wright, J., & Maher, J. (2021). The family meals imperative and everyday family life: an analysis of children's photos and videos. *Critical Public Health, 31*(1), 77-89. https://doi.org/10.1080/09581596.2019.1684443

Litterbach, E.-k. V., Campbell, K. J., & Spence, A. C. (2017). Family meals with young children: an online study of family mealtime characteristics, among Australian families with children aged six months to six years. *BMC Public Health, 17*(1), 111. https://doi.org/10.1186/s12889-016-3960-6

Lupton, D. (2000). The heart of the meal: food preferences and habits among rural Australian couples. *Sociology of Health & Illness, 22*(1), 94-109. https://doi.org/https://doi.org/10.1111/1467-9566.00193

Martin, C. K., Nicklas, T., Gunturk, B., Correa, J. B., Allen, H. R., & Champagne, C. (2014). Measuring food intake with digital photography [https://doi.org/10.1111/jhn.12014]. *Journal of Human Nutrition and Dietetics, 27*(s1), 72-81. https://doi.org/https://doi.org/10.1111/jhn.12014

Martin, C. K., Thomson, J. L., LeBlanc, M. M., Stewart, T. M., Newton, R. L., Jr., Han, H., Sample, A., Champagne, C. M., & Williamson, D. A. (2010). Children in School Cafeterias Select Foods Containing More Saturated Fat and Energy than the Institute of Medicine Recommendations. *The Journal of Nutrition, 140*(9), 1653-1660. https://doi.org/10.3945/jn.109.119131

McCloskey, M. L., Johnson, S. L., Bekelman, T. A., Martin, C. K., & Bellows, L. L. (2019). Beyond Nutrient Intake: Use of Digital Food Photography Methodology to Examine Family Dinnertime. *Journal of nutrition education and behavior, 51*(5), 547-555.e541. https://doi.org/https://doi.org/10.1016/j.jneb.2019.01.020

McClung, H. L., Champagne, C. M., Allen, H. R., McGraw, S. M., Young, A. J., Montain, S. J., & Crombie, A. P. (2017). Digital food photography technology improves efficiency and feasibility of dietary intake assessments in large populations eating ad libitum in collective dining facilities. *Appetite, 116*, 389-394. https://doi.org/https://doi.org/10.1016/j.appet.2017.05.025

Menon, L., Roy Choudhury, D., Ronto, R., Sengupta, R., Kansal, S., & Rathi, N. (2021). Transformation in culinary behaviour during the COVID-19 pandemic: In-depth interviews with food gatekeepers in urban India. *Appetite*. https://doi.org/https://doi.org/10.1016/j.appet.2022.105948

MICHELIN Guide. (2021). Quarantine Cooking: MICHELIN Chefs Share Recipes On Social Media.In *MICHELIN Guide*. Retrieved 11th March 2021 from https://guide.michelin.com/sg/en/article/features/michelin-chefs-recipes-social-media

Mills, S., White, M., Wrieden, W., Brown, H., Stead, M., & Adams, J. (2017). Home food preparation practices, experiences and perceptions: A qualitative interview study with photo-elicitation. *PLOS ONE, 12*(8), e0182842. https://doi.org/10.1371/journal.pone.0182842

Mills, S. D. H., Wolfson, J. A., Wrieden, W. L., Brown, H., White, M., & Adams, J. (2020). Perceptions of 'Home Cooking': A Qualitative Analysis from the United Kingdom and United States. *Nutrients, 12*(1). https://doi.org/10.3390/nu12010198

Murphy, B., Benson, T., McCloat, A., Mooney, E., Elliott, C., Dean, M., & Lavelle, F. (2021). Changes in Consumers' Food Practices during the COVID-19 Lockdown, Implications for Diet Quality and the Food System: A Cross-Continental Comparison. *Nutrients, 13*(1). https://doi.org/10.3390/nu13010020

National Health and Medical Research Council. (2013). Australian Dietary Guidelines.In *National Health and Medical Research Council*. Retrieved 30 November 2021 2013 from https://www.eatforhealth.gov.au/guidelines

Neira, C., Godinho, R., Rincón, F., Mardones, R., & Pedroso, J. (2021). Consequences of the COVID-19 Syndemic for Nutritional Health: A Systematic Review. *Nutrients, 13*(4). https://doi.org/10.3390/nu13041168

Nicklas, T., Islam, N. G., Saab, R., Schulin, R., Liu, Y., Butte, N. F., Apolzan, J. W., Myers, C. A., & Martin, C. K. (2018). Validity of a Digital Diet Estimation Method for Use with Preschool Children. *Journal of the Academy of Nutrition and Dietetics, 118*(2), 252-260. https://doi.org/https://doi.org/10.1016/j.jand.2017.05.005

Norman, Å., Kjellenberg, K., Torres Aréchiga, D., Löf, M., & Patterson, E. (2020). "Everyone can take photos." Feasibility and relative validity of phone photography-based assessment of children's diets – a mixed methods study. *Nutrition Journal, 19*(1), 50. https://doi.org/10.1186/s12937-020-00558-4

Pfeifer, D., Rešetar, J., Kljusurić, J. G., Krbavčić, I. P., Bender, D. V., Rodríguez-Pérez, C., Ruíz-López, M. D., & Šatalić, Z. (2021). Cooking at Home and Adherence to the Mediterranean Diet During the COVID-19 Confinement: The Experience From the Croatian COVIDiet Study. *Frontiers in Nutrition, 8*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8044460/

Phillipou, A., Meyer, D., Neill, E., Tan, E. J., Toh, W. L., Van Rheenen, T. E., & Rossell, S. L. J. I. J. o. E. D. (2020). Eating and exercise behaviors in eating disorders and the general population during the COVID-19 pandemic in Australia: Initial results from the COLLATE project. *International Journal of Eating Disorders, 53*, 1158–1165. https://doi.org/10.1002/eat.23317

Ronto, R., Nanayakkara, J., Worsley, A., & Rathi, N. (2021). COVID-19 & Culinary Behaviours of Australian Household Food Gatekeepers: A Qualitative Study. *Appetite, 167*. https://doi.org/https://doi.org/10.1016/j.appet.2021.105598

Scarmozzino, F., & Visioli, F. (2020). COVID-19 and the Subsequent Lockdown Modified Dietary Habits of Almost Half the Population in an Italian Sample. *Foods, 9*(5), 675. https://www.mdpi.com/2304-8158/9/5/675

Snuggs, S., & McGregor, S. (2021). Food & meal decision making in lockdown: How and who has COVID-19 affected? *Food Quality and Preference, 89*, 104145. https://doi.org/https://doi.org/10.1016/j.foodqual.2020.104145

Staiano, A. E., Baker, C. M., & Calvert, S. L. (2011). Dietary Digital Diaries: Documenting Adolescents' Obesogenic Environment. *Environment and Behavior, 44*(5), 695-712. https://doi.org/10.1177/0013916511403623

Torres-Romay, E., & Garcia-Miron, S. (2020). Influencers and coronavirus. Contents on the COVID-19 pandemic in social network prescriber publications in Spain (2020): the case of Instagram. *Quaderns del CAC*, 77-88. https://doi.org/https://www.cac.cat/sites/default/files/2020-10/Q46_EN.pdf#page=79

Victorian Department of Health and Human Services. (2020). Coronavirus (COVID-19).In *Victorian Deaprtment of Health and Human Services*. Retrieved 26 October 2020 from https://www.dhhs.vic.gov.au/coronavirus

Williamson, D. A., Han, H., Johnson, W. D., Martin, C. K., & Newton, R. L. (2013). Modification of the school cafeteria environment can impact childhood nutrition. Results from the Wise Mind and LA Health studies. *Appetite, 61*, 77-84. https://doi.org/https://doi.org/10.1016/j.appet.2012.11.002

Williamson, D. A., Martin, P. D., Raymond, A. H., Most, M. M., Alfonso, A. J., Thomas, V., & Ryan, D. H. (2002). Changes in Food Intake and Body Weight Associated with Basic Combat Training. *Military Medicine, 167*(3), 248-253. https://doi.org/10.1093/milmed/167.3.248

Wolfson, J. A., & Bleich, S. N. (2015). Is cooking at home associated with better diet quality or weight-loss intention? *Public health nutrition, 18*(8), 1397-1406. https://doi.org/10.1017/S1368980014001943

World Health Organization. (2021). Coronavirus disease (COVID-19).In *WHO*. Retrieved 11 October 2021 from https://www.who.int/health-topics/coronavirus#tab=tab_1

PEER-REVIEWED CONGRESS PAPER

Factors influencing food insecurity empathy: The role of service-learning

Rachel Schichtl, Kathryn A. Carroll & Kimberley Sartain
University of Central Arkansas, United States

Abstract

Prior studies have suggested that service-learning (S-L) courses may have several student benefits, including higher levels of academic learning, greater course satisfaction, and a deeper understanding of societal issues (Carnicelli & Boluk, 2017; Eyler et al., 1997; Moely & Ilustre, 2019). One such societal issue is food insecurity—and increasing students' food insecurity empathy (FIE) may be one way that the field of family and consumer sciences (FCS) can improve community sustainability. Empathy has generally been linked to prosocial behaviors in service-oriented professions (Kou et al., 2020; Silke et al., 2018), and work by Harmon et al. (2017) found that course content may have a positive influence on FIE. Yet no known studies have examined the possible influence of S-L on FIE.

This study examines whether S-L courses and the type of S-L project can influence the FIE of students. During Spring 2021, 108 undergraduate students enrolled in FCS courses at a public university in the southern U.S. completed a survey both pre- and post-course. One course featured a direct S-L project, while the others featured a research-based S-L project. The survey included measures of FIE from Harmon et al. (2017) as well as a food insecurity screener.

Following Social Cognitive Theory (Bandura, 1977) questions concerning student behaviors, their environment, and cognitive factors were also included.

A binary logit model was used to examine the influence of student attributes, course attributes, and demographics on the odds of having food insecurity empathy. The odds of having food insecurity empathy were significantly higher for students who completed a direct S-L project, compared to a research-based S-L project. The odds of having food insecurity empathy were also significantly higher for students who had taken previous S-L courses. These results suggest that FCS courses that incorporate direct S-L projects may have a positive influence on the likelihood of students developing FIE. Taking multiple S-L courses may also benefit students' FIE, providing important implications for curriculum development in higher education and K-12, and for the development of sustainable communities.

KEYWORDS: **HOME ECONOMICS EDUCATION; FOOD INSECURITY; EMPATHY; SERVICE-LEARNING; CURRICULUM DEVELOPMENT; HIGHER EDUCATION; GOOD HEALTH AND WELLBEING; ZERO HUNGER**

Schichtl, R., Carroll, K. A., & Sartain, K. (2022). Factors influencing food insecurity empathy: The role of service-learning. *International Journal of Home Economics, 15*(2), 151-159.

Rachel Schichtl ✉ rschichtl@uca.edu

Introduction

While service-learning (S-L) is not a relatively new concept, there has been increasing interest in recent years in the various ways with which to integrate service-learning into higher education classrooms. The Family and Consumer Sciences (FCS)/Home Economics field is a particularly important field that can incorporate S-L. According to the American Association of Family and Consumer Sciences (AAFCS), the vision of FCS is for individuals, families, and communities to achieve optimal quality of life assisted by competent, caring professionals (About us, n.d.). According to McGregor (2022), S-L is a powerful tool for socializing the next generation of professionals as citizens in the workplace and community. According to the International Federation for Home Economics (IFHE) website, Home Economics draws its strength from a multi-level approach that includes advocacy for the concerns of individuals, families, and their communities (About home economics, n.d.).

One such way that S-L could impact those that participate in such educational opportunities is to provide a way to develop empathetic type of feelings or even behaviors. Empathy is a positive quality that is a contributing factor to prosocial behavior and is a behavior that is meant to help others (Eisenberg & Strayer, 1990). Developing educational opportunities that not only can impact the community but also could increase the student's empathy level is a win-win for not only those that receive the S-L programming but also for the student. Food insecurity empathy or having empathy towards those that are food insecure is one such sort of empathy that has been recently examined as a way to assess the feelings that individuals have regarding food insecurity (Harmon et al., 2017).

Food insecurity continues to be an issue globally, as well as in the United States. This study combines an S-L educational experience that exposes students to food insecurity and subsequently measures the empathy that students feel towards food insecure individuals in their community.

Literature Review

Service-Learning as an Instructional Approach

In recent years, there has been a growing interest in service-learning in higher education. The term service-learning (S-L) can be defined as an educational approach where students learn in the classroom while volunteering with an agency (usually a non-profit or service group). Once the service-learning is completed, students usually reflect to deepen their understanding of what was taught. Some refer to service-learning as philanthropy, civic engagement, or simply volunteerism (Elmhurst, 2019). However, it involves a combination of theories, practice, and reflection as students develop a deeper understanding of the community, agency, and themselves.

There are several types of service-learning activities, but according to Elmhurst (2019), there are three main categories. The first category is called direct service to individuals. This includes those things that work with people such as serving meals and participating in community events. Educational fields often incorporate this type of service-learning into the curriculum. A typical project might be serving in a soup kitchen and assisting in providing for the needs of others (Aslanargun, 2012). The second category is indirect service to people, which may include providing services behind the scenes, such as conducting a research-based project. Organizing events, stocking foods at a food pantry, researching information, or even collecting donations are commonly associated with this type of service-learning. The third category is advocacy, where students actively participate in writing letters or educating others about important topics or causes. Just as there are several categories of service-learning, there are also several benefits to those who participate in service-learning opportunities. Whether it is incorporated into the curriculum or a personal choice, the positive effects of service-learning can be far-reaching.

Benefits of Service-Learning

Service-learning is important in the educational process because of the many benefits it has for students, educators, and the community. Far too often, students' experiences in higher education consist of absorbing facts and information passively (Meyers, 2009). However, when faculty use teaching strategies that incorporate service-learning, they help students make important connections between active learning in the classroom and real-life experiences. Wilson & Schwier (2009) state that the application of community-based approaches provides many real-life experiences for students as they prepare for their future careers. According to the Wisconsin Department of Public Instruction (n.d.), the strongest service-learning experiences occur when the service is meaningful to what is being learned and is a natural extension of the curriculum into the community. Students gain a deeper understanding of content, complex problems populations may face, and the ability to apply what they learn to new situations.

For teachers, service-learning can be incorporated into any discipline, but social sciences, in particular, seem to fit especially well with its design. Service-learning can be a powerful tool in preparing students for life after school and as future professionals. It exposes them to relevant real-life experiences and prepares them to be civic-minded professionals who use their respective fields to improve and advance the well-being of society (Yusop & Correia, 2012). Instructors can help shape and enhance a student's sense of professionalism well before they leave campus (Steffes, 2004). When teachers begin planning service-learning projects, the Wisconsin Department of Public Instruction (n.d.) states that the use of the IPARDC framework can be beneficial. The IPARDC framework is widely used by both educational and non-profit agencies working on service-related projects. It has five components that allow educators to blend instruction with authentic service-learning opportunities. These components include (1) Investigation, (2) Planning, (3) Action, (4) Reflection, and (5) Demonstration/Celebration. As teachers use this framework, it is important to remember that it is cyclical rather than linear in nature. This means revisiting plans as student needs and issues arise. For each component, teachers can carefully blend instruction with service-learning. The Colorado Department of Education (2009) reports that the benefits of service-learning for teachers include engagement of colleagues in collaborative practices, increased relevancy of education for students, and experiencing a renewed enthusiasm for teaching.

Communities can also benefit from service-learning because it not only builds relationships with institutions but provides invaluable services to those who utilize the services provided. The direct assistance and empowerment generated through the involvement of young people, including students can be invaluable. In order for these community partnerships to function well, reciprocity needs to exist between institutions and the community in order for students to experience full educational learning (Petri, 2015). Other benefits to the community include new ideas for organizations, revitalization of areas within the community, as well as helping advance community-focused goals.

Trends in Higher Education

Much has been written on incorporating service-learning into higher education courses. The role of higher education in developing responsible citizens and promoting civic engagement continues to be an important debate in the United States and around the world (Arthur & Bohlin, 2005; Benson & Harkavy, 2000; Bok, 1982; Checkoway, 1997; Fisher, Fabricant, & Simmons, 2004). In fact, Campus Compact (2000) reported that the growth of service-learning in higher education relates to how students achieve both personal and academic goals. It also helps universities promote civic engagements and community outreach.

Colleges and universities have an important role in providing resources to communities through service-learning partnerships. Many serve the community by addressing local educational and health needs through experiential learning opportunities for students (Bringle & Hatcher, 1996). Experiential learning provides students with the opportunity to engage in authentic learning activities outside of the classroom. This is especially important for students in their late adolescence, which is considered an important time for the development of civic engagement (van Goethem et al., 2014). As higher education institutions incorporate service-learning into coursework, Griffith (2012) reported that in the United States, more than 80% of students voluntarily engage in community service. However, in some higher education institutions or countries, participation is mandatory (van Goethem et al., 2014). Regardless of whether service-learning is mandatory or volunteer-based, it can be used as an effective and cost-effective instructional strategy.

Service-learning can offer students, communities, and institutions of higher education with authentic learning opportunities where content learned in the classroom is put into practice. More importantly, service-learning equips institutions with educational practices that can provide meaningful and influential life experiences for their students. Prior research has suggested that students engaging in service-learning (S-L) courses can ultimately develop higher levels of academic learning, greater course satisfaction, and a deeper understanding of societal issues (Carnicelli & Boluk, 2017; Eyler et al., 1997; Moely & Ilustre, 2019).

Food Insecurity in the United States

Food insecurity (FI) continues to be one such societal issue that S-L courses may be able to positively impact. FI is defined by the United States Department of Agriculture (USDA) as having “limited or uncertain access to an adequate and safe food supply” (Coleman-Jensen et al., 2018). According to a 2018 report by the USDA-Economic Research Service (ERS), 11.8% of U.S. households were food insecure (Coleman-Jensen et al., 2018). This prevalence of FI is even higher for U.S. households at or below the federal poverty line, households with children, households headed by a single parent, and single individuals living alone (Coleman-Jensen et al., 2018).

Minority households, and those in principal cities or nonmetropolitan areas, are also at higher risk of FI (Coleman-Jensen et al., 2018). Households in the Southern U.S. report the highest prevalence of FI (13.4%), where states such as Arkansas rank second in the country in terms of FI households (Ziliak & Gundersen, 2018). Given the high prevalence of food insecurity in Arkansas, S-L courses in this part of the country may be particularly well-suited to develop future family and consumer science professionals who are actively engaged with societal health and wellbeing.

Food Insecurity Empathy

Increasing students’ food insecurity empathy (FIE) may be one way that the field of family and consumer sciences can actively improve community sustainability. Empathy is often thought of as a positive quality as it contributes to prosocial behavior (Eisenberg & Strayer, 1990). Empathy in general helps individuals reflect on how their actions might influence others (Ryder & Decker, 2010), and has been linked to prosocial behaviors in service-oriented professions (Kou et al., 2020; Silke et al., 2018). Food insecurity empathy has been measured previously among college students by Harmon et al. (2017) and Schichtl (2020) through the use of the Food Insecurity Empathy (FIE) Survey and can be used to examine changes in student empathy levels.

Prior research by Harmon et al. (2017) found that course content may have a positive influence on FIE levels. Yet to the knowledge of the authors, no research has yet to examine the possible influence of S-L on students’ food insecurity empathy. This study examines whether S-L courses and the type of S-L project can influence the FIE of college students enrolled in undergraduate family and consumer science courses.

Methodology

To examine the impact of an S-L family and consumer science course on food insecurity empathy levels, the objectives of this study were to: 1) determine whether the type of S-L project (direct or research-based S-L) impacted the likelihood of having food insecurity empathy, and 2) examine whether student demographics impacted FIE. Given that prior efforts by Harmon et al. (2017) suggest course content may influence FIE, it is hypothesized that the type of S-L project will significantly influence FIE, although it is unclear whether direct or research-based S-L may be more effective. It could be that direct S-L, such as those discussed by Aslanargun (2012), may influence FIE due to the direct service being provided to individuals during the S-L project. It is also hypothesized that upperclassmen, and students who had previously taken S-L courses, may be more likely to exhibit food insecurity empathy.

During the Spring 2021 semester, undergraduate students enrolled in three different FCS courses at a 4-year public university in the Southern U.S. were invited to participate in an online survey administered via Qualtrics survey software. These three courses each represented different FCS topics: personal finance, nutrition, and family and consumer sciences education. However, each course incorporated related S-L projects that were affiliated with the American Heart Association's Healthy for Life (HFL) program. Each S-L project focused on a different aspect of a series of cooking demonstrations being conducted at a food pantry close to campus.

Students in each course also completed the same pre- and post-reflection assignments for their S-L project. Due to the COVID-19 pandemic, students in all three courses participated in their S-L project virtually. Students also all viewed the same virtual tour of the food pantry that was affiliated with the S-L projects, which was pre-recorded by the Food Pantry Director. Each faculty member also outlined what their students' responsibilities would be for the SL component of the project. The final three S-L projects (and their corresponding course) that students completed consisted of:

a. researching and virtually demonstrating via pre-recorded videos four HFL recipes to local food pantry participants (family and consumer sciences education course),

b. researching and budgeting the cost of the corresponding ingredients and cooking equipment needed to make the four HFL recipes (personal finance course), and

c. directly providing the food pantry clients with the corresponding ingredients and cooking equipment needed to prepare each recipe (nutrition course).

Once students had completed the S-L post-reflection assignment, the survey invitation was sent virtually to the student from a researcher who was not the students' instructor, so as to avoid any potential instructor bias, and took an estimated 10–15 minutes to complete. Students were informed that their participation in the survey was voluntary, and whether or not they participated in the survey would in no way impact their academic standing in the course. No cash or course credit participation incentive was offered to students for completing the survey.

Across all three courses, 108 undergraduate students participated in the survey (79% response rate). The survey included measures of food insecurity empathy following Harmon et al. (2017) as well as a series of food insecurity screening questions. Following Social Cognitive Theory (Bandura, 1977), questions concerning student behaviors, their social environment, and a cognitive measure of food insecurity understanding were also included similar to Schichtl (2020). Lastly, the survey included standard student demographics. The study protocol was approved by the University's Institutional Review Board for research on human subjects, with informed consent obtained from all respondents.

Statistical Model

A binary logit model was used to estimate the effect of the type of S-L project, whether the student had taken a prior S-L course, and student attributes, on the likelihood of having food insecurity empathy. Student responses to the food insecurity empathy survey statements were coded following Harmon et al. (2017) with 50.9% of respondents exhibiting FIE. A binary logit was determined to be an appropriate fit for the collected survey data, due to the relatively even split of FIE scores. Comparing coefficient estimates between the binary logit, and a similarly specified binary probit, yielded similar parameter estimates and variable significance. Both AIC and BIC statistics were obtained post estimation for each model. Slightly lower AIC and BIC statistics were observed for the ordered logit, indicating a slightly better model fit.

Parameter estimates obtained from the binary logit were next used to calculate odds ratios, in order to examine the odds of having FIE for each model variable, and were estimated in Stata 17.0 (StataCorp, 2021). Proportional odds ratios for each model variable can be viewed in Table 1, with robust standard errors reported in order to control for any possible heteroscedasticity in the error structure.

Results and Discussion

The proportional odds of the binary logit can be generally interpreted as the number of students exhibiting food insecurity empathy for every student who did not exhibit FIE. As displayed in Table 1, the odds of having food insecurity empathy were 29.67% higher ($p = 0.073$) for students who completed the direct S-L project, compared to students who completed one of the research-based, indirect S-L projects. This finding has interesting implications for S-L curriculum, as it suggests that courses incorporating direct S-L projects into their curriculum may be more associated with higher odds of exhibiting FIE. Those who indicated they had donated to a food pantry in the past year were 2.10 times more likely ($p = 0.002$) to have food insecurity empathy, compared to those who had not donated. Given that the field of family and consumer sciences is often referred to as a service-oriented, "helping" profession—prior involvement with food aid distribution may be a sign of students who are perhaps already more integrated into the profession, and thus may have FIE as a result. However, additional research as to the effect of food aid distribution behaviors on FIE is warranted.

The odds of having food insecurity empathy were also 5.4% higher ($p = 0.024$) for students who had previously taken an S-L course, suggesting a possible modest influence of S-L instruction over time. It is important to note though that a limitation of this study is that the amount of time since the student took a prior S-L course was not collected. Future research efforts should examine the potential impact of prior S-L courses on FIE. These preliminary findings however certainly lend support to the idea that incorporating S-L into an undergraduate FCS curriculum program may positively support certain types of pro-social behaviors, such as food insecurity empathy. Additional research concerning the impact of S-L curriculum on the pro-social behaviors of FCS undergraduate students is needed.

TABLE 1. Binary Logit Model and Odds Ratios, Exhibiting Food Insecurity Empathy (FIE) (*N* = 108)

Variable	Odds Ratio	robust se	*p*-value
CompletedDirectS-LProject	1.2967	0.6927	**0.073**
HasTakenPriorS-LCourse	1.0544	0.4643	**0.024**
DonatedFoodPantryPastYear	2.0972	0.6928	**0.002**
FoodInsecure	0.412	0.7839	0.599
SupportiveSocialEnvironment	1.0927	0.5379	**0.042**
CognitiveMeasureOfFoodInsecurityUnderstanding	0.7779	0.5421	0.151
Female	0.8131	0.8368	0.331
BIPOC	1.5885	0.5713	**0.005**
Upperclassman	0.1965	0.4124	0.634
Constant	5.4492	1.9151	**<0.001**
Log pseudolikelihood	-27.54		
Wald $chi^2(9)$	27.94		
Prob > chi^2	0.001		

NOTE: Variables in bold are significant at the 10% level or better

Following Social Cognitive Theory (Bandura, 1977), some evidence of the impact of the student having a supportive social environment on FIE was observed. The odds of having food insecurity empathy were 9.27% higher (p = 0.042) for those who indicated that their friends or family members would encourage them to use a food pantry if they needed to, compared to students who did not indicate having that type of social environment. In terms of student demographics, the odds of having FIE were 58.85% higher (p = 0.005) for racial minority (BIPOC) students, compared to Caucasian students. Given that food insecurity in the U.S. is often experienced at higher rates in minority households (Coleman-Jensen et al., 2018), it could be that some BIPOC students have already developed FIE prior to stepping into the college classroom. It is important to note that the study here does not examine FIE empathy levels pre-post. A limitation of this study is that it is possible that students had an existing baseline level of FIE prior to participating in the S-L project for their respective course. Although the model in Table 1 attempts to control for additional student characteristics beyond the attributes of the S-L course they completed, it is possible that some students had already developed some levels of FIE prior to the course. Future efforts may wish to measure the change in FIE levels pre-post.

Lastly, several factors were found to not have a statistically significant influence on the odds of food insecurity empathy. These factors included one's class standing, identifying as female, being classified as food insecure, and a cognitive measure of food insecurity understanding. As the study reported here focused solely on undergraduate FCS students, future efforts may wish to explore the likelihood of food insecurity empathy being exhibited among both graduate students, and in K–12 settings, where service-learning is incorporated into the existing curriculum.

Conclusions

This study finds preliminary evidence that FCS courses that incorporate direct S-L projects may have a positive influence on the likelihood of students developing FIE. Taking multiple S-L courses may also benefit students' FIE, providing important implications for curriculum development in higher education and K–12, and for the development of sustainable communities. Although additional research is warranted, these preliminary results are important for several reasons. First, it can be valuable for FCS educators to understand the implications of the S-L projects in higher education, and their impact on students. Secondly, providing opportunities for students in the college setting to explore situations in which they can exhibit behaviors such as empathy, and particular food insecurity empathy, is also important for their future professional careers. Many students in Family and Consumer Sciences types of courses often later find themselves in careers working with the community, the general public, in educational settings, and perhaps even with those in lower socioeconomic situations, where food insecurity is a persistent problem. Providing a safe opportunity for students to explore societal issues in their community, while in the confines of the college classroom, can translate into students that interact in a community-minded way when they are ultimately placed in their future roles as FCS professionals after graduation.

References

About home economics. (n.d.). Retrieved April 1, 2022, from https://www.ifhe.org/about-us/about-home-economics

About us. (n.d.). American Association of Family and Consumer Sciences. Retrieved April 1, 2022, from https://www.aafcs.org/about/about-us

Arthur, J., & Bohlin, K. (2005). *Citizenship and higher education: The role of universities in communities and society* (p. 208). New York: Routledge-Taylor & Francis Group.

Aslanargun, E. (2012). The ethical responsibility of schools: An example of community service in Turkey. *The New Educational Review, 29*(3), 108-118.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Benson, L., & Harkavy, I. (2000). Higher education's third revolution: The emergence of the democratic cosmopolitan university. *Cityscape: A Journal of Policy Development and Research, 5*(1), 47–58.

Bok, D. (1982). *Beyond the ivory tower: Social responsibilities of the modern university*. Cambridge, MA: Harvard University Press.

Bringle, R. & Hatcher, J. (1996). Implementing service learning in higher education. *Journal of Higher Education, 67*(2), 220-239.

Campus Compact (2000). *Highlights and trends in student services and service-learning: Statistics from 1999 member and faculty surveys*. Providence, RI. http://www.compact.org/wp-content/uploads/resources/downloads/aag.pdf

Carnicelli, S., & Boluk, K. (2017). The promotion of social justice: Service learning for transformative education. *Journal of Hospitality, Leisure, Sport & Tourism Education, 21*, 126-134.

Checkoway, B. (1997). Reinventing the research university for public service. *Journal of Planning Literature, 11*(3), 307–320

Coleman-Jensen, A., Rabbitt, M., Gregory, C., & Singh, A. (2018). *Household food security in the United States in 2017*. ERR-256, U.S. Department of Agriculture, Economic Research Service.

Colorado Department of Education. (2009). *Strategies for student engagement: A toolkit to implement quality service-learning in Colorado*. https://www.cde.state.co.us/21stcclc/servicelearningtoolkit.

Eisenberg, N., & Strayer, J. (Eds.). (1990). *Empathy and its development*. CUP Archive.

Elmhurst University. (2019, November 25). Re: What is service learning? https://www.elmhurst.edu/blog/what-is-service-learning/

Eyler, J., Giles, D., & Braxton, J. (1997). The Impact of Service-Learning on College Students. *Michigan Journal of Community Service Learning, 4*, 5–15.

Fisher, R., Fabricant, M., & Simmons, L. (2004). Understanding contemporary university-community connections: Context, practice and challenges. In T. Soska & A. Butterfield (Eds.), *University-community partnerships: Universities in civic engagement* (pp. 13– 33). Binghampton, NY: Haworth Press.

McGregor, S. (2002). Bringing service learning to FCS higher education. In *Kappa Omicron Nu Forum (Vol. 13*, No. 1, pp. 41-51).

Griffith, J. (2012). A decade of helping: Community service among recent high school graduates attending college. *Nonprofit and Voluntary Sector Quarterly, 41*(5), 786-801.

Harmon, A., Landolfi, K., Shanks, C. B., Hansen, L., Iverson, L., & Anacker, M. (2017). Food insecurity experience: Building empathy in future food and nutrition professionals. *Journal of Nutrition Education and Behavior, 49*(3), 218-227.

Kou, X., Konrath, S., & Goldstein, T. R. (2020). The relationship among different types of arts engagement, empathy, and prosocial behavior. *Psychology of aesthetics, creativity, and the arts, 14*(4), 481.

Meyers, S. (2009). Service-learning as an opportunity for personal and social transformation. *International Journal of Teaching and Learning in Higher Education, 21*(3), 373-381. https://www.isetl.org/ijtlhe/

Moely, B. E. & Ilustre, V. (2019). Service involvement and civic attitudes of university alumni: later correlates of required public service participation during college. *Michigan Journal of Community Service Learning, 25*(1). https://doi.org/10.3998/mjcsloa.3239521.0025.103

Petri, A. (2015). Service-learning from the perspective of community organizations. *Journal of Public Scholarship in Higher Education, 5*, 93-110.

Ryder, V., & Decker, C. (2010). *Parents and their Children*. Tinley Park, IL: Goodheart/Willcox

Schichtl, R. (2020). *Examining the presence of empathy in college students as it relates to food insecurity* (Doctoral dissertation).

Silke, C., Brady, B., Boylan, C., & Dolan, P. (2018). Factors influencing the development of empathy and pro-social behaviour among adolescents: A systematic review. *Children and Youth Services Review, 94*, 421-436.

StataCorp. 2021. Stata Statistical Software: Release 17.0. College Station, TX: StataCorp LLC.

Steffes, J. (2004). Creating powerful learning environments beyond the classroom. *Change, 36*(3), 46-50.

van Goethem, A., van Hoof, A., Orobio de Castro, B., Van Aken, M., & Hart, D. (2014). The role of reflection in the effects of community service on adolescent development: A meta-analysis. *Child Development, 85*, 2114-2130.

Wilson, J.R., & Schwier, R.A. (2009). Authenticity in the process of learning about instructional design. *Canadian Journal of Learning and Technology, 35*(2).

Wisconsin Department of Public Instruction. (n.d.). *Service-learning definition and philosophy*. https://dpiwi.gov/service-learning/about

Yusop, F. and Correia, A. (January 2013). The benefits and challenges of implementing service- learning in an advanced instructional design and technology curricula: Implications for teaching professional courses. *The New Educational Review 32*(2), 220-232.

Ziliak, J., & Gundersen, C. (2018). *The state of senior hunger in America 2016: An annual report*. https://www.feedingamerica.org/sites/default/files/research/senior-hunger- research/state-of-senior-hunger-2016.pdf.

PEER-REVIEWED CONGRESS PAPER

Impact of hospitality and tourism industry in Oshimili south local government area, Delta State, Nigeria towards sustainable economic growth

Florence Uzoka
Federal College of Education (Technical), Asaba, Nigeria

Abstract

The study focused on the impact of hospitality and tourism industry in Oshimili South Local Government Area, Delta State, with a view to ascertain its contribution to sustainable economic growth in Nigeria. The objectives of the study were to examine the impact of the hospitality industry in the achievement of sustainable economic growth, and the impact of tourism on the Standard of Living of operators as well as find out the challenges of tourism in Oshimili South Local Government Area, Delta State, Nigeria. The study was a descriptive study. The population is made up of all the hospitality industry in the three towns (Asaba, Okwe and oko) in the study area. Two towns in Oshimili South Local Government Area, Delta State were selected using purposive sampling technique, while simple random sampling technique was used to select 800 respondents in both the two towns selected for the study respectively. Structured questionnaires were used as instruments for data collection in the study. Data generated was analyzed using descriptive statistics which included frequency, percentages as well as mean rating where mean of 2.50 and above was accepted and below 2.50 was rejected. Findings revealed hospitality industry has positively impacted on the provision of employment and that the tourism industry has also positively impacted on the standard of operators in Oshimili South Local Government Area. However, it was revealed that funding was a major challenge of tourism and the hospitality industries in Oshimili South Local Government Area. It was recommended that there is need for more people to be encouraged to more investors to engage in the tourism and hospitality industry. This would help to reduce the level of unemployment.

Background to the Study

There is no gain saying that tourism which involves being away from home on a temporary or short-term visit to places of interest outside one's place of residence and work, has become a flourishing source of income globally. According to Meng, Tepanon & Uysal, (2008) this is partly due to the peculiarity of income generation, employment creation and poverty elimination potentials which are associated with the intangible products. United Nation World Tourism Organization (UNWTO, 2015) sees the activity where an individual go outside the environment of his or her residence either for business, leisure or other purposes as tourism. Tourism therefore comprises the industry that packages, facilitates, promotes as well as delivered travels and care. Obviously, tourism activity greatly impacts the visitors and host communities before, during and after the experience.

Uzoka, F. (2022). Impact of hospitality and tourism industry in Oshimili south local government area, Delta State, Nigeria towards sustainable economic growth. *International Journal of Home Economics, 15*(2), 160-166.

Florence Uzoka ✉ uzokaflorence21@gmail.com

Indeed, wages from tourism have huge economic impact on all spheres of the society to become one of the fastest growing industries globally (Aliyu, Abdul Kadir, &Aliyu, 2013). Kurian, Varadharajan, &Rajasekar, (cited in Manzuma-Ndaaba, Yoshifumi& Islam, 2014) asserted that the strength of tourism performance is obvious in poverty reduction, employment generation and income redistribution effect on rural communities. Moreover, Gil & Ritchie, (2008) are of the opinion that through the revolution in the tourism industry, both the government and private entrepreneurs have started to optimize the opportunities of attracting tourists to their countries. To be able to examine the numerous potentials that are inherent in the tourism industry, many countries have started to develop their cities and states in a manner that will attract tourist and tourist investors. In the light of the above Ayeni & Eboho, (as cited in Manzuma-Ndaaba, Harada &islam, 2014) observed that the development of tourism as an alternative revenue sources include new strategy in most countries because of its multiplier effect on other sectors of the economy that allows it to create large volume of job for both skilled and unskilled labour.

Undoubtedly, the advantage of tourism is clearly visible in any nation, socially, environmentally and economically. According to Mbaiwa, (2003) there exist a complex relationship between tourism and the environment and for this reason caution should be applied in all tourism related activities especially manmade features and construction of tourism support facilities. The hospitality industry is among the industries in the tourism sector which has played a vital role in the provision needed comfort in any tourist destination (Eja'Oto, Yaro, &Iyang, 2011). It is against this backdrop that this paper takes a panoramic view on role of the hospitality and tourism industry in the provision of sustainable economic growth. Moreover Ayeni & Ebohon, (2012) is of the opinion that conscious efforts are required to guaranty replenishment and regeneration capacity of the environment in tourism development drives.

Tourism and sustainable development

It is a truism the tourism development is a major component of economic growth that comprises expanding the ownership base such as people benefiting from the tourism industry through job creation, skills development business and wealth creation and ensuring the geographical spread of tourism business all over the given destination Ekwutosi, Ikegwu&Chijioke (2016) provided a good example of tourism development as the right to host a soccer event such as the "world cup". They further observed that the BRAZIL 2014 world cup hosted by Brazil was a revolutionized tourism sector which produced thriving hospitality business because people that came from all over the world to witness the event thereby generating revenue from tourism and hospitality business in the host country.

Ekwutosi et al. (2016) explained that in 2006, the Nigerian Government instituted a new set of reforms in the tourism industry with the aid of the United Nations Development which led to the creation of the "Nigerian Tourism Master Plan". Unfortunately, a few years after the master plan had been drawn the tourism industry has still not developed even though there has been a major influx of global hotel brands into Nigeria in the past five years. For sustainability, the tourism master plan advocated for partnership programs between the internationally operated hotels in Nigeria and tour operators in the west to use spare capacity in these hotels at favorable rates. After five years, the tourism and hospitality industry still represent only a meagre 0.5% of Nigeria's GDP. Yet tourism is developing at a faster rate globally and more countries are getting aware about the need to develop tourism for socio-economic advantages (Ekwutosi et al., 2016). It is obvious that tourism has a vital impact on the society, topography, environment and socio-economic aspect of any country. In the social terms, the immediate benefit of tourism industry is the ability to bring people out of the unemployment circle. In other words, it creates job opportunity and also caters for both skilled and unskilled employment and it is known to be a labor-intensive industry which provides job per unit of investment compared to any other industry. The industry gives room to partnership and entrepreneurship within the tourism business concept thereby creating an innovation and bringing about economic activity (Morrison, Rimmington and Williams, 1999). Despite the fact that tourism is important today in the nation, the problem associated with tourism is quite enormous. In that case such problems are perceptive in Anambra state. The infrastructural facilities such as good road network and parking space as well as good hotel accommodation are required.

Statement of the problem

Although there are vast tourism potentials as evident by the large number of the hospitality industry Delta State, which has a great chance of reducing poverty as well as well as resulting in job creation, income generation, yet there are a number of challenges militating against developing that tourism sector in the state. Both Government and the private investors seem to be constraint in their investment drive.

Objectives of the Study

The objectives of the study will be to:

- examine the impact of the hospitality industry in the achievement of sustainable economic growth in Oshimili South Local Government Area, Delta State, Nigeria.
- examined the impact of tourism on the Standard of Living of operators in Oshimili South Local Government Area, Delta State, Nigeria.
- find out the challenges of tourism in Oshimili South Local Government Area, Delta State, Nigeria.

Research Questions

The following research questions would be raised to guide the study:

- What is the impact of the hospitality industry in the development of tourism towards the achievement of sustainable economic growth in Oshimili South Local Government Area, Delta State, Nigeria?
- What is the impact of tourism on the Standard of Living in Oshimili South Local Government Area, Delta State, Nigeria?
- What are the challenges of tourism in Oshimili South Local Government Area, Delta State, Nigeria?

Scope of the Study

The study was limited to the hospitality and tourism industry in Oshimili South Local Government Area, Delta State, Nigeria.

Research Design and population

This research was a descriptive study. The population is made up of all the hospitality industry in the three towns (Asaba, Okwe and oko) in Oshimili South Local Government Area, Delta State, Nigeria.

Sample and Sampling

Technique For the purpose of this study, only two towns in Oshimili South Local Government Area, Delta State were selected using purposive sampling technique, while simple random sampling technique was used to select 800 respondents in both the two towns respectively. The towns are Asaba and Okwe

Instrument

Structured questionnaires were used as instruments for data collection in the study. The questionnaire was designed in a modified Likert scale format of four response patterns and had two sections, “A”; and “B” with particular considerations to both the demographic and subject related areas.

Validation of the Instrument

The instrument was subjected to face and content validation by three experts in a University of Nigeria Nsukka, Faculty of Education.

Method of Data Collection

Primary data was obtained through the distribution of the questionnaire by a research assistant. All distributed copies of questionnaire were filled by the respondents and collected on the spot. This helped to eliminate transit-loss or delays in submission and compilation.

Method of Data Analysis

Data was analyzed using descriptive statistics which included frequency, percentages, and mean in line with the questions raised for the study. A 4-point rating scale was used and nominal values were assigned to each as follows; Strongly Agree (SA) 4, Agreed (A) 3, Disagreed (D) 2, and strongly Disagreed (SD) 1. The Mean decision rule was established at 2.50. Thus, any item with mean rating of 2.50 and above was accepted whereas anyone with mean rating below 2.50 would be rejected.

Data Presentation, Analysis and Results

Demographic Data Analysis

Table 1: Sex Distribution of Respondents

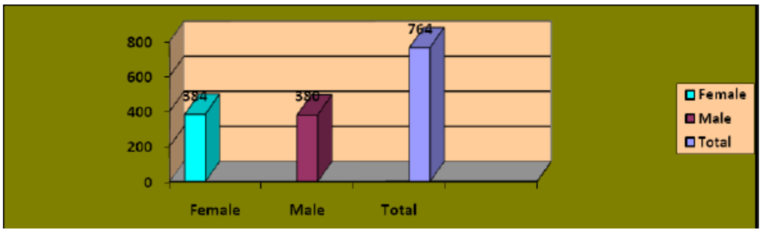


Table 1 shows that 384 (50.3%) of the respondents was female while the male respondents were represented by 380 (49.7%). Thus, the total number of respondents used was 764.

Table 2: Age Distribution of Respondents

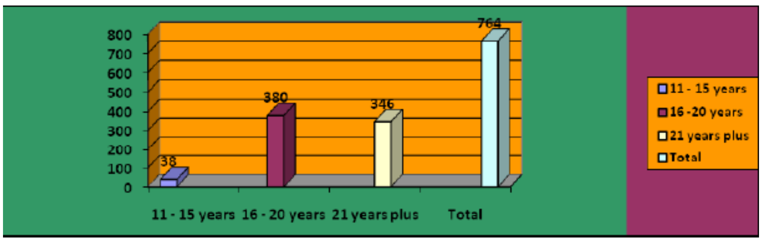


Table 2 reveals that 38 (5%) of the respondents were found within the ages of 11 to 15 years. 380 (49.7%) were within the ages of 16 to 20 years while 346 (45.3%) had ages from 21 years and above.

Analysis of Research Questions

Table 3 shows that most of the respondents were of the view that hospitality industry operator I have been able to create job in the tourism sector in the study area. Majority of the respondents were in agreement with items 1, 2, 4 and 5, except for item 3 which had to do with the inability to provide employment for people in the hospitality industries in the study area. The grand mean of 3.2 is indicative that entrepreneurship has positively affected, job and wealth creation in Anambra State.

Table 3: RQ1: impact of the hospitality industry in the development of tourism in Oshimili South LGA

SN	ITEMS	SA	A	D	SD	Mean	Decision
1.	As a hospitality industry operator I have been able to create job in the tourism sector.	278	412	40	34	3.2	Agree
2.	I have been able to employ people in my hotel/guest house	432	210	44	78	3.3	Agree
3.	I have not employed any people in my hotel/guest house	102	82	330	250	2.0	Disagree
4.	There are many hospitality industry operators providing job for youths	426	281	27	30	3.4	Agree
5.	hospitality industry provides tourism opportunity	370	247	69	78	3.2	Agree
	Grand mean					**3.2**	**Agree**

Table 4 investigated the impact of tourism on the Standard of Living of tourism operators in Oshimili South Local Government Area. Majority of the respondents conceded to items 6, 7, 9 and 10 which sought to understand if tourism had any impact on standard of living of tourism operators in Oshimili South Local Government Area. However, respondent disagree in item 8tourism industrial outfits hardly earn enough to break even. The grand mean score of 3.0 further established that tourism had a positive impacted on the operators living in Oshimili South Local Government Area.

Table 4: RQ2: Impact of tourism on the Standard of Living of tourism operators in Oshimili South

SN	ITEMS	SA	A	D	SD	Mean	Decision
6.	As a tourism operator your standard of living is high	410	211	87	56	3.3	Agree
7.	Your organizations maintain high standard of.	381	254	60	69	3.2	Agree
8.	Tourism industrial outfits hardlyearn enough to break even.	26	125	263	350	1.8	Disagree
9.	Although we are a tourism operator, we make enough to pay our staff	422	196	67	79	3.3	Agree
10.	As an tourism operatorin the state, your quality of life has been greatly enhanced	348	299	72	45	3.2	Agree
	Grand mean					**3.0**	**Agree**

Table 5 indicates that respondents disagreed with items 11, 12, 15, 16, and 17 which were directed towards the challenges of tourism and the hospitality industry in Osimilii South Local Government. However, positive responses were generated for item 13 to which agree that fuel generator was their main source power. The grand mean score of 2.4 further reveal that that funding was a major challenge of tourism and hospitality industries in Oshimili South Local Government Area.

Table 5: RQ3: the challenges of tourism and hospitality industries in Oshimili South Local Government Area

SN	ITEMS	SA	A	D	SD	Mean	Decision
11.	Tourism and hospitality industries have adequate funds to expand the sector .	140	134	278	212	2.3	Disagree
12.	The vehicles and machines used in the industries are of very high quality and of international standard .	178	144	210	232	2.4	Disagree
13.	Fuel generator are your main source of power	347	283	80	54	3.2	Agree
14.	Most of our clients can afford a tourism and hospitality industry that is of very high quality and of international standard.	152	132	230	250	2.2	Disagree
15.	Most people go on holidays and sight seeing	127	130	226	281	2.1	Disagree
16.	Electricity is readily available for production	128	119	247	270	2.1	Disagree
17.	There are enough resources to enable the industry grow into a large-scale sector .	201	117	245	201	2.4	Disagree
	Grand mean					**2.4**	**Disagree**

Summary of Findings

Findings revealed that:

- Hospitality industry has positively impacted on the provision of employment in Oshimili South Local Government Area.
- Tourism industry has also positively impacted on the standard of operators in Oshimili South Local Government Area.
- Funding was a major challenge of tourism and the hospitality industries in Oshimili South Local Government Area.

Summary

This study was carried out to ascertain the impact of tourism and the hospitality industry in Oshimili South Local Government Area.

Purposive sampling technique, and simple random sampling technique were used to select 800 respondents in two towns in Oshimili South Local Government Area namely Asaba and Okwe respectively. Structured questionnaire was designed by the researcher and forwarded to three research experts for face and contents validation. Corrections were made on the instruments by the experts were affected on the final copies of before they were taken to the field for administration and data collection. Data collected were analysed using frequency counts, tables, chats and mean statistics.

The results of the study showed hospitality and tourism industries have positively impacted on the provision of employment, in Oshimili South Local Government Area. It was, however, discovered that funding was a major challenge of entrepreneurs in Oshimili South Local Government Area.

Conclusion

This study made extensive attempt to assess the impact of tourism and the hospitality industry in Oshimili South Local Government Area. The study was able to reveal that both sectors have impacted on the provision of employment in Oshimili South Local Government Area, it however, revealed that, funding was a major challenge of the sectors in Oshimili South Local Government Area.

Recommendations

Based on the findings of this study, the following recommendations were made:

- There is need for more people to be encouraged to more investors to engage in the tourism and hospitality industry. This would help to reduce the level of unemployment.
- The government should also support both sectors and assist them with grant in aid.
- Bank should be more flexible with the condition for accessing loans.
- There is need to improve the power sector in the country so as to be able to provide a more stable electricity for the sector.

References

Aliyu, B. B., Abdul Kadir, H. D., &Aliyu, O. A. (2013).*The relationship between Tourist Expectation, Perceived quality and Satisfaction with Tourism Product*. Retrieved from http://www.medwelljournals.com/abstract/?doi=ibm.2013.158.164

Ayeni, D.A. and Ebohon, O. J. (2012) Exploring Sustainable Tourism in Nigeria for Developmental Growth. *European Scientific Journal, 8* (20), pp. 126-140https://dora.dmu.ac.uk/handle/2086/8243

Eja, E. I., Oto, Y. E., Yaro, M. A., &Inyang, I. O. (2011). Impact of Hospitality Industry in poverty alleviation in a tourist destination: Cross River State Scenario. *Mediterranean journal of social sciences.*

Ekwutosi I. P., Ikegwu E. M. &Chijioke J. A. (2016)Tourism development: a revolutionalised sector as a panacea for dwindling hospitality business in Nigeria. *International, Journal of Science & Society YabaTECHvol 4*, no 1, September, 2016

Gil, S. M., & Ritchie, J. R. (2008).*Understanding the museum image formation process: A comparison of residents and tourists*.Retrieved from http://jtr.sagepub.com/content/47/4/480

Manzuma-Ndaaba N. M., Yoshifumi H. & Islam M. A. (2014), Challenges to Growth in Tourism Industry of a Developing Country: The Case of Nigeria. *Asian Social Science; Vol. 10*, No. 19; 2014

Mbaiwa, J. E. (2003). The Socio-Economic and Environmental Impacts of Tourism Development on the Okavango Delta North-Western Botswana. *Arid Environments, 54*, 447-467. http://dx.doi.org/10.1006/jare.2002.110

Meng, F., Tepanon Y., &Uysal, M. (2008).Measuring tourist satisfaction by attribute and motivation. www.ccsenet.org/ass *Asian Social Science Vol. 10*, No. 19; 2014

Morrison, A., Rimmington, M., Williams, C.(1999). *Entrepreneurship in hospitality, Tourism and leisure industries*. Oxford: Butterworth-Heinemann

UNWTO.(2015). *Tourism and poverty reduction*. http://step.unwto.org/content/tourism-andpoverty-alleviation-1

PEER-REVIEWED CONGRESS PAPER

Incorporating a sustainability module into the College of Family and Consumer Sciences (FACS) 2000 Foundation Course

Anne McInnis, Katalin Medvedev & Sheri Worthy
University of Georgia, United States

Abstract

At the University of Georgia's College of Family and Consumer Sciences (FACS), there is a strong need to proactively rethink how various aspects of sustainability can complement the existing foundation course required for all majors. Within the Body of Knowledge covered in the class, sustainability and wellness are introduced as cross-cutting themes. However, we argue that a separate sustainability module would not only complement but also highly increase the impact of the course. The purpose of the proposed module is to educate students on how sustainability and sustainable development impact their respective majors and their future. The sustainability module introduces the United Nations 17 Sustainable Development Goals (SDG) with a synergistic focus on SDG 3: Good health and well-being and SDG 12: Responsible consumption and production.

The primary objectives of the module are to:

1. *Develop a critical understanding of the SDG with an integrative focus on good health, well-being, responsible consumption and production to increase students' academic knowledge and enhance their professional and personal lives.*
2. *Comprehend key concepts and terms such as sustainability and sustainable development; the three pillars of sustainability: social, economic, environmental; and circular economy.*
3. *Demonstrate through discipline-specific projects focusing on sustainability and wellness of individuals, families, and communities in what ways the SDG impact students' majors across various systems including human, political, economic, food, environmental, and health.*

Approaching the foundational course through a sustainability lens means to teach, incorporate, and use the principles of sustainability in the curriculum to create positive, lasting change that affects the planet, our lives and communities, and our well-being. A sustainability module in the FACS foundation course provides a model "for thinking about the future in which environmental, societal, and economic considerations are balanced in the pursuit of an improved quality of life" (UNESCO, n.d.).

KEYWORDS: UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS, EDUCATION, HEALTH AND WELL-BEING, SUSTAINABILITY, CONSUMPTION AND PRODUCTION

McInnis, A., Worthy, S., & Medvedev, K. (2022). Incorporating a sustainability module into the College of Family and Consumer Sciences FACS 2000 Course at the University of Georgia. *International Journal of Home Economics, 15*(2), 167-175.

Anne McInnis ✉ Anne.mcinnis25@uga.edu

Introduction

The College of Family and Consumer Sciences (FACS) at the University of Georgia offers several undergraduate majors that include nutritional sciences, housing management, furnishings and interiors, human development and family science, financial planning, and fashion merchandising. At the College, there is a need to proactively rethink how various aspects of sustainability can complement the current foundation course, FACS 2000, required for all majors. The purpose of this paper is to propose a new module to educate students on how sustainability and sustainable development impact their respective majors and their futures and provide a model for other similar institutions. Sustainability is a growing concern in fashion and other industries as well as in personal lives today. The proposed sustainability module introduces the United Nations 17 Sustainable Development Goals (SDG) with a synergistic focus on SDG 3: Good health and well-being (SDG 3), and SDG 12: Responsible consumption and production (SDG 12). Within the Body of Knowledge covered in the class, sustainability and wellness are introduced as cross-cutting themes. However, we argue that a separate sustainability module would not only complement but also highly increase the impact of the foundation course at FACS.

The American Association for Family and Consumer Sciences (AAFCS) defines FACS as “a people-centered field that is focused on the science and art of living and working well in our complex world” (American Association of Family and Consumer Sciences, n.d.). At FACS students benefit from a wide range of educational choices. They are also able to participate in research and outreach programs and are prepared for successful participation in the high-tech global workforce. The mission of FACS is to “provide leadership and support for professionals whose work assists individuals, families, and communities in making informed decisions about their well-being, relationships, and resources to achieve optimal quality of life” (American Association of Family & Consumer Sciences, 2010). Through the lens of sustainability and a module that supports it, faculty can apply disciplinary sciences, technologies, and principles of design and business to their curriculum. The addition of a separate sustainability module can help students become future leaders that promote well-being and responsible consumption and production practices which result in healthier people and communities.

Sustainability and Sustainable Development

At the start of the class, students will be asked to write down, post and so on and discuss what sustainability means to them. They will be asked to contemplate how sustainability relates to the mission of FACS, and how it can be used to have a transformative effect on their major. In order to incorporate sustainability and sustainable development into our educational framework, we must first understand that sustainable development is the pathway to sustainability. Sustainability has been defined by UNESCO (n.d.), as a long-term goal and as

> a paradigm for thinking about the future in which environmental, societal, and economic considerations are balanced in the pursuit of an improved quality of life. Sustainable development refers to the many processes and pathways to achieve it (sustainable agriculture and forestry, sustainable production and consumption, good government, research and technology transfer, education and training, etc.).

The United Nations Brundtland Commission on sustainable development in 1987 defined sustainability as “development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs” (Brundtland et al., 1987, p. 8).

There are three pillars of sustainability: environmental, economic, and social. According to Circular Ecology (n.d.):

environmental sustainability means we are living within the means of our natural resources; economic sustainability requires that a business or country uses its resources efficiently and responsibly so that it can operate in a sustainable manner to consistently produce an operational profit; social sustainability is the ability of society, or any social system, to persistently achieve a good social well-being.

As seen in Figure 1, all three pillars must be in balance to achieve true sustainability and result in a circular economy. A circular economy, another important concept, is an economic system aimed at the continual use of natural resources and eliminating and minimizing waste (Department of Economic and Social Affairs, 2019).

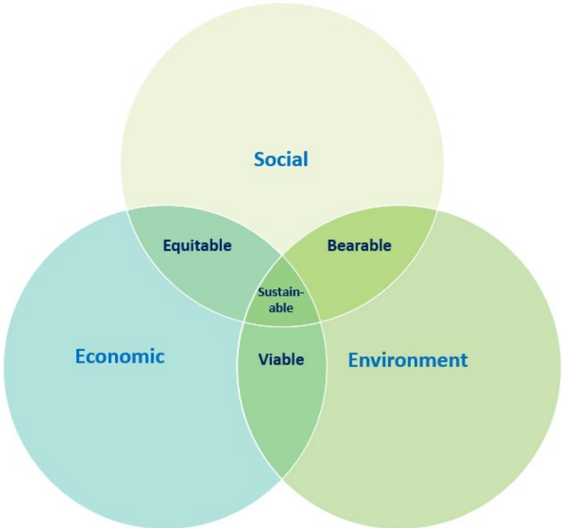


Figure 1 Three Pillars of Sustainability. (Circular Ecology, n.d.)

The United Nations 17 Sustainable Development Goals (SDG)

The module will discuss the 17 SDG including their history and justification, see Figure 2. The SDG website (n.d.), states that the 17 goals are the heart of its 2030 Agenda for Sustainable Development and provide "a shared blueprint for peace and prosperity for people and the planet, now and into the future." Adopted by all United Nations Member States in 2015, the goals aim to end poverty, improve health and education, reduce inequality, and focus on economic growth.

The goals also call for attention to climate change and highlight the imperative of environmental preservation. The class will discuss and analyze how, if, and in what ways their majors are impacted by the 17 SDG goals. Additionally, students will learn about the International Federation for Home Economics (IFHE) 2022 World Congress entitled, Home Economics: Soaring Toward Sustainable Development. Details about the six of the 17 SDG to be addressed by the IFHE will be extrapolated in more detail when the course launches: SDG 1: No poverty, SDG 2: Zero hunger, SDG 3: Good health and well-being, SDG 5: Gender equality, SDG 6: Clean water and sanitation, and SDG 12: Responsible consumption and production. The class will discuss these six goals chosen for the IFHE conference with a synergistic focus on SDG 3 and SDG 12, and how they relate to FACS and their respective majors.

The IFHE holds consultative status with the United Nations. As stated on their website, "We strive to achieve a sustainable living for all, advocating education and research on the responsible management of resources at consumer and household level" (International Federation for Home Economics, n.d.-b). The SDG and FACS's diverse disciplines offer an integrated approach that "allows us to address multi-dimensional economic, social and ecological aspects that impact every-day living and to offer specific interpretations of important SDGs" (International Federation for Home Economics, n.d.).

Figure 2 *The United Nations 17 Sustainable Development Goals.* (United Nations Department of Economic and Social Affairs, n.d.)

The FACS Body of Knowledge and Cross-cutting Themes

As part of the module, the FACS Body of Knowledge (BOK) will be reviewed while highlighting the cross-cutting themes and how they link all FACS departments with sustainability, sustainable development, SDG 3, and SDG 12. In FACS, the BOK is the current foundation for the field, which integrates relevant concepts to consumers, with the service of individuals, families, and communities (Anderson & Nickols, 2001). While the concept of sustainability is included the BOK in the FACS 2000 course, a separate sustainability module could inform all programs within the College of FACS and supplement the current BOK. From the inception of FACS professions in 1918 to the present, family and consumer sciences have faced changing social, economic, technological, and societal conditions (Nickols et al., 2009). Sustainability cuts across all areas of life and career development. FACS education has the potential to address the social, economic, and environmental challenges of the 21st century through the lens of sustainability. With the growth in diversity and the transformation of the cultural landscape, a focus on sustainability will broaden the scope of research and practice among FACS students.

The BOK model for family and consumer sciences presents three critical components: core concepts, integrative elements, and five cross-cutting themes. These three components also interact and have a synergistic interrelationship with each other and the entire BOK. Because the cross-cutting themes represent social trends and issues of the zeitgeist, as well as historical continuity, they also must address a constantly changing environment (Nickols et al., 2009). The theme, "resource development and sustainability," lies within the five cross-cutting themes. The other four are capacity building, global interdependence, technology (appropriate use), and wellness. As part of the proposed module, instructors could reiterate these five cross-cutting themes and integrate "sustainability" and SDG 3 and SDG 12 within each theme. For example, in the cross-cutting theme of capacity building, acquiring knowledge and skills in sustainability and sustainable development, could address the imperative to proactively respond to societal (diversity, well-being) and environmental (responsible consumption and production) challenges. Under global interdependence, SDG 12 addresses the impact of responsible production and consumption on the planet and its effects on others in the world. Another discussion could focus on how technology and its appropriate use influences the way we connect and interact.

Technology, like sustainability, has ethical, social, and economic consequences. A discussion on SDG 3 and technology could address how advances in science and technology shape and affect the well-being of individuals, families, and communities. Additionally, SDG 3 addresses the cross-cutting theme, wellness. On this account, instructors can highlight the issues of food security, the relevance of adequate nutrition, appropriate exercise, access to quality healthcare, and compassionate and respectful learning environments. Students could contemplate the importance of universal access to safe water, clean air, and proper sanitation facilities. A conversation on social sustainability and psychological health could also lead to discussions on how one can be best protected from abuse, exploitation, and violence. By highlighting SDG 3 and SDG 12, we could also talk about the imperative to design healthy homes for the life course development of an aging and diverse population, among others.

Sustainability is concerned with protecting the environment, encouraging sustainable practices, properly managing resources and well-being across the lifespan. It also encourages a deep engagement with public policy. Sustainability, SDG 3, and SDG 12 interrelate all cross-cutting themes and underline their significance to all FACS departments and majors.

The Impact of Sustainability on Individual FACS Departments

Incorporating sustainability into the required introductory FACS course can guide students to innovate sustainable solutions into their disciplines. For the purpose of this proposal, we are using the four departments at the University of Georgia's College of Family and Consumer Sciences, the Department of Human Development and Family Science (HDFS), the Department of Foods and Nutrition (FDN), the Department of Financial Planning, Housing and Consumer Economics (FHCE), and the Department of Textiles, Merchandising and Interiors (TMI). To help us rethink the global environmental, economic, and social systems, the module will demonstrate how sustainable thinking impacts choices in education, finances, career, consumption, well-being, and personal life. Below we explain how incorporating a sustainability module into the introductory course with a synergistic focus on SDG 3 and SDG 12 can impact these four departments.

Department of Human Development and Family Science (HDFS)

Undergraduate students majoring in HDFS study individuals, families, and communities. They study the lifespan and family development within social, cultural, and historical context. Human lives and job satisfaction are centered on our well-being. Applying sustainability into HDFS sets the foundation for students to challenge assumptions about educational needs and provides education of advocacy services for families and children to function more effectively. Self-sufficient families, adult education, youth programs, and hospital work are all areas where a focus on SDG 3 and SDG 12 can be beneficial. For example, child development courses could analyze public policies on the economic and environmental implications of young families using cloth vs disposable diapers (Thompson et al., 2012). A discussion can be led on sustainable community collaborations that can support healthy family and marriage relationships. As stated by Futris (2007), "Making positive and sustainable impacts on current and future marriages is more likely to occur when the community is actively engaged" (p.1). The involvement of the community can provide quality programs that serve not only marriages but all relationships, by identifying the needs and challenges of the community from an ecological and developmental perspective. Futris defines program sustainability as "the capacity of programs to provide continued benefits to families and communities" (p. 2). This is contingent on fostering sustainability that relies on community collaborations and networks that incorporate action into everyday life. Marriage and family relationships in low-income families may be impacted by risks that inhibit healthy relationships, health and wellness concerns, employability, and financial status. Community collaborations may involve government, cooperative extension, faith communities, family services, public health, school youth programs, community action agents, and more, which all serve to develop an infrastructure that supports well-being and healthy relationships.

Department of Foods and Nutrition (FDN)

In FDN, students prepare for careers in health care, government, industry, and education. Within the various majors of the department, dietetics majors can apply their degrees toward opportunities in health care, sports nutrition, schools, food services, government, public health, and industry positions. Dieticians who work in these occupations impart educational programs that focus on nutrition and public health. Healthy food intake plays a significant role in well-being, disease prevention, and overall health. Sustainability and SDG 3 play a critical role in food production. A healthy and sustainable food future depends on global collaborative efforts. Sustainable diets respect and preserve the ecosystem, have low environmental impact, and are accessible, affordable, and nutritionally adequate for all (Harvard T.H. Chan School of Public Health, n.d.). Our environment and carbon footprint are greatly affected by food consumption and farming practices. Through the lens of SDG 12, FDN students could consider the impact of the carbon footprint of foods shipped from around the world, compared to locally grown foods (Thompson et al., 2012). From Pontikis et al. (2011), “The U.S. food production system uses about 50% of the total U.S. land area, approximately 80% of the freshwater, and 17% of the fossil energy used” (p. 44). SDG 12 can help students understand that such heavy dependence on energy and natural resources is not sustainable. Students in FDN can engage in research and debates about sustainable food systems, environmentally-friendly farming practices, and collaborate with communities and organizations that prioritize sustainability.

Department of Financial Planning, Housing and Consumer Economics (FHCE)

FHCE provides undergraduates with an education that focuses on improving the economic and financial well-being, and quality of life for individuals, families, and communities. In the case of consumer economics majors, an intentional focus on sustainability and SDG 12 can positively influence consumers’ well-being through policy making, education, and product innovation. Consumer economics allows students to discern the strong connection between a sustainable lifestyle and judicious choices in consumption. Sustainability issues greatly affect consumer behavior. Consumption choices also have repercussions in terms of labor and trade practices. Immersing themselves in sustainability principles, students can learn that being “green” does not always cost more if one opts for products that offer energy savings. By applying this knowledge, students can conduct cost/benefit analyses for decisions based on their research (Pontikis et al., 2011). Understanding the product life-cycle can help educate consumers to make informed decisions. Encouraging students to examine consumption through the lens of sustainability and SDG 12 will help students identify long-term solutions for a more viable environment (Thompson et al., 2012).

Department of Textiles, Merchandising and Interiors (TMI)

At TMI, students are prepared for careers in retail, fashion merchandising, residential design, and the manufacturing industry. Fashion, clothing, and textiles affect everyone because we all wear clothing and accessories and require shelter. Educators, consumers, manufacturers, and governments all have a responsibility to make sustainability a priority. Much of our natural resources are not renewable. FACS and TMI students have to learn to consider this when making decisions relating to clothing and interiors (Thompson et al., 2012). The incorporation of sustainability and SDG 12 provides TMI students with the proper framework to make responsible decisions concerning environmental issues in their future careers in retail, manufacturing, merchandising, design and product development, or market research. They also learn about product lifecycles, and how raw materials are processed, manufactured, and transported to retail for consumers’ end-use. All these steps and the eventual disposal of unwanted products greatly impact energy use. Furnishings and interiors (FI) students have the capacity to affect everyone because we all need shelter and the built environment for our homes, work, and social needs. FI students can learn to identify sustainable choices in materials for healthy, economical, and environmentally-friendly spaces. Understanding sustainable options in flooring choices, for example, can greatly impact the well-being of individuals and communities, the environment, and the economy (Thompson et al., 2012). In the case of TMI students, imparting a sustainability mindset has the potential to influence change by steering students towards design choices aimed at longevity and durability. TMI students will learn to opt for manufacturing and labor choices that reduce harmful environmental impacts and eliminate unethical practices (Pontikis et al., 2011).

A FACS education prepares students to be successful in today's world. Fletcher & Tham (2019), "propose planet before industry as a radical idea in which the health and survival of our planet earth is given precedence over business interests" (p. 31). Sustainable development requires transformative changes in the practices of all involved: designers, manufacturers, marketers, consumers, and educators (Fletcher & Tham, 2019). As profit relates to consumption, consumers need a vision for sustainable practices that begins with their own consumption and well-being practices.

When FACS students incorporate sustainability through the everyday lens of their area of study, they become aware of the positive impacts they can make on the social, economic, and natural environment. They learn how choices in processes, materials, manufacturing practices, and consumption behaviors and habits, all affect individuals, families, and communities (Fletcher, 2008). A focus on good health, well-being, and responsible production and consumption in FACS 2000 promotes sustainability for future generations that protects the environment, workers, and communities.

Additional Opportunities for Sustainability Education

The sustainability module will also inform students about how they can get more involved in their academic, career, and personal lives. To achieve this goal, links to the institution's sustainability programs, certificates, events and so on will also be provided. For example, University of Georgia's Sustainability Certificate equips students with the skills to make significant, systemic changes in their communities, paving the way for a more sustainable future. The Sustainability Certificate is a 17-hour program, offered at the undergraduate and graduate levels. It emphasizes interdisciplinary learning through the integration of the social, economic, and environmental spheres of sustainability and the application of this learning to real-world sustainability challenges (Sustainable UGA, n.d.).

Assessment

After completing the module, or at the end of the class period, students are asked to define sustainability again, post their responses from the beginning prompt, and post what has changed in their thinking after the completion of the module. This can be done as a small group discussion for respective majors or as a class discussion, using an electronic medium such as Jam Board, a shared file, or on the college's learning system's discussion board. If done on an online discussion board, students respond to minimum two other students' post.

Additionally, at the end of the module, students will be presented with an essay/ discussion assignment in which they will explain what sustainability means to them and how sustainability and sustainable development can be used to impact their major. They will also answer how and in what ways SDG 3 and SDG 12 impact their majors.

Table 1 A potential outline of the FACS, Sustainability & Sustainable Development Module

Module Description	
1	Class discusses what sustainability means to them, how it ties into the mission of FACS, and how sustainability can be used to impact their major.
2	Definitions:

	• Sustainability and sustainable development from the United Nation's Brundtland Commission, 1987 • Three Pillars of Sustainability: Environmental, Economic, and Social • Circular Economy
3	Introduce United Nations 17 Sustainable Development Goals (SDG): history and justification. • IFHE 2022 World Congress, *Home Economics: Soaring Toward Sustainable Development*; its focus on six SDG. SDG 1: No poverty, SDG 2: Zero hunger, SDG 3: Good health and well-being, SDG 6: Education, SDG 5: Gender equality, SDG 6: Clean water and sanitation, SDG 12: Responsible consumption and production. • Class discusses six goals chosen for the IFHE conference and how they relate to FACS. • Provide synergistic focus on SDG 3: Good health and well-being, and SDG 12: Responsible consumption and production
4	Review the FACS Body of Knowledge and cross-cutting themes and discuss how they link FACS with sustainability, sustainable development, and SDG 3 and SDG 12.
5	How sustainability, SDG 3, and SDG 12 impact individual FACS departments and how sustainable thinking impacts one's choices in education, career, consumption needs, and well-being/personal life. • Human Development and Family Science (HDFS) and Sustainability. Examples of applications • Foods and Nutrition (FDN) and Sustainability. Examples of applications • Financial Planning, Housing and Consumer Economics (FHCE) and Sustainability. Examples of applications • Textiles, Merchandising and Interiors (TMI) and Sustainability. Examples of applications. For example, "because we all [wear clothing to go out in the world], [fashion] must be at the center of the conversation when talking about sustainability."
6	Provide examples of how students can get more involved with sustainability for career and personal life: links to college sustainability programs, certificates, events, etc.
7	At the end of the module students post/discuss their definition of sustainability again. They break out into small groups, etc. or post their responses from the start and after the completion of the module on the learning system discussion board. They also respond to at least two other students to assess how their sustainability competencies changed.
8	End of module, present essay/discussion assignment: • What has changed about what sustainability means to you and how sustainability can be used to impact your major? • How and in what ways do SDG 3: Good health and well-being, and SDG 12.: Responsible consumption and production, impact their majors.

Source: Authors, 2022

Conclusion

A more sustainable planet affects everyone. Approaching the required FACS foundational course through a sustainability lens and the SDG means to teach, incorporate, and use the principles of sustainability and sustainable development in the curriculum. This has the potential to create positive, lasting change that affects the planet, our lives, communities, consumption and production, and our well-being. FACS is committed to individuals, families, and communities within environmental contexts and across the lifespan. With an integrative, synergistic, and holistic focus, FACS recognizes change and evolution over time in areas such as clothing and consumption needs, housing, economics and finances, well-being, and family structures (Anderson & Nickols, 2001). A sustainability module in the FACS foundation course provides a model "for thinking about the future in which environmental, societal, and economic considerations are balanced in the pursuit of an improved quality of life" (UNESCO, n.d.) for all.

References

American Association of Family and Consumer Sciences. (2010). *About us. Our vision.* http://aafcs.org/AboutUs/inde?.asp

American Association of Family and Consumer Sciences. (n.d.). *What is FCS?* https://www.aafcs.org/about/about-us/what-is-fcs

Anderson, C.L. & Nickols, S.Y. (2001). The essence of our being. J*ournal of Family and Consumer Sciences, 93*(5), 15–18.

Brundtland, G.H., Khalid, M., Agnelli, S., Al-Athel, S., & Chidzero, B. J. N. Y. (1987) Our common future: *Report of the World Commission on Environment and Development*. http://www.un-documents.net/ocf-ov.htm

Circular Ecology. (n.d.). *Sustainability and sustainable development - What is sustainability and what is sustainable development?* https://circularecology.com/sustainability-and-sustainable-development.html

College of Family and Consumer Sciences. (n.d.). *About*. https://www.fcs.uga.edu/about

Department of Economic and Social Affairs. (2019, June 17). *'Waste not, want not' – European Union goes circular*. https://www.un.org/development/desa/en/news/sustainable/good- practice-circular-economy.html

Fletcher, K. & Tham, M. (2019). *Earth logic fashion action research plan*. The J J Charitable Trust. https://earthlogic.info/wp-content/uploads/2021/03/Earth-Logic-E-version.pdf

Fletcher, K. (2008). *Sustainable fashion and textiles design journeys*. Earthscan Publications Ltd.

Futris, T. G. (2007). Building community collaborations to support healthy and stable marriages. *The Forum for Family and Consumer Issues, 12*(1), 1–15.

Harvard T.H. Chan School of Public Health. (n.d.) *The nutrition source: Sustainability*. Harvard T.H. Chan School of Public Health. https://www.hsph.harvard.edu/nutritionsource/sustainability/

International Federation for Home Economics. (n.d.-a). *Sustainable development goals.* https://www.ifhe.org/united-nations/sustainable-development-goals/

International Federation for Home Economics. (n.d.-b) *Who we are*. https://www.ifhe.org/about-us/who-we-are/

Kolb, S. & Kozlowski, S. (2019). *Council of Fashion Designers of America guide to sustainable strategies*. Council of Fashion Designers of America. https://s3.amazonaws.com/cfda.f.mrhenry.be/2019/01/CFDA-Guide-to-Sustainable-Strategies_12.pdf

Nickols, S. Y., Ralston, P. A., Anderson, C., Browne, L., Schroeder, G., Thomas, S., & Wild, P. (2009). The family and consumer sciences body of knowledge and the cultural kaleidoscope: Research opportunities and challenges. *Family and Consumer Sciences Research Journal, 37*(3), 266-283. DOI: 10.1177/1077727X08329561

Pontikis, K., Martin, A., Cai, Y., Kim, J., Cao, W., Giordano, A., & Torabian-Riasati, S. (2011). Sustainability in teaching, research, and community practice: The FCS department at California State University, Northridge. *Journal of Family & Consumer Sciences, 103*(2), 40–46.

Sustainable UGA. (n.d.). *About the certificate*. https://sustainability.uga.edu/certificate/about/

Thompson, N. E., Harden, A. J., Clauss, B., Fox, W. S., & Wild, P. (2012). Key concepts of environmental sustainability in family and consumer sciences. J*ournal of Family & Consumer Sciences, 104*(1), 14–21. https://www.proquest.com/scholarly-journals/key-concepts-environmental-sustainability-family/docview/1268715465/se-2?accountid=14537

UNESCO. (n.d.). *Sustainable development*. https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd

United Nations Department of Economic and Social Affairs. (n.d.). *The 17 goals*. https://sdgs.un.org/goals

PEER-REVIEWED CONGRESS PAPER

Interest in adopting a client-choice model among food pantry managers in the Southern United States of America

Kathryn A. Carroll & Rachel Schichtl
University of Central Arkansas, United States

Abstract

Individuals experiencing hunger continues to be a global issue, with the United Nations recognizing "zero hunger" as one of their Sustainable Development Goals. In the United States (U.S.), food insecurity is often alleviated through government food assistance programs, and through community-based food aid such as food pantries. Food pantries often serve as an important source of local food aid, and typically distribute food to clients in one of two ways: either by using a prefilled bag or box of items (traditional method), or by allowing clients to select items (client-choice method). Numerous benefits have been associated with client-choice pantries, yet traditional pantries remain the norm in the Southern U.S., with pantry managers slow to adopt.

In order to gain insight into the factors that may be influencing pantry managers' interest in client-choice adoption, a survey of 187 pantry managers in Arkansas was conducted during Spring 2021. An ordered logit was used to determine the odds of a pantry manager indicating they were extremely interested in adopting client choice for several factors including operational characteristics and pantry demographics. Results indicate that the odds of a pantry manager being extremely interested in adoption were significantly higher for those who felt their pantry had enough variety and volume to support client-choice. Similarly, the odds of a manager being extremely interested in adoption were significantly higher for those already familiar with the method, and for managers who felt client-choice would be appealing to the households they served. As managers are often a primary decision-maker for their pantry, gaining the support of the pantry manager is often a key step towards client-choice adoption.

Pantry managers though may need additional outreach and education concerning the various ways that client-choice can be implemented. Educating food pantry managers on the implications that the factors examined here have on client choice, as well as training pantry mangers on various client choice techniques, could help transition less interested managers towards successful adoption and implementation. Increasing the number of client-choice food pantries in the Southern U.S. may be one way to help address food insecurity and hunger in this region.

KEYWORDS: **FOOD PANTRY, FOOD INSECURITY, CLIENT-CHOICE PANTRY, ZERO HUNGER, SUSTAINABLE DEVELOPMENT**

Introduction

Individuals experiencing hunger continues to be a global issue—so much so that the United Nations (UN) currently lists "Zero Hunger" as their second Sustainable Development Goal (SDG)

Carroll, K. A., & Schichtl R. (2022). Interest in adopting a client-choice model among food pantry managers in the Southern United States of America. *International Journal of Home Economics, 15*(2), 176-186.

Kathryn Carroll ✉ kcarroll5@uca.edu

(United Nations, n.d.). The UN estimates that globally, 2,370,000,000 people are either without food, or are unable to receive a healthy, balanced diet on a regular basis (United Nations, n.d.). The COVID-19 pandemic has only worsened this figure, with an estimated 70–161 million additional people experiencing hunger due to the pandemic (United Nations, 2021). In the United States (U.S.), the term food insecurity, defined as "limited or uncertain access to adequate food", is often used. Food insecurity continues to be a problem experienced by 11% of U.S. households in 2018 and is a particular concern in the Southern U.S., where 15.1% of households in states such as Arkansas experienced food insecurity that same year (Coleman-Jensen et al., 2019; USDA-ERS, 2018). Recent efforts by *Feeding America* indicate that in the Southern U.S., over half a million Arkansans struggle with hunger; over 31% of these are children (Feeding America, 2021).

Individual countries often respond to this crisis of hunger in a variety of ways, including food assistance programs, feeding organizations, and outreach programs. In the United States (U.S.), such efforts are commonly referred to as food assistance programs. Food assistance programs set forth by the US government include the Supplemental Nutrition Assistance Program (SNAP), which provides benefits to supplement the food budget of needy families so they can purchase healthy food and move towards self-sufficiency (Hall, 2021), and the Women, Infant and Children Program (WIC), which serves to safeguard the health of pregnant and breastfeeding women, infants, and children under the age of five by providing healthy foods and/or formula for participants. The WIC program serves almost half of all newborns in the U.S. (Hodges, 2022). The National School Lunch Program (NSLP) is another form of food assistance, serving over 22,000,000 students in the U.S. in 2020 (School Nutrition Association, n.d.). These government food assistance programs provide numerous individuals and families with food aid annually in the U.S. However, it is often necessary for many of these same individuals and families to also turn to community-based emergency food assistance programs for additional food aid. Some examples of these community-based types of programs in the U.S. include food banks, food pantries and soup kitchens, and other sites that serve meals to those in need. These community-based programs are frequently run by non-profit organizations, with the support of community and private donations.

In the U.S., such community-based food pantries often serve as an important source of local food aid (Coleman-Jensen et al., 2019; Gany et al., 2015). Pantries typically use either a prefilled bag or box of items (traditional method) to distribute food to clients, or they allow clients to select their food items (client-choice method) from the items available at the pantry. This client-choice pantry model is often preferred by clients, as it allows the client more control and dignity over their food choices, and has also been linked to a reduction in food waste (Kuhls, 2011; Remley et al., 2019; Verpy et al., 2003; Wilson et al., 2017). Food pantries that offer client-choice may be able to use this method of distribution to help promote healthier choices amongst their clients (Remley et al., 2013; Wilson et al., 2017). Offering client-choice has similarly been linked to increased fruit and vegetable consumption among food pantry clients (Martin et al., 2013). Prior efforts conducted by Remley et al. (2006) also noted the possible benefits of client-choice as a valuable tool for reducing food insecurity.

Yet in light of the potential benefits of using client-choice, traditional pantries remain the norm in Southern states such as Arkansas, where only 13% of food pantries offered client-choice in 2020 according to the Arkansas Food Bank (L. Allbritton, personal communication, February 10, 2022). Food pantry managers often play an important role in decision-making for their pantry (Precious et al., 2017). Gaining a better understanding of the various factors influencing pantry managers' interest in adopting client-choice is key to increasing their availability and thus developing a more sustainable model of food aid centered on the needs of the pantry client. Yet no known efforts exist examining pantry managers' interest in adopting client-choice in Arkansas.

The objectives of this research then are to: 1) examine familiarity with, and interest in adopting, a client-choice model among Arkansas pantry managers, 2) identify factors that may influence pantry managers' interest in client-choice, such as operational factors and client and pantry demographics, and 3) determine perceived obstacles to adoption that influence pantry manager interest.

To address these objectives, the researchers partnered with the Arkansas Food Bank to survey 187 Arkansas food pantry managers during Spring 2021 (51% response rate). The survey featured questions concerning the pantry manager's familiarity with, and interest in adopting, a client-choice model, as well as questions regarding the operations of the pantry, characteristics of the clients served, and pantry demographics. Survey respondents were also presented with a series of possible obstacles to client-choice adoption, and were asked to rate how likely each obstacle was to be an issue for their pantry.

Results suggest that pantry managers who indicated they had enough variety and volume of food at their pantry were more likely to express an interest in adopting client-choice.

Similarly, pantry managers who felt client-choice would be appealing to their clients, and who were familiar with client-choice, were also more likely to express interest in adopting this pantry method. Those who felt extensive training would be needed, and who were concerned about having adequate space to adopt, were less likely to express an interest in client-choice adoption.

Background and Literature Review

Food Banks and the Arkansas Food Bank Distribution Model

Food insecurity is often associated with a variety of health issues, including unhealthy eating practices (Gallegos et al., 2014), increased likelihood of chronic illness (Seligman et al., 2010; Parker et al., 2010; Pan et al., 2012), fatigue (Munro et al., 2013), depression (Bruening et al., 2016), and issues with mental illness and stress (Martin et al., 2016). To help alleviate food insecurity and its associated concerns, many food pantries in the U.S. coordinate with an area food bank to secure some or all of their food items. This area food bank then provides the pantry with food items that they can distribute to pantry clients and local community members in need. This food bank also serves as a central storage and distribution center.

In Southern states such as Arkansas, the Arkansas Food Bank (AFB) serves as the state's largest non-governmental provider of food aid, working with over 350 active food pantries across the state. In 2019, the AFB distributed 26,000,000 pounds of food to over 280,000 residents across 33 counties (Arkansas Food Bank, 2020). Additional insight into how the AFB provides food pantries in Arkansas with food items is offered by AFB Community Initiatives Manager, Lauren Allbritton:

> Specifically, the AFB does have food that is made available to free to their pantries through funding provided by the state government. Additionally, some of the food is charged for. Food that is donated through salvage and retail loads (food drives, grocery store donations, etc.) gets sorted into like items (mixed packaged foods, canned goods, breakfast items, snacks, non-animal protein, etc.) and then they get cased. Those items then get put on the shopping list and the cost associated is about $0.18/ lb USD. The last classification of items offered to the food pantries is purchased foods. This is product that is purchased by the truckload from vendors. It is purchased at a cheaper cost, and then is charged at a cheaper rate than at a grocery store.

> All food is made available to the food pantries through an online shopping platform similar to how one might place an order for groceries (called Agency Express). Items are on a first come first serve basis. The inventory rotates constantly and sometimes does pose a problem. That means that the AFB ships this food out to food pantries that have the willingness and capacity to accept whatever is sent. The AFB has benchmarks to meet each quarter called MPIN (meals per person in need). This data set tells them if they need to be pushing more poundage to a particular county. Outside of push orders, the AFB offers capacity-building grants and food credits to all food pantries in October. The food pantries do have to apply for the grant. Food credits are provided based on funding (L. Allbritton, personal communication, February 10, 2022).

Food Pantry Models and Pantry Managers

Once a community food pantry has secured food items either by coordinating with an area food bank, or through community and private donations, the pantry will typically distribute food to their clients in one of two ways: by using a prefilled bag/box of items (traditional model), or by allowing clients to select some or all of their items (client-choice model). As previously mentioned, client-choice pantries offer many benefits to the households they serve, who frequently prefer the ability to select their food items (Remley et al., 2010; 2019). Offering client choice not only gives clients more control and dignity over their food choices (Wilson et al., 2016), but has also been linked to a reduction in pantry and household food waste (Remley et al., 2010; Pruden et al., 2020).

The client-choice method can be implemented at a food pantry using several different models. These include the supermarket model (clients can shop like at a store), table model (food items/groups are displayed on tables), inventory list model (clients select from a given list), points/color-coded model (items are assigned points/colors), and the food weight model (clients can select a set poundage of food), among others (Akron-Canton Regional Foodbank, 2012; Indiana Emergency Food Resource Network, n.d.).

In contrast, traditional pantries are associated with a variety of concerns. These include clients receiving items they do not need and/or will not use, and pantries wasting resources by stocking unwanted food (Remley et al., 2010). Prior research by Bryan et al. (2019) concluded the nutritional value of food offered at client-choice pantries was often higher compared to traditional pantries; clients requesting fresh food items mostly drove this. Prior research also suggests that offering client-choice can be used to promote healthier choices (Remley et al., 2013; Wilson et al., 2017), has been linked to increased fruit and vegetable consumption (Martin et al., 2013), and has the potential to combat food insecurity (Remley et al., 2006). In light of the benefits of client-choice, traditional pantries remain the norm in the Southern U.S. Gaining a better understanding of the factors influencing pantry managers' interest in adopting client-choice, is key to both increasing their availability in states like Arkansas, and better meeting the needs of food-insecure clients.

Food pantry managers in the U.S. serve an important role in the distribution of food aid through community-based food pantries, and their perceptions of both their pantry and their clients may ultimately impact decision-making at the pantry level. For example, previous research by Wetherill et al., (2019) examined pantry managers' perception of fruit and vegetable intake among the clients they serve, and found that such perceptions ultimately influenced the level of fruit and vegetable distribution sourced from the pantry's area food bank. An earlier study by Precious et al. (2017) examined the decision-making process of pantry managers, and found that they often used a citizen-agent approach of thinking. This citizen-agent approach was an approach often motivated by logic and the interests of the pantry and the clients they serve.

Invoking this citizen-agent way of thinking may be one way to help appeal to pantry managers who may not be as interested in adopting a client-choice model.

Methodology

Objectives and Hypotheses

To investigate the interest of food pantry managers in adopting a client-choice model, the objectives of this study were to: 1) examine familiarity with, and interest in adopting, a client-choice model among Arkansas pantry managers, 2) identify factors that may influence pantry managers' interest in client-choice, such as operational factors and client and pantry demographics, and 3) determine perceived obstacles to adoption that influence pantry manager interest. It is hypothesized that there may be significant operational factors, and client and pantry demographics, that influence pantry managers' interest in adopting client-choice. It is also hypothesized that any perceived obstacles to client-choice adoption identified will significantly decrease the likelihood of a pantry manager being interested in client-choice.

Survey Design

In order to examine the above objectives, a collaboration with the Arkansas Food Bank was established during Spring 2021, to conduct an exploratory survey of Arkansas food pantry managers who were not using the client-choice method, and who were the primary decision-maker for their pantry. The survey featured questions concerning the pantry manager's familiarity with the client-choice pantry model. Respondents were also asked to rate their interest in adopting a client-choice model on a 5-point scale. Additional questions concerning the operations of the pantry, the characteristics of the clients served, and pantry demographics were also included. Survey respondents were also presented with a series of possible obstacles to client-choice adoption questions, and were asked to rate on a 5-point scale how likely each obstacle was to be an issue for their pantry. These potential obstacles were developed in consultation with the Arkansas Food Bank and were piloted by AFB staff and several food pantry managers affiliated with the AFB.

The final version of the survey was distributed using Qualtrics survey software to an email list of 366 pantry managers provided by the AFB, during Spring 2021. The survey response rate was 51%, resulting in 187 responses, and on average took respondents 15–20 minutes to complete. A participation incentive was also offered at the conclusion of the study, and respondents were informed that 150 pantry managers would be randomly selected to each receive a $150 USD pantry credit to the AFB. This pantry credit could be used by the manager to cover the cost of any items purchased for their pantry through the AFB; AFB items are tax-free and deeply discounted compared to purchasing through an area grocery store. The study protocol was approved by the University's Institutional Review Board for research on human subjects, and informed consent was obtained from all respondents.

Data Analysis

An ordered logit model was used to determine the effect of operational factors, client and pantry demographics, and perceived obstacles on the likelihood of a pantry manager being interested in adopting a client-choice model, estimated in Stata 17.0 (StataCorp, 2021). Ordered logistic regression was determined to be a good fit for the data, given the ordered nature of the dependent variable InterestInClientChoice, which was measured on a 5-point scale where 1 = "not at all interested" and 5 = "extremely interested" in adopting a client-choice model at their food pantry.

Parameter estimates obtained from the ordered logit model were next used to calculate odds ratios, which enables one to examine the odds of a pantry manager being interested in adopting client choice, for each model variable. A description of the model variables, and the measurements used for each variable, can be viewed in Table 1.

TABLE 1 Description of Variables

Variable	Description
InterestInClientChoice	1 "not at all interested" to 5 "extremely interested" in adopting a client-choice model
NumberOfClientHHs	Number of households served per month (averaged pre-during COVID)
PercentageDonations	% of pantry food typically donated per month
PantryBudget10K	Pantry budget in thousands of U.S. dollars
AppealingToClients	1 if client-choice would be appealing to their clients, 0 otherwise
ClientChoiceFamiliarity	1 if familiar with client-choice, 0 otherwise
LimitedPantryHours	1 if "agree" or "strongly agree" that limited pantry hours would be an issue, 0 otherwise
IncreasedFoodWaste	1 if "agree" or "strongly agree" that an increase in food waste would be an issue, 0 otherwise
VolunteersOnly	1 if pantry staffed by volunteers only, 0 otherwise
ExtensiveTrainingNeeded	1 if extensive training of pantry staff and volunteers would be needed, 0 otherwise
LackAdequateSpace	1 if "agree" or "strongly agree" that a lack of adequate space would be an issue, 0 otherwise
YesEnoughVarietyofFood	1 if "agree" or "strongly agree" the pantry has enough variety of food to support client choice, 0 otherwise
YesEnoughVolumeOfFood	1 if "agree" or "strongly agree" the pantry has enough volume of food to support client choice, 0 otherwise
LackNutritionalKnowledge	1 if "agree" or "strongly agree" that lack of client understanding of basic nutritional concepts would be an issue, 0 otherwise

Results

Descriptive Statistics

Descriptive statistics for the model variables can be viewed in Table 2. Pantry managers reported serving an average of 261 (SD = 172.16) unique client households per month, and reported that 67.88% (SD = 24.07%) of their pantry food per month was donated. Respondents were asked to report both the number of client households served pre and during the COVID-19 pandemic, and an average of these two responses was used to generate the average client households served per month.

The average pantry budget of respondents was $13,590 (SD = $8,250), and 69% (SD = 0.31) of pantry managers indicated their pantry was run by volunteer help only. An average of 49% (SD = 0.50) of pantry managers indicated that they felt client-choice would be appealing to the client households that they serve, and 35% (SD = 0.48) indicated that they were familiar with the client-choice food pantry model.

TABLE 2. Descriptive Statistics

Variable	Mean (std dev)	Median (IQR)[a]

InterestInClientChoice	3.51 (1.41)	3.0 (1 to 4)
NumberOfClientHHs	261.25 (172.16)	160 (73 to 300)
PercentageDonations	67.88% (24.07)	56.50% (30 to 76)
PantryBudget10K	13.59 (8.25)	12.99 (4.99 to 22.99)
	Mean (std dev)	
AppealingToClients	0.49 (0.50)	
ClientChoiceFamiliarity	0.35 (0.48)	
LimitedPantryHours	0.37 (0.43)	
IncreasedFoodWaste	0.27 (0.21)	
VolunteersOnly	0.69 (0.31)	
ExtensiveTrainingNeeded	0.19 (0.18)	
LackAdequateSpace	0.32 (0.27)	
YesEnoughVarietyofFood	0.41 (0.49)	
YesEnoughVolumeOfFood	0.40 (0.49)	
LackNutritionalKnowledge	0.39 (0.49)	

Note: [a] Interquartile range is presented in parentheses for non-dichotomous variables

Odds Ratios

Estimated coefficients obtained from the ordered logit model were next used to calculate proportional odds ratios for each model variable, which can be viewed in Table 3. A similarly specified ordered probit model was also estimated in order to check for model misspecification. Both the ordered logit, and the ordered probit, resulted in similar coefficient estimates with the same levels of significance observed for each parameter. Postestimation, both Akaike's and Schwarz's Bayesian information criteria (AIC and BIC) were compared between the ordered logit and the ordered probit. The AIC and BIC statistics obtained were slightly lower for the ordered logit model, indicating the ordered logit was a slightly better fit for our survey data. To correct for any possible heteroscedasticity in the error structure, the odds ratios obtained from the ordered logit in Table 3 reports robust standard errors.

The Odds can be interpreted as the number of pantry managers who indicated being extremely interested in adopting a client choice model, compared to pantry managers who indicated lower levels of interest in client-choice adoption. For pantry managers who indicated that offering client-choice would be appealing to the clients they serve, the odds of indicating they were extremely interested in client-choice adoption was 3.83 higher ($p = 0.005$) compared to those who did not feel client-choice would appeal to their clients. The odds of being extremely interested in client-choice adoption were 6.03 higher ($p = 0.002$) for pantry managers who were already familiar with the client-choice method, compared to those who were less familiar with the term. The odds of pantry managers who indicated their pantry had enough variety and volume of food were 3.52 ($p = 0.066$) and 7.03 times higher ($p \leq 0.001$) respectively, compared to those who indicated they felt their food pantry lacked the variety and volume necessary to support client-choice.

Several factors were identified as having a significantly negative effect on the odds of being extremely interested in client-choice adoption. For a 1% increase in the percentage of pantry food typically donated each month, the odds of being extremely interested in adopting client-choice significantly decreased ($p \leq 0.001$). Similar results were uncovered for pantry managers who felt that extensive training of pantry staff and volunteers would be needed in order to support client-choice, and that a lack of adequate space would be an issue. Pantry managers who indicated they felt extensive training of staff and/or volunteers would be needed at their pantry in order to offer client choice ($p = 0.010$), and who felt a lack of adequate space would be an issue ($p \leq 0.001$) both had a decreased likelihood of being extremely interested in adopting a client-choice model.

Although statistically significant, both the impact of the number of client households served, and whether the pantry manager was concerned about clients lacking a basic understanding of nutritional concepts, yielded negligible odds ratios.

TABLE 3. Ordered Logit Model and Odds Ratios, Interest in Adopting a Client-Choice Model (*N* = 187)

Variable	**Odds Ratio (robust se)**	**Pr > |z|**
NumberOfClientHHs	1.001 (0.049)	0.071
PercentageDonations	0.379(0.105)	<0.001
PantryBudget10K	1.278(0.222)	0.158
AppealingToClients	3.834(1.849)	0.005
ClientChoiceFamiliarity	6.029(3.538)	0.002
LimitedPantryHours	1.373(0.462)	0.347
IncreasedFoodWaste	0.849(0.233)	0.550
VolunteersOnly	2.351(1.475)	0.173
ExtensiveTrainingNeeded	0.296(0.141)	0.010
LackAdequateSpace	0.594(0.089)	<0.001
YesEnoughVarietyofFood	3.522(2.417)	0.066
YesEnoughVolumeOfFood	7.031(3.895)	<0.001
LackNutritionalKnowledge	0.999(0.049)	0.002
Log pseudolikelihood	-116.022	
Wald chi2(13)	54.65	
Prob > chi2	0.000	

NOTE: Variables in bold are significant at the 10% level or better

Discussion and Implications

Discussion of Findings and Practical Implications

Findings from this study indicate that 49% of respondents (SD = 0.50) felt client-choice would be appealing to the households that their food pantry served. Yet a smaller percentage of respondents (35%, SD = 0.48) indicated that they were already familiar with client choice. Some of this gap between client-choice familiarity, and whether pantry managers thought it would be appealing to clients, can likely be addressed with additional education concerning what client-choice is, and how this pantry method can be implemented at the pantry level. Results also indicated that the odds of being extremely interested in adopting client-choice were 3.83 higher for managers who felt the method would appeal to their clients. However, that roughly half of our sample failed to indicate that they thought client-choice would be appealing to the households they serve is noteworthy. It may be that a lack of understanding as to the various ways that client-choice can be implemented at the pantry level, and an unawareness of the numerous benefits for clients, exists among this population of pantry managers. Prior efforts by Remley et al. (2006) noted a variety of ways in which to facilitate client-choice. Food pantry stakeholders and food banks may wish to consider offering pantry managers with additional outreach and education concerning the different ways client-choice could be incorporated into existing pantry operations.

The results of this research also indicated that the odds of a pantry manager being extremely interested in adoption were higher for managers who felt their pantry had enough variety and volume of food to support the client-model. Although client-choice is commonly thought of as allowing clients to shop the pantry much as they would with a grocery store, this is not necessarily the case. Offering a list of items from which clients can select, or using a points system, are other methods that can facilitate client-choice. For pantries concerned about having sufficient volume and variety of food, outreach efforts focused on ways that client-choice may be feasible within smaller pantries and/or pantries with less variety of food items, may help alleviate such concerns.

As the odds of being extremely interested in client-choice adoption were 6.03 higher for pantry managers who were already familiar with the method, suggesting that increasing awareness of client-choice among managers may be key to increasing the number of pantries in Arkansas that offer this method. Both concerns about extensive training being necessary for pantry volunteers and staff to be able to implement client choice, and that having a lack of adequate space would be an issue, had a significantly negative effect on the odds of being interested in client-choice adoption. Outreach efforts by area food banks should consider focusing on alleviating such concerns. Outreach materials could even highlight the easiest way client-choice could be implemented based on characteristics of the pantry. For example, results uncovered here suggest that the odds of being extremely interested in adoption decreased when a 1% increase in the percentage of food donated occurred. Efforts focused on ways to offer client-choice when one has less control over their pantry inventory, and are more reliant on outside donations, could be useful information for managers and pantry stakeholders alike.

Increasing the number of food pantries in the Southern U.S. that offer client-choice may be one way to help address food insecurity and hunger issues in a way that may better meet the needs of lower-income households. The results uncovered here suggest increasing familiarity of client-choice among food pantry managers, coupled with increased awareness as to how client-choice may appeal to their clients, could increase interest in client-choice adoption. As pantry managers are often a primary decision-maker for their particular food pantry, gaining the support of the manager is a key step in moving towards more wide-spread adoption of client-choice.

Research Limitations and Future Research

As only Arkansas food pantry managers were included in the survey sample, future efforts should investigate whether the findings uncovered here hold for other states in the Southern U.S. Future efforts could also explore whether such findings hold outside of the U.S. It is also important to note that the survey used in this research relied on each pantry manager to self-report their interest in client-choice adoption. Future research could examine the use of revealed-preference data from pantry managers as an alternative means through which to measure their interest in client-choice adoption.

References

Akron-Canton Regional Foodbank. (2012). “Client Choice Pantry Handbook”. https://www.akroncantonfoodbank.org/sites/default/files/Choice-Pantry-

Handbook_May2012.pdf. (Accessed December 12, 2021).

Arkansas Food Bank. (2021). “Arkansas Hunger Statistics”. https://arkansasfoodbank.org/about-us/hunger-info/hunger-statistics-arkansas/ (Accessed

December 12, 2021).

Bruening, M., Brennhofer, S., Woerden, I. V., Todd, M., & Laska, M. (2016). Factors related to the high rates of food insecurity among diverse, urban college freshmen. *Journal of the Academy of Nutrition and Dietetics, 116*(9), 1450-1457. https://doi.org/10.1016/j.jand.2016.04.004

Bryan, A. D., Ginsburg, Z. A., Rubinstein, E. B., Frankel, H. J., Maroko, A. R., Schechter, C. B., Cooksey Stowers, K., & Lucan, S. C. (2019). Foods and drinks available from urban food pantries: Nutritional quality by item type, sourcing, and distribution method. *Journal of Community Health, 44*(2), 339-364. https://doi.org/10.1007/s10900-018-0592-z

Coleman-Jensen, A., & Rabbitt, M. P. (2021). Food Pantry Use Increased in 2020 for Most Types of US Households. *Amber Waves: The Economics of Food, Farming, Natural Resources, and Rural America, 2021*(1490-2021-1571). https://www.ers.usda.gov/amber-waves/2021/november/food-pantry-use-increased-in-2020-for-most-types-of-u-s-households/

Coleman-Jensen, A., Rabbitt, M., Gregory, C., & Singh, A. (2019). "Household food security in the United States in 2018." United States Department of Agriculture, Economic Research Service. USDA-ERS Economic Research Report, (ERR-270). https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=7415.3

Feeding America. (2021). "Hunger in Arkansas". Retrieved from https://www.feedingamerica.org/hunger-in-america/arkansas (Accessed September 8, 2021).

Gallegos, D., Ramsey, R., & Ong, K.W. (2014). Food insecurity: Is it an issue among tertiary students? *Higher Education, 67*(5), 497-510. https://doi.org/10.1007/s10734-013-9656-2

Gany, F., Bari, S., Crist, M., Moran, A., Rastogi, N., & Leng, J. (2013). Food insecurity: Limitations of emergency food resources for our patients. *Journal of Urban Health, 90*(3), 552–558. https://doi.org/10.1007/s11524-012-9750-2

Hall, L. (2021, January 12). A closer look at who benefits from SNAP: State-by-state fact sheets. Center on Budget and Policy Priorities. https://www.cbpp.org/research/food-assistance/a-closer-look-at-who-benefits-from-snap-state-by-state-fact-sheets. (Accessed March 30, 2022).

Hodges, L. (2022, February 4). *USDA ERS -WIC Program*. https://www.ers.usda.gov/topics/food-nutrition-assistance/wic-program/. (Accessed March 30, 2022).

Indiana Emergency Food Resource Network. (n.d.) "Information on Client Choice – Client Choice Manual". https://www.purdue.edu/indianasefrnetwork/Home/MediaCategory/cc (Accessed January 10, 2022).

Kuhls, J. P. (2011). Current food usage patterns, habits, and preferences of food pantry clients in central Ohio. [Master's thesis, Ohio State University]. OhioLINK Electronic Theses and Dissertations Center. http://rave.ohiolink.edu/etdc/view?acc_num=osu1316624056

Martin, K., Wu, R., Wolff, M., Colantonio, A., & Grady, J. (2013). A Novel Food Pantry Program: Food Security, Self-Sufficiency, and Diet-Quality Outcomes. *American Journal of Preventive Medicine, 45*(5), 569–575. https://doi.org/10.1016/j.amepre.2013.06.012

Munro, N., Quayle, M., Simpson, H., & Barnsley, S. (2013). Hunger for knowledge: Food insecurity among students at the University of KwaZulu-Natal. *Perspectives in Education. 31*(4), 168-179. https://hdl.handle.net/10520/EJC151336

Pan, L., Sherry, B., Njai, R., & Blanck, H. M. (2012). Food insecurity is associated with obesity among US adults in 12 states. *Journal of the Academy of Nutrition and Dietetics, 112*(9), 1403-1409. https://doi.org/10.1016/j.jand.2012.06.011

Parker, E. D., Widome, R., Nettleton, J. A., & Pereira, M. A. (2010). Food security and metabolic syndrome in U.S. adults and adolescents: Findings from the National Health and Nutrition Examination Survey, 1999–2006. *Annals of Epidemiology, 20*(5), 364-370. https://doi.org/10.1016/j.annepidem.2010.02.009

Precious, C., Baker, K., & Edwards, M. (2017). Coping with Compassion: Role Transformation Amongst Oregon Food Pantry Directors. Voluntas: *International Journal of Voluntary & Nonprofit Organizations, 28*(5), 2011–2031. https://doi.org/10.1007/s11266-017-9894-5

Pruden, B., Poirier, L., Gunen, B., Park, R., Hinman, S., Daniel, L., Gu, Y., Katragadda, N., Weiss, J., & Gittelsohn, J. (2020). Client choice distribution model is associated with less leftover food in urban food pantries. *Current Developments in Nutrition, 4* (Supplement_2), 266–266. https://doi.org/10.1093/cdn/nzaa043_117

Remley, D. T., Kaiser, M. L., & Osso, T. (2013). A case study of promoting nutrition and long-term food security through Choice Pantry Development. *Journal of Hunger & Environmental Nutrition, 8*(3), 324–336. https://doi.org/10.1080/19320248.2013.819475

Remley, D., Melgar-Quiñonez, H., & McDowell, J. R. "Making the switch: a guide for converting to a client choice food pantry" (2006). http://site.foodshare.org/site/DocServer/Making_the_Switch_to_Client_Choice.pdf?docID=6081 (Accessed September 8, 2021).

Remley, D., Franzen-Castle, L., McCormack, L., & Eicher-Miller, H. A. (2019). Chronic health condition influences on client perceptions of limited or non-choice food pantries in low-income, rural communities. *American Journal of Health Behavior, 43*(1), 105–118. https://doi.org/10.5993/AJHB.43.1.9

Remley, D. T., Zubieta, A. C., Lambea, M. C., Quinonez, H. M., & Taylor, C. (2010). Spanish- and English-speaking client perceptions of choice food pantries. *Journal of Hunger & Environmental Nutrition, 5*(1), 120–128. https://doi.org/10.1080/19320240903574387

School Nutrition Association. (n.d.). *School meal trends & stats*. Retrieved March 30, 2022, from https://schoolnutrition.org/aboutschoolmeals/schoolmealtrendsstats/

Seligman, H. K., Laraia, B. A., & Kushel, M. B. (2010). Food insecurity is associated with chronic disease among low-income NHANES participants. *The Journal of Nutrition, 140*(2), 304-310. https://doi.org/10.3945/jn.109.112573

StataCorp. 2021. Stata Statistical Software: Release 17.0. College Station, TX: StataCorp LLC.

United Nations. (n.d.). *The 17 goals | sustainable development*. United Nations. Retrieved from: https://sdgs.un.org/goals (Accessed March 30, 2022).

United States Department of Agriculture -Economic Research Service. (2021). Definitions of Food Security. Retrieved from https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx. (Accessed September 8, 2021).

Verpy, H., Smith, C., & Reicks, M. (2003). Attitudes and behaviors of food donors and perceived needs and wants of food shelf clients. *Journal of nutrition education and behavior, 35*(1), 6–15. https://doi.org/10.1016/s1499-4046(06)60321-7

Wetherill, M. S., White, K. C., & Seligman, H. (2019). Charitable food as prevention: Food bank leadership perspectives on food banks as agents in population health. *Community Development (Columbus, Ohio), 50*(1), 92–107. https://doi.org/10.1080/15575330.2019.1570961

Wilson, N. L. W., Just, D. R., Swigert, J., & Wansink, B. (2017). Food pantry selection solutions: A randomized controlled trial in client-choice food pantries to nudge clients to targeted foods. *Journal of Public Health*, https://doi.org/10.1093/pubmed/fdw043

PEER-REVIEWED CONGRESS PAPER

Lesson improvement through lesson studies: A case study on the lessons for responsible living and consumption in elementary home economics education

Noriko Kishi
Fukuoka University, Japan

Introduction

In Japanese elementary schools, home economics is compulsory for fifth and sixth graders. Elementary school provides a foundation for developing many life skills. “Family and family life,” “food, clothing, and housing,” and “consumption and the environment” are comprehensively taught to all children up to high school. The home economics education framework is important when it comes to developing individuals who value responsible living. Of the courses of study that will be implemented sequentially from fiscal year (FY) 2020, the content of the “consumption and the environment” module has been enhanced in response to the need for building a sustainable society (Ministry of Education, Culture, Sports, Science and Technology [MEXT], 2017). However, a survey of elementary school teachers shows that consumer education is a low priority for teachers (Okutani & Nishimura, 2011, Onoda et al., 2015) and that the subject lacks teacher training and teaching materials (Ishikawa, 2014).

Approximately 30% of all Japanese elementary school home economics classes are taught by means of a subject-based teacher assignment system, in which one teacher takes responsibility for a specific subject (MEXT, 2019). The percentage of subject-based teachers within home economics is the third highest after music and science. However, home economics teachers rarely have specialized training like secondary school teachers do. It has been reported that there are many classes in elementary school home economics where only practical activity is performed without clear objectives (Kishi, 2019). Home economics teachers in elementary schools, including classroom-based teachers, have few opportunities for training in the latest topics within the subject. In-service training is indispensable when improving the quality of lessons on today’s issues, such as responsible living and consumption.

For public school teachers, there is a regular training system in place from the first year of employment to ensure their continuous development as teachers (MEXT, 2015). In addition to lectures at educational centers, tours such as company visits, and practical training programs, lesson studies are conducted in Japan. Based on Lewis et al.’s (2006) organization of the Japanese lesson study, it can be categorized under four processes: identify focus, planning, research lesson, post-lesson discussion; moreover, it is characterized by repeated cycles of research and outside expertise. In the planning stage, teachers collaborate in groups in order to carry out kyozai kenkyu, which is the study of materials relevant to the research theme. This leads to the production of a written plan for a research lesson. Collaborative planning is widely seen as a form of teacher training in Japan. These lesson study styles are summarized in a handbook and are expanding internationally (e.g., Lewis & Hurd, 2011; Stepanek et al., 2007; Dudley, 2014). However, lesson studies for subjects related to home economics are not as widespread as those for other subjects (e.g., Lim et al., 2011). On the other hand, training for

Kishi, N. (2022). Lesson improvement through lesson studies: A case study on the lessons for responsible living and consumption in elementary home economics education. *International Journal of Home Economics, 15*(2), 187-199.

Noriko Kishi ✉ kishin@fukuoka-edu.ac.jp

teachers on “responsible living and consumption” includes efforts through international collaboration such as the ProfESus.eu project. In Japan, seminars for teachers are held in cooperation with consumer centers in each region. Teaching proposals and teaching materials are distributed and can be downloaded as teaching support for teachers through the PERL project and other organizations in many countries (National Institute on Consumer Education Japan, 2011, 2014, 2017). Examination of lesson studies as a training method for class development and reflection, based on actual lesson practice, was undertaken at an international conference in Tokyo in 2017 (The research group of lesson study in Home Economics, 2018). However, even in Japan, where lesson studies are common, there are few studies that indicate in detail how home economics classes improve and through what kinds of efforts.

Therefore, in this study, we focus on the lesson study of “consumption” lessons in elementary schools and show how teachers gained a deeper understanding of the topics and improved their lessons through lesson studies based on case studies. The purposes of this study were to outline the process of improving the class through lesson studies and to examine effective ways of training teachers based on lesson practices. The strength of this study is that teachers with little experience or specialty can gain insights into how to enhance teaching in the subject.

Methods

The study was conducted on the unit “Good use of things and money and shopping” from FY2015 to FY2017 at an elementary school affiliated with University A. There were three reasons this case was chosen: first, the same theme was examined through repeated cycles of lesson studies; second, the author served as an advisor for these lesson studies; and third, detailed materials were available. This research can be called action research. University A’s affiliated schools, in cooperation with the local board of education, have the role of providing local lesson models for each subject and of training local teachers. Therefore, the subject-based teacher assignment system is basically adopted in university-affiliated schools. Local teachers will be assigned to the affiliated school for a period of about three years due to personnel exchanges between the board of education and the university. Affiliated schoolteachers conduct lesson studies several times a year for the subject of which they are in charge. The subject teacher in charge of home economics had been teaching at a public elementary school for about 20 years. They were assigned in FY2015 and spent three years at the university-affiliated school.

The lesson plans submitted for the meetings, videos of the research lessons, and field notes of the lesson planning and review discussions were collected. First, we focused on the planning process and analyzed the teaching plan shared in the study process and the final plan of the research lessons. Second, we analyzed changes in the quality of teaching and learning, utilizing the two recorded research lesson videos in FY2015 and FY2017.

As a matter of ethical consideration for the research, we obtained the prior consent of the school principal and the teacher in charge of recording lessons and discussions, following the code of ethics of the University of Teacher Education Fukuoka.

Findings

Lesson planning process and the research lesson in FY2015

Changes in lesson plans

In FY2015, lesson studies on “how to choose and buy things” were conducted in fifth grade home economics classes. In this case, the core members comprised the teacher in charge of home economics, school colleagues, senior schoolteachers who were previous home economics teachers at the school, and a university researcher of home economics education. The planning process for the open class in FY2015 was as follows. At the beginning of the year, it was decided that a research presentation depicting all grades of research and classes would be held in February. To prepare for this, the teachers made a first draft of a lesson plan around December. The first plan was reviewed once by colleagues in the school during the winter vacation. Then, in mid-January, the teacher separately contacted senior members and the university researcher for advice on the first proposal. The teacher emailed the proposal to the university researcher the day before the consultation and then conducted a face-to-face discussion. One week later, the teacher sent a revised lesson plan to the advisers. The teacher exchanged comments with both senior and university members by email, and the teacher had to decide the lesson plan for the open class, although they did not have enough time to finalize agreement with the advisors. Figure 1 shows how the outline of the lesson plan changed in the above process. The main learning activity of the envisaged plan is a simulation of comparing and selecting information on products. The time spent on this activity in the plan was 6 unit-hours, and there was no change throughout the consultations.

When looking at the teaching materials in this study, changes have been made to the first draft. Initially, the teaching materials for product selection and purchase dealt with daily necessities and food, such as sweets, paper cups, and fruits used for a sayonara class party. It was a plan that could lead to many viewpoints when shopping. However, the university researcher indicated that the link between the simulation at school and the plans to practice at home was not clear, and the flow was interrupted. One of the senior teachers also advised that it would be better to draw a connection to previously completed lessons. In contrast to the original proposal, the revised and final proposals have been changed to purchasing materials for making miso soup. The idea was to focus on the selection of ingredients for cooking as an example of daily purchase. As a result of this, in the revised proposal, even the main theme of the subject was a narrow one: to buy miso soup ingredients. The main theme in this unit was confirmed after the university researcher advised that shopping for ingredients should not be the final goal, and the final lesson plan was generalized to making good choices and purchases.

In 2015, the teaching materials changed with each consultation. There were several reasons for this. First, it was necessary to modify the original goal because the teacher’s intention when selecting teaching materials and the purpose of the lesson were insufficiently clear. Second, it is probable that the teacher could not properly explain the necessity of the original drafting materials to the advisers of the lesson study, was then influenced by different ideas from third parties, and was ultimately forced to restart at square one in considering the teaching materials each time. In addition, the teacher was initially unable to understand the consultation process itself. Therefore, at the time of the consultation, the advisers were not informed of the review process or the presence or comments of other advisers. In their first home economics lesson study, the teaching plan changed repeatedly, even for the teachers with plenty of teaching experience. This was because the lesson plan progressed through self-study and one-off exchanges with multiple advisors.

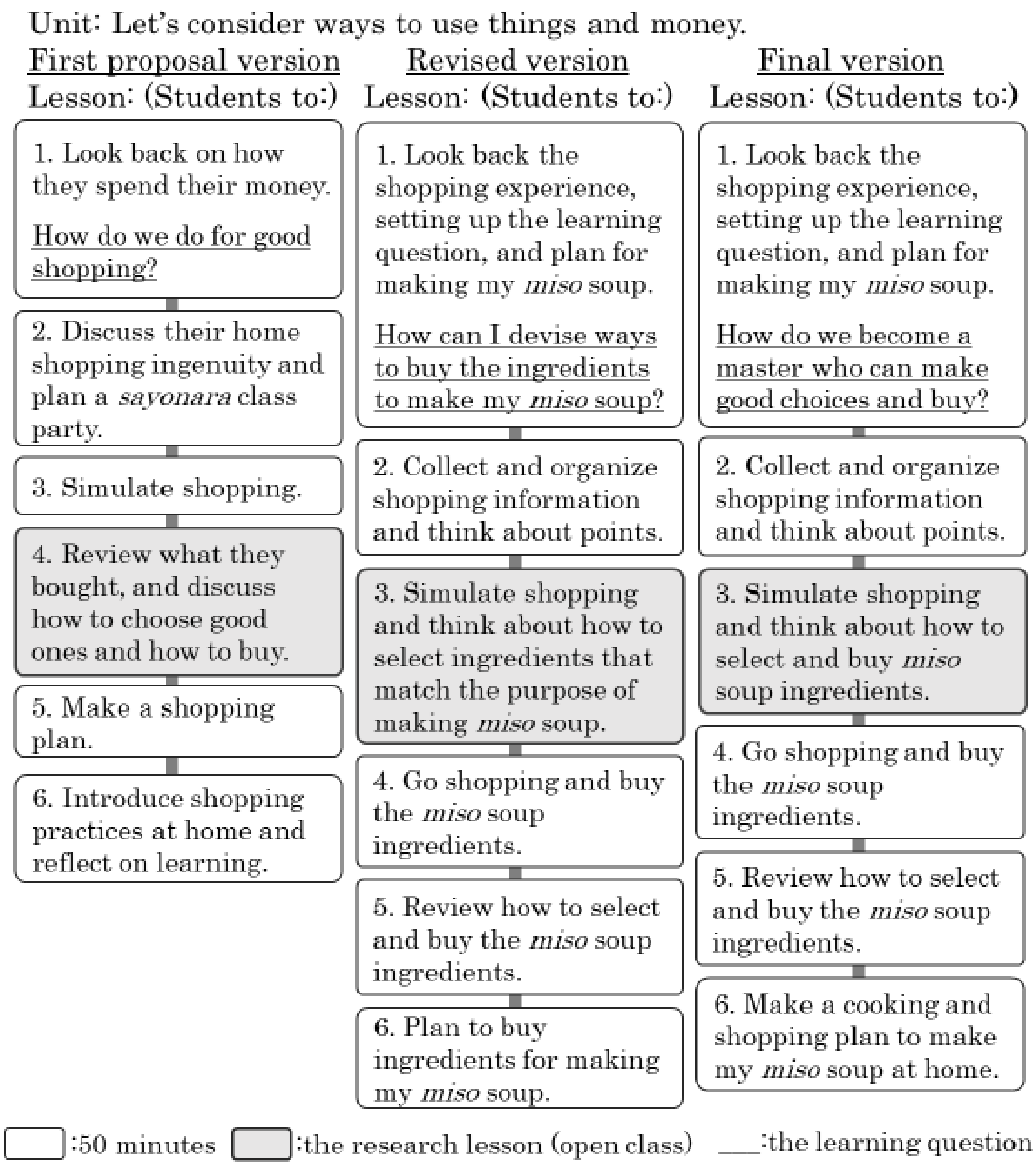


Figure 1 Changes the unit plan through consultations in planning phase in FY2015

The research lesson "Let's consider ways to use things and money" in FY2015

In the 2015 research lesson, a simulation of grocery selection for *miso soup* was conducted. At the introduction of the class, the children were divided into eight groups of five pupils per group and given the task of choosing the groceries used by the family for one of two families, differing in the number of family members and the date of using the food (Appendix 1). The teacher briefly showed the lesson points for product selection established up to the previous lesson. Subsequently, the children began discussions about Japanese white radish and *Abura age* (fried soybean curd), which are used for *miso* soup, in each of the three types of products, considering the purpose and family's conditions. Figure 2 shows part of the pupils' discussions.

Group1: six family members, need ingredients four days later

SQ No.	T/S	Utterances
15-122	S-Nasu	No difference between A and B.
15-123	S-Izu	Two days later.
15-124	S-Nasu	What? Should I have domestic food?
15-125	S-Mita	(Fried-tofu) C is cheap, B is expensive, but the same price.
15-126	S-Nasu	The expensive one is better.
15-127	S-Sei	What? Why... the same?
15-128	S-Mita	Not the same! ...higher than this per gram.
15-129	S-Izu	Then, this one (C).
15-130	S-Yura	I think B, 'cause no need to calculate.
15-131	S-Nasu	Cheap one.
15-132	S-Izu	How about the radish?
15-133	S-Yura	B
15-134	S-Sei	A
15-135	S-Yura	What? B,B,B!
15-136	S-Nasu	Just smell it.
15-137	S-Mita	The leaves are wilting.
15-138	S-Yura	Because organic ones are like this. You don't usually eat leaves.
15-139	S-Mita	What? You can eat it.
15-140	S-Nasu	Expensive!
15-141	S-Izu	But the difference is only 20 yen.
15-142	S-Yura	Look, the budget is only 200 yen.
15-143	S-Izu	No need for organic products, this is better.
15-144	S-Yura	No way. I feel like it's not safe.
15-145	S-Sei	Umm, but...
15-146	S-Nasu	How about the taste? Taste!
15-147	S-Mita	(Farmer) Kibe san' is best!
15-148	S-Sei	If it's not Kibe's product, it may be this one.
15-149	S-Yura	No, no…let me see.
15-150	S-Nasu	Expensive one is better.
15-151	S-Izu	Which one? B or Kibe's?
15-152	S-Nasu	Kibe's!
15-153	S-Izu	This part looks something spoiled.
15-154	S-Yura	That's okay. because it's organic vegetable.
15-155	S-Mita	This one is...
15-156	S-Yura	The only problem is bad looks.
15-157	S-Sei	If the problem is just a matter of appearance,…if the condition is bad…
15-158	S-Yura	Firstly, C is not good.
15-159	S-Mita	But people don't eat anything that looks bad.
15-160	S-Nasu	Some people may buy without looking.
15-161	S-Izu	There is no such person.
15-162	S-Mita	You should look and buy the vegetables.
15-163	S-Nasu	Umm, but...

Group2: three family members, need ingredients tomorrow

SQ No.	T/S	Utterances
15-38	S-Fujii	Look, Kume san's (The producer name in radish label)..., it's better not to choose.
15-39	S-Tani	These leaves.
15-40	S-Sato	Why? The radish leaves are irrelevant.
15-41	S-Fujii	Some people use the leaves, but others don't.
15-42	S-Tani	I don't expect people who don't use them.
15-43	S-Oota	I don't.
15-44	S-Fujii	Well, it can be used for something.
15-45	S-Sato	This one, C...Really? It's limp!
15-46	S-Fujii	But, it looks better…
15-47	S-Tani	We'll eat it tomorrow, this is fine.
15-48	S-Sato	Well…even if you eat tomorrow.
15-49	S-Oota	This family.
15-50	S-Sato	The family has three members.
15-51	S-Tani	We are three members.
15-52	S-Sato	But, it 's expensive.
15-53	S-Fujii	It's domestic, domestic products are good…
15-54	S-Tani	Full of food additives.
15-55	S-Sato	But it's cheap!
15-56	S-Fujii	Yes, this one shows clearly domestic...
15-57	S-Sato	Well, then...which radish should we choose?
15-58	S-Fujii	this (A) or this (B).
15-59	S-Sato	This one (C)….No? These are…
15-60	S-Oota	Both are 250g.
15-61	S-Sato	Both are 250, then the size is the same, but this one goes bad.
15-62	S-Fujii	But, C is impossible, isn't it? You'll throw away all the leaves later, won't you?
15-63	S-Sato	In that case, you can choose C, if you don't use the leaves anyway.
15-64	S-Kato	50 yen.
15-65	S-Sato	This (C)… inside… it doesn't go bad. Inside is the same.
15-66	S-Oota	This one is okay.
15-67	S-Kato	I feel reliable without additives.
15-68	S-Tani	Because there are few additives.
15-69	S-Oota	For three family members, four pieces are okay.
15-70	S-Sato	What? We don't need four pieces, Two pieces are enough.
15-71	S-Fujii	It says that it is domestic.
15-72	S-Tani	Well, fried tofu is needed for one third per person. So we need one piece.
15-73	S-Fujii	Moreover, it says that it's domestically produces, and the others are probably from foreign countries. This is the best.
15-74	S-Tani	The one which food additives are few.
15-75	S-Oota	Yes, this one. I think this is the one.
15-76	S-Tani	I agree with you.

N.B.: All names in the text are pseudonyms.

Figure 2 Utterances of the children's group discussions of the research lesson in FY2015

In both cases, firstly the children thought they would meet the conditions given to them, such as the statements “because they are a family of three” and “because they have two days.” Many children commented on the lesson points of food selection. On the other hand, the simulation was a little complicated and had many factors to consider. In the discussions, it was observed that each pupil was arguing their own factors of caution, such as safety and security, rather than justifying the choices based on the purpose and condition of the foods.

At the sharing opinions stage, the children came up with points to note, such as freshness, safety, price and quantity, and proximity to production areas. However, debates continued outside the context of the substance, and opinions of unclear scientific evidence were not confirmed. For example, it was debated whether or not a single fried *tofu* fills the stomach, organic vegetables are better because they are expensive, and additives are harmful to the body.

In the summary, a child said, “I should do shopping according to the conditions.” However, the teacher vaguely rephrased, “It will change depending on the purchase.” The rephrasing was a bit confusing for the children and was not shared as a summary. Finally, the children were given time to fill out the shopping plans for the various ingredients they would go to buy next week, but the pupils’ understanding was fragmented and did not lead them to develop an actual shopping plan.

Through the unit, many children were able to understand the individual factors to consider in purchasing food. However, there was no opportunity to think about the various products, nor was the generalized concept of shopping conveyed. Therefore, the whole lessons would not promote enduring understanding (Appendix 2).

The ambiguity of the teacher’s understanding of the aims at the time of planning was revealed when the lessons were summarized. There were two issues left: a lesson plan that would give enduring understanding and a selection of teaching materials that would lead to authentic learning.

Transition of lesson plan for three years

In the fall of 2016 and 2017, lesson studies on how to choose and buy things were conducted. Unlike in 2015, only the former home economics teachers at the affiliated school and the university researcher participated as advisors in these lesson studies. Lesson study members tried to share the advice of senior schoolteachers and the university researcher as much as possible. Figure 3 shows the outline of the final lesson plans actually implemented over three years.

The initial lesson plan proposed in 2016, which was an attempt to improve two of the tasks in the 2015 plan, consisted of seven hours. First, sweets and stationery were compared to illustrate that the information used for selection differs depending on the product. Later, the simulation of an activity relating to stationery, sweets, and food was proposed. The necessity of spending seven hours was discussed in this context, as the average number of hours using authorized textbooks is about four hours. The amendment proposed using five hours, adding extracurricular activities, with the spillover to public schools in mind. With an awareness of the various products, the plan included a proposal to simulate activities concerning food and textiles at the same time, simulating cooking or producing textile articles for the family. Afterward, through two rounds of consultation, the teaching materials were carefully selected with consideration for circumstances of purchase and for what kinds of products are relevant to children’s daily lives.

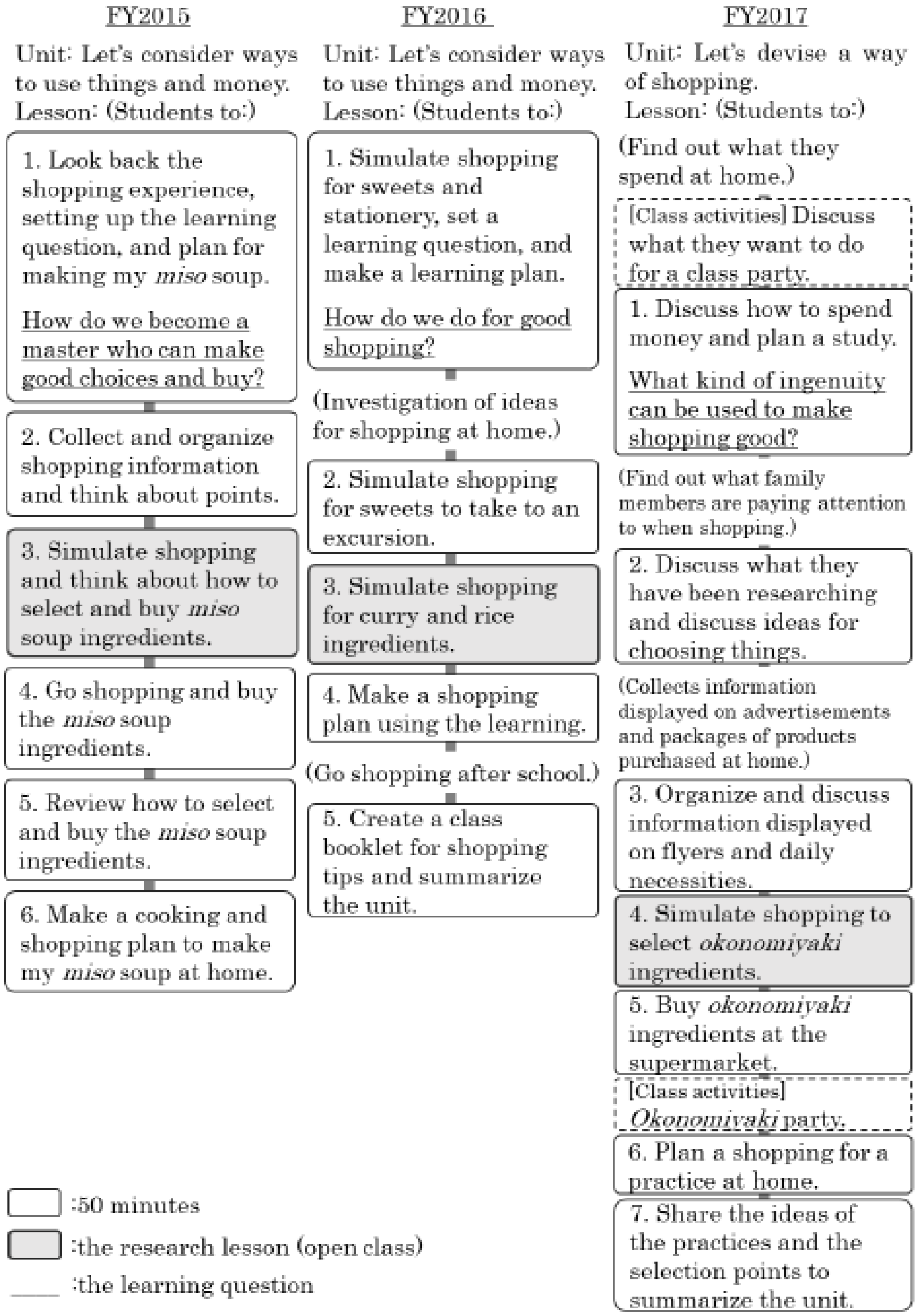


Figure 3 Changes the unit plans through consultations in planning phase from FY2015 to FY2017

Eventually, research lessons in 2016 were held for the following tasks: introducing learning tasks through simple selections of stationery and sweets. After the extracurricular activities of the home shopping survey, select a sweet for an excursion and simulate the purchase of curry and rice ingredients made at home. Make a shopping plan for family practice.

In FY2017, the plan was proposed and teaching materials were selected with the aim of deepening the link between children's learning and their home and school life experiences. In addition to extracurricular activities, a cross-curriculum with classroom activities was organized. There was only one consultation before conducting the research lesson in 2017.

During the consultation, it was mentioned that it was necessary to spend more time on understanding the tasks in order for the pupils to learn problem-solving. As a result, and according to children's actual situation, the final proposal allocated seven hours to the research lesson, in addition to the extra activities. The main contents of learning are as follows. First, as an extracurricular activity, children surveyed shopping at home and gathered information such as product containers and labels. At the same time, the students talked about cooking at a party during class activities. After that, in home economics, children set up learning tasks from simulations that chose familiar items such as stationery. Then, the children simulated shopping for the ingredients used at the party and made plans to use them for shopping at home.

Over the three years of continuous lesson studies, the teacher developed a clear idea of what they wanted the pupils to achieve.

Teaching and learning in the research lesson "Let's devise a way of shopping" in FY2017

In the 2017 research lesson, it was time to choose the ingredients to make *okonomiyaki* (Japanese pancake) at the classroom party. First, during the introduction, the teacher looked back on the previous lessons. That is, daily necessities and foods had information useful for purchasing. The pupils were then able to set up their own learning task. The teacher presented two types of cabbage, eggs, and flour. The teacher picked up remarks by the children, confirming some words and their meanings as keywords when making food choices, such as clearance sale and organic farming. Next, the teacher had the children think about which item to buy so that they could conform to a budget while looking at the real products (Appendix 3). They also exchanged opinions in each group and discussed which item to buy. Figure 4 shows part of the overall sharing situation. The teachers checked the children's remarks and compiled "good-choice" keywords such as price, quantity, freshness, allergy response, expiration date, and so forth. The teacher asked, "Quality first or quantity first?" and deepened the child's thinking while noting that each point had a priority. In addition, the teacher asked, "What is it all about?" A child said, "skillful choice is different for each person within the budget, (priority points) are different. Therefore, it is only necessary to make choices and purchases that suit you." In response to repeated statements from the children saying "*Mottainai* (wasteful)," the teacher asked, "Is it important to have no waste?"; subsequently, the teacher presented the current state of food loss and waste with data and proposed that environmentally friendly shopping with individual actions could solve social issues. In retrospect, a child said, "I was happy to find out why my mother was spending (shopping) time every day after doing today's simulation." It can be said that this is a statement that recognizes the meaning of family behavior and links the lesson to experiences in daily life. "It's different to choose daily necessities and food, … so I'd like to make choices when I think about expiration dates and budgets." It is a remark to summarize learning and make use of it in daily life due to the difference in how to select daily necessities (Appendix 4).

SQ No.	T/S	Utterances
17-230	T	Then, if you can make these three points, you can choose well, ...fresh food. There was a lot of information here. This is important,.... yes, Sada-san, please.
17-231	S-Sada	I think the expiration date is necessary, for example, cabbage or sweets, ...for example, if you eat gummies that have expired, there is no way to eat it, and if the taste is grape, seems something cloudy. I think that the expiration date is.... so when you talk about cabbage, you can eat the crispy texture and characteristics as it is, so I think we should care about the expiration date.
17-232	S-Kita	Someone have allergies like Takata-kun, so it is better to consider allergic substances.
17-233	T	Okay. Let's think about it.
17-234	S-pupils	Allergies. Allergies!
17-235	T	In the case of Takata-kun, first allergy, second is the expiration date ...
17-236	S-pupils	Expiration date! It must be expiration date.
17-237	T	This is really important for people with allergies.
17-238	S-pupils	First priority.
17-239	T	That means, first, second and so on, this is the best, depending on the person.
17-240	S-pupils	Quality. Expiration date. Quantity.
17-241	T	Quality first? Quantity first? Which is the first?
17-242	S-pupils	Quantity! Quality!
17-243	T	Quantity first?
17-244	S-pupils	Yes! Yes!
17-245	T	Quality first?
17-246	S-pupils	Yes! Yes!
17-247	T	Why do you think, Yamada-kun?
17-248	S-Yamada	Even if the expiration date has expired, it is okay if the quality is good. Take-san.
17-249	S-Take	Well, because it's a best-before date, it can be eaten deliciously unlike the expiration date. And if the quality is good, the expiration date has expired and it is delicious, so I think quality is important. Mae-san.
17-250	S-Mae	Also, no matter how much the amount is, for example, if A is a large amount and the quality is bad, it will hurt your stomach when eating, so do not choose by the amount. If both quality are good, I think that you should buy the one with the larger amount.
17-251	T	Okay, let's put it all together. You guys said,... how about after that?
17-252	S-Satomi	Let me see.... Depends on you?
17-253	T	So what do you mean by buying your own way? Ah, Akita-kun.
17-254	S-Akita	The best way to choose is price and budget, and ... it's different for each person.
17-255	T	It's different for each person. Priorities vary by person. But the budget is the first.
17-256	S-pupils	Umm... Ah...
17-257	T	Okay. Earlier, you guys said that you want to avoid waste. Is it so important not to waste? Actually, have you ever heard the word "food loss"?
17-258	S-pupils	I know. Ah. Yes!
17-259	T	It means food that can still be eaten but discarded. When I'm too busy and haven't opened the refrigerator for a while, I sometimes find things expired, and think it's a waste. It is said that 6.3 million tons of food loss occurs annually in Japan alone.
17-260	S-pupils	Wow. No! I hate it!
17-261	T	That is about twice the amount of food aid worldwide. In addition, about half is discharged from households. Expiration date expires, even if you know it, throw it away without using it. It may be connected to what you guys has just said.
17-262	S-pupils	No! Umm. What should I do?
17-263	T	So where are we going next? Everyone goes shopping. Summarize the best ways to shop in each group based on your thoughts today. Finally, I'll ask two of you to present your looking back....... Makino-san.
17-264	S-Makino	In my house, my mom is shopping when she comes back from work. I don't usually care much. When I did a shopping simulation, it was good to understand why she took a long time to shop, because she was collecting a lot of information and trying to buy the best one. Noda-san.
17-265	S-pupils	(Applause) Surely.
17-266	S-Noda	In the previous lesson, we compared the two daily necessities with the group members and were concerned about the quality and which one was better. When it comes to food, I chose it after considering the taste and what to do when I eat it. Choosing foods and daily necessities is different. So,.. the next time I'll make *okonomiyaki*, I would like to carefully consider what happens when I eat, the expiration date, and the budget.
17-267	S-pupils	(Applause)
17-268	T	That's all for today's class.

N.B. All names in the text are pseudonyms. The words "-san" and "-kun" are suffixes which are added to a person's name.

Figure 4 Utterances of the closing parts of the research lesson in FY2017

Discussion and summary

During the three years of continuous lesson studies, the teachers and the advisors met face-to-face and through email exchanges. In the consultations, the advisors with considerable lesson study experience asked the teacher, who had no previous experience in home economics research, to reconsider the appropriateness of the goal setting and evaluation criteria of the lessons, repeatedly questioning the meaning of the teaching materials. Then, the lesson study group members shared and considered the idea of the research lessons.

As a result, from the second year onward, the teacher had a clear idea of what they wanted home economics pupils to achieve. The teaching plan had become more than just a simulation of an individual shopping experience but offers a more comprehensive understanding of the shopping elements from the experience. Furthermore, the teacher was able to introduce cross-curriculum and extracurricular activities to envision the flow of learning with teaching materials along with the real world in accordance with the motivations and interests of the children.

In actual classes, in 2015 and 2017, simulations enabled children to think and compare the information they needed when choosing food based on the real products. In both classes, the pupils sometimes misunderstood the conditions or had discussions about things that were not essential when choosing products due to their lack of experience.

In 2015, the setting conditions of the activity were complicated, and the teacher could not clearly grasp the goal of the lesson. Students' lack of understanding of the role of food additives and the amount required for cooking was therefore not corrected until the end, and the teacher only emphasized the importance of individual components of food purchases. In 2017, many improvements were made. Specifically, the teacher carefully selected simulation conditions, looked back on the previous lessons, confirmed the meaning of keywords, and secured time for the children to conceive their own thoughts before starting the simulation. It was possible to observe improvements in the teacher's teaching skills, such as refraining from explanations and drawing connections among children's remarks. The teacher had a clear idea of the goals of the lesson, was able to identify the children's remarks leading to the goal, and worked to share them with other children. Therefore, it is presumed that there were statements that achieved the goal, such as differences in points of buying depending on the goods and the meaning of family shopping behavior. It was considered that the third-year class promoted an enduring understanding of shopping.

Conclusions

This research outlines a case study of lesson plans by one teacher. The lesson practice recorded in the third year was a class where the teacher was in charge of the homeroom. Although in the same year the response of students in another class was equally positive, the daily involvement with the children may be one of the factors that led to the particularly active classes. No consideration has been given to this aspect in this study. In addition, we did not conduct any direct interviews with colleagues in the affiliated school or with senior teachers. For these reasons, there is a limit to the generalizability of these research results. However, from the data obtained, lesson studies that enhance collaboration among teams and improve classes through discussions of goals and evaluation settings for specific home economics lessons have been observed to be useful for teacher training. The future task is to accumulate case studies and examine more diverse factors.

References

Dudley, P. (2014, May 14). Lesson study: A handbook. Retrieved from www.lessonstudy.co.uk

Ishikawa, Y. (2014) A Proposal for Consumer Education in Elementary Schools: Survey Results from Elementary School Teachers Journal of Japan Academy of consumer education, Journal of Japan Academy of consumer education, 34, 195-204.

Kishi, N., (2019). Issues and solutions of developing practical teaching skills in Home Economics in elementary school through perspectives on teacher leaders, Bulletin of University of Teacher Education Fukuoka, 68, 67-77.

Lewis, C., Perry, R., & Murata, A. (2006). How should research contribute to instructional improvement? Educational Researcher, 35(3), 3–14.

Lewis, C., & Hurd, J. (2011). Lesson study: A handbook of teacher-led instructional change. Portsmouth, NH: Heinemann.

Lim, C., Lee, C., Saito, E., & Haron, S. (2011). Taking stock of lesson study as a platform for teacher development in Singapore. Asia-Pacific Journal of

Teacher Education, 39(4), 353-365.

Ministry of Education, Culture, Sports, Science and Technology. (2015). (2019, July 28). Improving the Quality and Ability of Teachers, Retrieved from https://www.mext.go.jp/en/policy/education/elsec/title02/detail02/ icsFi les/afieldfile/2015/08/11/1303528_01_1.pdf

Ministry of Education, Culture, Sports, Science and Technology. (2017). *Shogakko gakushu shidou youryou kaisetu kateihen* [Instruction Manual for the course of study in elementary school: Home Economics], Tokyo: Toyokan.

Ministry of Education, Culture, Sports, Science and Technology. (2019). (2019, Aug 2). *Shogakko niokeru kyokatou no tanninsei no jisshi joukyo* [Survey on implementation of homeroom and subject-based teachers at elementary schools], Retrieved from https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo3/083/siryo/ icsF iles/afieldfile/2019/07/26/148593-1.pdf

National Institute on Consumer Education. (2011). *Kaigai no Shouhisha kyoiku* [Consumer Education] 2011: Korea, Spain and PERL conference. Tokyo: National Institute on Consumer Education.

National Institute on Consumer Education. (2014). *Kaigai no Shouhisha kyoiku* [Consumer Education]: United Kingdom, France, and International Organization. Tokyo: National Institute on Consumer Education.

National Institute on Consumer Education. (2017). *Kaigai no Shouhisha kyoiku* [Consumer Education]: Norway and Sweden. Tokyo: National Institute on Consumer Education.

Okutani, M., & Nishimura, T. (2011). Actual situations and teacher's needs for teacher training about consumer education, Journal of Japan Academy of consumer education, 31, 33-43.

Onoda, R., Amano, H., & Kakino, N. (2015). Consumer Education for Elementary School: An Analysis of the Survey of School in "A" City, Journal of Japan Academy of consumer education, 35, 97-106.

PERL (Partnership for Education and Research about Responsible Living.) (n.d.). Retrieved from http://www.perlprojects.org/

ProfESus (n.d.). Retrieved from https://profesus.eu/

Stepanek, J., Appel, G., Leong, M., Mangan, M. T., & Mitchell, M. (2007). Leading lesson study: A practical guide for teachers and facilitators. Thousand Oaks, CA: Corwin Press.

The research group of lesson study in Home Economics. (2018). (2019, May 28). Toward Quality Improvement in Home Economics Education: Bridging Japan and the world through perspectives on lesson study, International conference report. Retrieved from http://ww1.fukuoka-edu.ac.jp/~kaseika/kishin/kaken_en_contents.html

Appendix 1 The simulation settings "Let's choose ingredients for miso soup" in FY2015 Food items for miso soup (per person)

The simulation settings "Let's choose ingredients for *miso* soup" in FY2015 Food items for *miso* soup (per person)

Abura age (fried soybean curd) 7g (A one third per one piece), Japanese white radish 40g Budget 200 yen

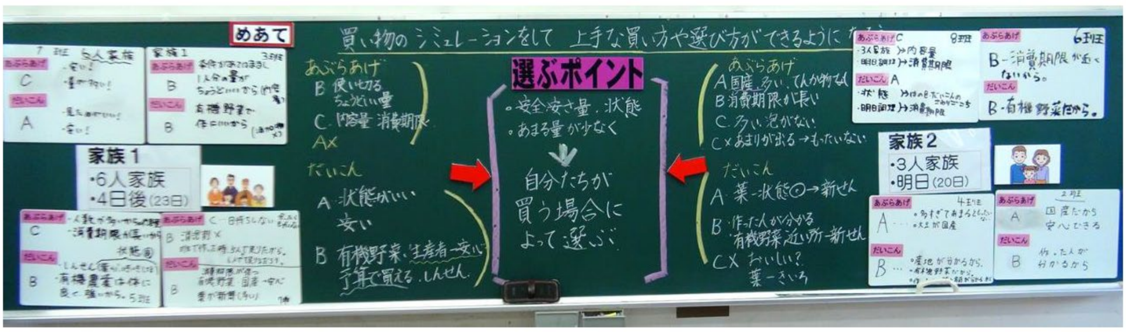
Case of the family 1: six members, need the ingredients four days later

Case of the family 2: three members, need the ingredients tomorrow

Items:

	A	B	C
Fried tofu	Ingredients: Soybeans (Domestic), edible vegetable oil,Coagulant NET weight: 2 Pieces Expiration date: 21st Feb. 2016 Storage method: keep refrigerated (10 degrees or less) Manufactured by A Ltd., Ogori city Fukuoka Pref. (*Local) Price: 54 yen	Ingredients: Soybeans, vegetable oil, Coagulant for tofu NET weight: 2 pieces Expiration date: 24th Feb. 2016 Storage method: keep refrigerated (10 degrees or less) Manufactured by B Ltd., Aso county Kumamoto Pref. Price: 47 yen	Ingredients: Soybeans , vegetable oil, Coagulant , Defoamer NET weight: 4 pieces Expiration date: 24th Feb. 2016 Storage method: keep refrigerated (10 degrees or less) Manufactured by C Ltd., Gyoda city Saitama Pref. Price: 47 yen
White radish	1/4 (250g) 80 yen	1/4 (250g) 100 yen Organic cultivation Local products Kibe's Farm	1/4 (250g) 50 yen (clearance sale)

Appendix 2 Photos of the blackboard after class in FY2015



Appendix 3 The simulation settings "Let's choose ingredients for okonomiyaki" in FY2017

Food items for Okonomiyaki (per 4 persons)

-Cabbage a half ball, 4 eggs, Flour 400g

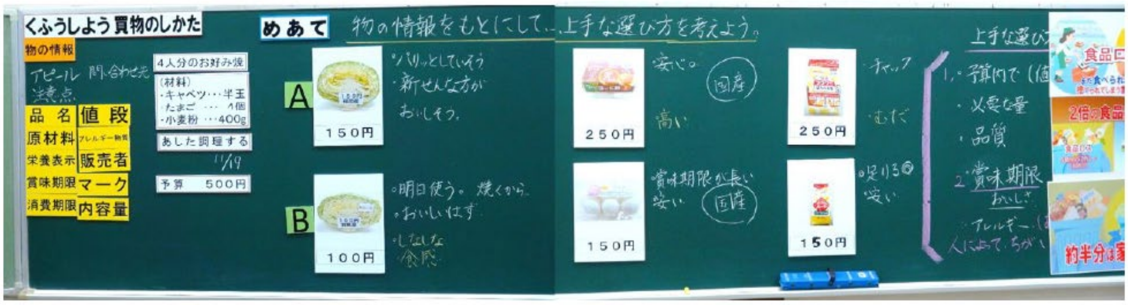
Budget 500 yen

Case: need the ingredients tomorrow

Items:

	A	B
Cabbage	Fukuoka Pref.(*Local) Price: 150 yen	Gunma Pref. Price: 100 yen
Egg	Expiration date: 19th Nov. 2017 NET weight: 6 Price: 250 yen	Expiration date: 23rd Nov. 2017 NET weight: 6 Price: 150 yen
Flour	NET weight: 1 kg Price: 250 yen	NET weight: 500 g Price: 150 yen (clearance sale)

Appendix 4 Photos of the blackboard after class in FY2017



PEER-REVIEWED CONGRESS PAPER

Mass production of functional maternity skirt pattern for sustainable economy

Funke Oluwaleyimu, Chinyere Igbo, Nkiruka Nwabah & Regina OhakaChinyere Igbo
University of Lagos, Nigeria

Abstract

The purpose of the study was to develop functional straight maternity skirt patters in small, medium and large sizes with different variations on drop waist lower torso using established block patterns obtained from established mean body measurements by Oluwaleyimu and Igbo (2019) The area for the study was Lagos metropolis, Nigeria. Three hypotheses were formulated to guide the study. Exploratory and descriptive designs were employed in carrying out the study. The two sets of population comprised of the users (registered pregnant women) and judges (Nurses, registered garment makers and Clothing and textile lecturers) with the total of 996 were involved in the study. Purposive, Convenience and Accidental sampling techniques were used to select 31 respondents that participated in the final evaluation of the prototype skirts. The instruments for data collection were the established mean body measurements and Maternity Skirt Assessment Questionnaire (MSAQ). Analysis of Variance (ANOVA) was employed to test the hypotheses at 0.05 level of significance. The following variations of maternity skirts were produced in small, medium and large sizes (Straight functional maternity skirt with yoke on drop waist lower torso; skirt with an inverted draw string for roominess and skirt with detachable godet on the waist region. Findings also revealed that there was no significance difference (P>0.05) among the mean response of the judges on the fit, comfort and aesthetic attributes of the maternity skirts constructed from the patterns, they were rated very satisfactory by the users and judges. Among others, it is recommended that; the patterns constructed in this study should be published for teaching and learning for students and teachers of Home Economics; it should also be used for tailors, fashion designers and the apparel industries for mass production of functional maternity skirts for local use and exportation since the mean body measurements used did not significantly differ from the standardized body measurement

KEYWORDS: MASS PRODUCTION, FUNCTIONAL MATERNITY SKIRT, PATTERN PRODUCTION, SUSTAINABLE ECONOMY

Introduction

Maternity skirt is specifically designed to be worn by pregnant women. It is designed with a loose, comfortable cut which expands as the expectant mother's belly grows. Pregnant women need comfortable maternity skirt which are necessary and not a luxury (Marshall and Raynor, 2014). According to Noopur, (2012) maternity skirt is functional apparel specially designed to address the anthropometric growth in the human body during pregnancy. Maternity skirt should make the pregnant woman feel comfortable. This is a stage where the anthropometric requirements of the human form are very different, reason being that there is substantive

Oluwaleyimu, F., Igbo, C., Nwabah, N., & Ohaka, R. (2022). Mass production of functional maternity skirt pattern for sustainable economy. *International Journal of Home Economics, 15*(2), 200-212.

Funke Oluwaleyimu ✉ opeyemileyimu@yahoo.com

weight gain, but the distribution of this weight is not uniform around the body. That is certain body parts grow much more in proportion than other parts. The prominent growth is usually on the waist. Therefore, maternity skirt should be designed in such a way that there is enough space on the waist to accommodate maximum growth on the waist. During this period, good fit functional skirt should be available. Good fit functional skirt for pregnant women can only be achieved by considering the shape, size and measurement of the direct wearer (Noopur, 2012). Maternity skirts which are perfectly comfortable and functional may be completely rejected by pregnant women if they do not look smart, stylish or not perceived to be conveying the proper image (Noopur, 2012). Psychological expectations and preferences of pregnant women must therefore be given due consideration so as to create functional apparels which are in tune with their social and cultural background, geographical location, age, activity and work profile. There is therefore need for functional skirt that will accommodate the increase in body size occasioned by pregnancy, and will also meet the social and psychological needs of the users.

Designing involves a set of skills that range from market research and creativity to sketching and fabric selection. Designing is more than creativity, it entails conceptualization of the needs of the wearer and the accommodation of the solution to the needs in the design (Gupta, 2011). For instance, the process of designing functional apparel for pregnant women begins and ends with meeting the specific requirements of the pregnant women. Most designs also include elastic, tabs, and other methods of expansion allowing skirts to be let out. According to Musial (2014), often, maternity skirts have childish patterns on them such as bows, polka dots or flowers, also, an A-line. This design de-emphasizes protruding belly while re-emphasizing childishness. Good fitting skirt designs are achieved through the inclusion of pattern styling features like godet, gores, and the incorporation of appropriate trims, plackets, and fit elements, like pleats darts, gathers, and smocking (Noopur 2012). The aesthetic aspect of the design; termed the elements of design, is viewed as the interplay of lines, form (shape and space), texture and colour of the garment and other materials used on the garment. These elements of design must be applied artistically. The artistic guidelines that dictate the use of the elements of design are: balance, proportion, emphasis, rhythm and harmony. The elements and principles of design when properly applied, work together to bring about the functionality required on skirt to be developed for pregnant women.

Prototype apparels should be produced, tested and corrected to meet the desired specifications of a design. Prototype apparel is apparel made to the specification of a design for the purpose of fitting, using a cheaper fabric. Development of the patterns termed block patterns prior to apparel construction precedes designing. It is very crucial to a dressmaker, since it provides opportunity for corrections to be affected after series of fitting prototype apparels on the figure before the final apparel construction. Pattern development and drafting requires reasoning, creativity and manipulative skill for constructing apparels. A pattern is the map of the apparel. There are two main types of patterns: the block pattern and the trade pattern (Anikweze, 2013). The block pattern is to the dress designer what the blue print is to the architect (Igbo and Iloeje 2012). Block patterns can be drafted or commercially obtained through modelling or draping method, knock-off design method, grading method, computer aided design method (CAD), and flat pattern method. According to Igbo and Iloeje (2012), drafting is a term used to describe an engineering approach for producing patterns, using a set of measurements obtained from a figure while following a set of guiding instructions. The instructions are interpreted into drawings or shapes on paper or fabrics. Pattern on the other hand, is a piece of paper drafted and cut to size and shape, used for cutting out pieces of fabrics method, grading method, computer-aided design method (CAD), and flat pattern method.

The trade patterns are already standardized patterns used in mass production of garments (Bray, 2003). Aldrich, (2006) justifies the use of block patterns in the clothing industry because the blocks are constructed to standard (average) measurements for specific groups of people but could also be drafted to fit an individual figure using personal measurements. Unfortunately, commercial patterns for functional skirt for pregnant women which could facilitate mass production of maternity skirt are not readily available. The use of any type of pattern has advantages such as saving energy, time, money and anxiety. Good fitting is likely to be achieved because of the accuracy of patterns. If patterns are well constructed, they can be easily used by inexperienced dressmakers. The production of patterns can also serve as a source of job to teeming unemployed youths in Nigeria. All humans have peculiar shapes and sizes. Sizing and shaping are crucial factors in pattern development (Brown and Rice, 2001; Kinley, 2013). Apparels that are sized properly and according to fashion, style and fabric used, and which conform to body measurements, will fit the wearer well. A garment that is well-sized will fit and align with body contours without any strain. No matter the function of any apparel to the user, the size must be proportionate to the wearer to achieve the purpose for which it is constructed. In an attempt to accomplish the social desires, pregnant women move with fashion trends. This is making them to always wear tight apparels that obstruct their body movement or confine the blood flow to the stomach which exposes them and the babies in their wombs to health challenges. Mass production is the manufacture of goods in large commercial quantities. Apparel production has been known to play a significant role in increasing personal income and enhancing the growth of gross domestic product (GDP) of most developing countries of the world. In less developed countries of the world, average wages in textile and apparel production are estimated at $401,000,000 U.S dollars (World Trade organization, (WTO, 2006). The apparel industry, therefore, plays an important role in job creation and this can drastically reduce the problem of poverty and unemployment which is a major economic problem of the nation today. Mass production paves way for ready to wear and mass-produced fashion, as well as creation of job and wealth for the growth and development of the economy (Iloeje and Anyakoha, 2012).

Statement of the Problem

Many pregnant women in Nigeria generally and in Lagos State in particular dress to achieve portability and fashion. This is making them to forget the need for comfort and protection in their dressing patterns, this has implications on their health. The fashion trend is now making many pregnant women in Lagos state dress without consideration for their comfort and that of the unborn children. For example, by wearing tight fitting foundation apparels, tight fitting skirts to look smart and this has negative implications on their health. There is need to develop functional maternity skirt for pregnant women to specifically accommodate the growth on the abdomen and there is also a need to develop stylish and smart functional apparels to meet their yearning aesthetic needs. (See Appendix 1)

Purpose of the Study

The major purpose of the study was to produce functional maternity skirt patterns in small, medium and large sizes which can be used for mass production of maternity skirts for pregnant women for sustainable economy. Specifically, the study:

1. developed maternity skirt patterns for three sizes: small, medium and large using established block patterns from Oluwaleyimu and Igbo (2019).

2. constructed three variations of three sets of prototype maternity straight skirts each in small, medium and large sizes, based on the adaptations of the basic block pattern pieces developed.

3. determine the judges' ratings of the appropriateness of the maternity skirts in terms of fit comfort and aesthetics variables of the three sizes of the prototype maternity skirts.

Hypotheses

Three null hypotheses were tested in this study at 0.05 level of significance

$H0_1$: There is no significant difference among the mean ratings of users on the fit of prototype maternity skirts for small, medium and large users' sizes.

$H0_2$: There is no significant difference among the mean ratings of users on the comfort of women.

$H0_3$: There is no significant difference among the mean responses of judges (nurses, clothing and textiles lecturers and garment markers) on the aesthetic attribute of the prototype maternity skirt required by pregnant women.

Methodology

Design of the Study

The study was exploratory and descriptive. An exploratory research is an attempt to lay the groundwork that will lead to future studies. (Kowalczyk,2016). The patterns produced in this study can be adopted for further studies. The study was descriptive because it describes data and characteristics about the population. (Gall, Gall and Borg, 2007).

Area for the Study

The study was carried out in Lagos metropolis, Nigeria. Lagos state is bounded by Republic of Benin on the West and Ogun state both on the North and East respectively. On the South, the state stretches for 180 kilometers along the coast of the Atlantic Ocean and consists of Lagoon and Creeks.

The researcher chose this area of study basically for operational ease and enhanced access to research subjects from her work station. Furthermore, Lagos metropolises have a good mix of people from different parts of Nigeria. (Lagos Island Local Government Area), Lagos Mainland LGAs which is from the middle ring of the metropolis and Ikeja division LGAs were used for the study. There are tertiary health care delivery centres, government and private maternity centres and clinics in Lagos metropolis, Island Maternity is situated in Lagos Island LGA, Gbagada General Hospital is situated in Lagos mainland LGA while Ayinke House Maternity in Ikeja General Hospital is situated in Ikeja LGA. The Redeemed Christian Church of God (RCCG) and other private maternity home are also situated in every local government area of Lagos metropolis. All these were used to select samples among the pregnant women and nurses used as judges and respondents. There are clothing and textiles lecturers in some tertiary institutions and registered tailors and garment makers in Lagos metropolis. All these informed the choice of Lagos state for the study.

Population for the Study

Two sets of population comprised of the users (Registered pregnant women) and judges (Nurses, registered garment makers and clothing & textiles lecturers) with the total of 996 were involved in the study. Nurses, Clothing and Textile lecturers, tailors/seamstresses and fashion designers were included in the study because it is assumed that they are stakeholders in the welfare and clothing of pregnant women.

Sample and Sampling Technique

The sample size for this study was 31 respondents drawn from the two groups: Judges and users (pregnant women). Convenience or Accidental sampling technique was employed to select 19 judges from a population of 612. Convenience or Accidental sampling is a non-probability method of sampling where subjects are drawn because of accessibility and proximity to the researcher (Trochim, 2003). Accidental sampling involves subjects who are willing to participate in the research. Accidental sampling is simply by asking for volunteers, those who are available, (Adebanyo, 2015, and Explorable.com, 2009). Purposive sampling technique was used to select 12 registered pregnant women (users) from a population of 384. It was purposive because the 12 selected pregnant women belong to small, medium and large size categories. Those selected to fit test prototype skirts were those whose body sizes coincided with the mean body measurement charts computed from data obtained from the study. Other criteria for choosing fit-testing from among the pregnant women were ability to understand the requirements of the research and consent to participate in the exercise.

Instruments for Data Collection

A 5-point Likert scale maternity skirt Assessment Questionnaire (MSAQ) was developed and used for rating the fit, comfort and aesthetics of the prototype skirts constructed from the drafted patterns. The instrument was both users and judges. The (MSAQ) had three sections (1, 2, and 3). Section I had different variables on fit of the prototype functional skirt on the users while standing, sitting and walking (section 2) had variable on comfort and overall performance of the skirt on the users, (section 3) had variables aesthetics characteristics of the prototype skirts. Mean body measurement established by Oluwaleyimu and Igbo (2019) was employed in drafting the pattern. The established mean body measurement was in small, medium and large sizes.

Method of Data Collection

Research assistants were recruited by the researcher. The research assistants were briefed prior to data collection. Data for this study were collected in four phases (I, II, III and IV). This involved two sets of samples of respondents: users and judges (nurses, clothing and textile lecturers, and garment makers.

Phase I: Adaptation and development of straight maternity skirt patterns with Variations in small, medium and large sizes. (See Appendix 2).

Phase II: Construction of Functional Prototype maternity skirts in small, medium and large sizes with variations: (Short straight maternity skirt draw string for roominess;

straight maternity skirt with stretch fabric on drop waist, to accommodate the growth on the abdomen a detached godet) see Appendix 3.

Phase III: Modification and fit-testing of prototype maternity skirts: Fit-testing of prototype functional skirts on pregnant women was done and final modifications on the prototype functional skirts were affected. Alternatives on the prototype functional skirts were based on feedback from users. The major parts corrected were length of skirt, reinforcement of openings and closure. Phase III is summarized as follows:

- Training of users for correct assessment of fit of the prototype skirt.
- Training of the judges for correct assessment of aesthetics and variables of the prototype functional maternity skirts.
- Construction of new sets of functional skirts using the corrections from first fit.
- Fit-testing prototype functional skirts by users. This entailed one user in each size category of small, medium, large, fatting three different skirts. Photographs of fit testing exercise are included in Appendix 4

Phase IV: Final Evaluation of the Prototype Functional Maternity Skirts by Users and Judges. In phase IV, the feedback obtained from the users (pregnant women) was utilized to effect corrections on the prototype functional apparels, 12 pregnant women/user and 19 judges comprising five nurses, five garment makers and nine clothing and textile lecturers participated in assessing the aesthetic and expressive attributes of the prototype functional skirts. The 12 selected pregnant women belong to small, medium and large size categories. Those selected to fit test prototype skirts were those whose body sizes coincided with the mean body measurement charts computed from data obtained from the study. Other criteria for choosing fit-testing from among the pregnant women were ability to understand the requirements of the research and consent to participate in the exercise. Phase 1V: Final Evaluation of the Prototype functional maternity skirt. (See Appendix 4)

Method of Data Analysis

Mean and analysis of variance (ANOVA) was used to test the hypothesis at 0.05 level of significance. Any item with a probability value (Sig.) greater than or equal to the 0.05 level of significance indicates no significant difference ($P \geq 0.05$), and the hypothesis was not rejected otherwise there is a significant difference ($P < 0.05$) and the H0 was rejected. Data collected for the study was analyzed using Statistical Package for Social Sciences.

Results

The result in Table 1 shows the ANOVA analysis of users (pregnant women of medium, small and large sizes) on the fit of prototype functional maternity skirts. The result indicates that the 10-items indicate no significant difference in the mean ratings of the pregnant women of different sizes because the probability values (sig) of the items are greater than 0.05 level of significance (P>0.05). Hence, the null hypothesis which states that there is no significant difference in the mean ratings of users (pregnant women of small, medium and large sizes) on the fit of the prototype functional maternity skirts is therefore accepted in these items.

Test of null hypotheses

$H0_1$: There is no significant difference among the mean ratings of the users (pregnant women.) on the fit variables of the prototype functional maternity skirt.

Table 1: ANOVA analysis of mean ratings of pregnant women (users) on the fit of the prototype functional maternity skirts.

S/N	Variables: Skirt Fit of the skirt while:	Source of Variation	Df	SS	MS	F-cal	Sig	Rmk
1	Sitting	BG	2	1.500	0.750	0.273	0.767	NS
		WG	9	24.750	2.750			
		T	11	26.250				
2	Bending	BG	2	7.167	3.583	1.743	0.229	NS
		WG	9	18.500	2.056			
		T	11	25.667				
3	Walking	BG	2	2.167	1.083	0.929	0.430	NS
		WG	9	10.500	1.167			
		T	11	12.667				
4	Variables Ease on waist line	BG	2	0.667	0.333	0.136	0.874	NS
		WG	9	22.000	2.444			
		T	11	22.667				
5	Hip level	BG	2	5.167	2.583	2.735	0.118	NS
		WG	9	8.500	0.944			
		T	11	13.667				
6	Ease at thigh	BG	2	17.167	8.583	9.968	0.058	NS
		WG	9	7.751	0.861			
		T	11	24.917				
7	Side seam curve	BG	2	0.667	0.333	0.188	0.835	NS
		WG	9	16.000	1.778			
		T	11	16.667				
8	Hemline ease	BG	2	3.167	1.583	0.656	0.542	NS
		WG	9	21.750	2.417			
		T	11	24.917				
9	Functionality safety	BG	2	6.167	3.083	3.265	0.086	NS
		WG	9	8.500	0.944			
		T	11	14.667				
10	Overall fit	BG	2	1.500	0.750	0.529	0.606	NS
		WG	9	12.750	1.417			
		T	11	14.250				

Note: BG = Between group, WG = Within group, T = Total. df = Degree of freedom, SS = sum of Squares, MS = Mean of Squares, Sig = Probability value

$H0_2$: There is no significant difference among the mean ratings of the users on the comfort variables of the prototype functional maternity skirt.

Table 2: ANOVA analysis of mean ratings of users (pregnant women) on the comfort variables of the prototype functional maternity skirt.

S/N	Variables	Source of Variation	df	SS	MS	F-cal	Sig	Rmk
1	Overall fit	BG	2	4.667	2.333	1.714	0.234	NS
		WG	9	12.250	1.361			
		T	11	16.917				
2	No restricting	BG	2	5.167	2.583	1.043	0.056	NS
		WG	9	5.750	0.639			
		T	11	10.917				
3	Feel on the body	BG	2	0.167	0.083	0.070	0.933	NS
		WG	9	10.750	1.194			
		T	11	10.917				
4	Non-irritability of body	BG	2	0.167	1.083	0.115	0.892	NS
		WG	9	6.500	0.722			
		T	11	6.667				
5	Air permeability	BG	2	8.667	4.333	2.400	0.146	NS
		WG	9	16.250	1.806			
		T	11	24.917				
6	Adjustable waist line	BG	2	2.167	1.083	0.582	0.578	NS
		WG	9	16.750	1.861			
		T	11	18.917				
7	Safety	BG	2	2.167	0.083	0.557	0.591	NS
		WG	9	17.500	1.944			
		T	11	19.667				
8	Functionality	BG	2	2.167	1.083	1.500	0.274	NS
		WG	9	6.500	0.722			
		T	11	8.667				
9	Ease of wearing and taking off (donning and doffing).	BG	2	0.167	0.083	0.043	0.958	NS
		WG	9	17.500	1.944			
		T	11	17.667				

Note: BG = Between group, WG = Within group, T = Total. df = Degree of freedom, SS = sum of Squares, MS = Mean of Squares, Sig = Probability value

The results in Table 3 show the ANOVA analysis of mean ratings of users (pregnant women of medium, small and large sizes) on the comfort and overall performance variables of the prototype functional maternity apparel (skirt, trouser, dungaree, blouse and gown). for pregnant women. The result indicates that the 9-items show no significant difference among the mean ratings of the pregnant women of different sizes on the comfort and overall performance variables of the prototype functional maternity apparel (skirt, trouser, dungaree, blouse and gown) for pregnant women because the probability values (sig) of the items are greater than 0.05 level of significance ($P>0.05$). Hence, the null hypothesis which states that there is no significant difference among the mean ratings of users (pregnant women of small, medium and large sizes) on the comfort and overall performance prototype functional maternity apparels is therefore accepted in all the items.

$H0_3$: There is no significant difference among the mean ratings of judges (nurses, garment makers and clothing and textiles lecturers.) on the aesthetic variables of the prototype functional maternity skirt.

Table 3: ANOVA analysis of mean ratings of judges on the Aesthetic variables of the prototype functional maternity skirts.

S/N	Variables	Source of Variation	df	SS	MS	F-cal	Sig	Rmk
1	Beauty	BG	2	10.667	5.333	2.954	0.103	NS
		WG	9	16.250	1.806			
		T	11	26.917				
2	Colour	BG	2	4.167	2.083	1.974	0.195	NS
		WG	9	9.500	1.056			
		T	11	13.667				
3	Texture of fabric	BG	2	17.167	8.583	30.900	0.060	NS
		WG	9	2.500	0.278			
		T	11	19.667				
4	Fashion ability style attribute	BG	2	0.667	0.333	0.158	0.856	NS
		WG	9	19.000	2.111			
		T	11	19.667				
5	Visual appendix X	BG	2	2.667	1.333	0.800	0.479	NS
		WG	9	15.000	1.667			
		T	11	17.667				
6	Shape/Silhouette	BG	2	1.167	0.583	0.296	0.751	NS
		WG	9	17.750	1.972			
		T	11	18.917				
7	Style attributes	BG	2	1.500	0.750	1.421	0.291	NS
		WG	9	4.750	0.528			
		T	11	6.250				
8	Construction	BG	2	6.500	3.250	1.773	0.224	NS
		WG	9	16.500	1.833			
		T	11	23.000				
9	Fastenings	BG	2	4.667	2.333	0.875	0.450	NS
		WG	9	24.000	2.667			
		T	11	28.667				
10	Acceptability	BG	2	4.500	2.250	1.025	0.397	NS
		WG	9	19.750	2.194			
		T	11	24.250				

Note: BG = Between group, WG = Within group, T = Total. df = Degree of freedom, SS = sum of Squares, MS = Mean of Squares, Sig = Probability value

The results in Table 3 shows the ANOVA analysis of mean ratings of judges on the aesthetic variables of the prototype functional maternity skirts for pregnant women. The result indicates that the 10-items show no significant difference among the mean ratings of the judges on the fit of aesthetic variables of the prototype functional maternity skirts for pregnant women because the probability values (sig) of the items are greater than 0.05 level of significance ($P>0.05$). Hence, the null hypothesis which states that there is no significant difference among the mean ratings of judges on the aesthetic of prototype functional maternity skirts is therefore accepted in all the items.

Findings of the Study

The following were the findings of the study.

The following functional prototype straight maternity skirts were produced:

1. Maternity skirt with yoke on drop waist lower torso made with stretch fabrics or the same fabric tucked or gathered,
2. Straight maternity skirt with an inserted draw string for roominess and
3. Maternity skirt with a detachable godet on the waist region.
4. There was no significant different ($P > 0.05$) among the mean rating of user (small, medium and large) on the fit, comfort, overall performance and aesthetic attributes of the prototype functional apparels.
5. There was no significant difference among the mean responses of judges (nurses, clothing and textiles lecturers and garment makers) on the aesthetic attributes of the prototype functional apparels required by pregnant women.

Discussion of the Findings

The block patterns were adapted into the functional maternity straight skirts with variations. This agrees with Igbo and Iloeje (2012) who stated that pattern can be developed in many ways to include: knock off, modifying and flat pattern drafting (Igbo and Iloeje, 2012). Anyakoha (2012) also documented pattern adaptations which were used to include the desired features on various basic patterns drafted. The skirts produced in the present study was liked by the pregnant women because of the functionality and the skirts have the features on the women's conventional apparels. This supports Marshall and Raynor (2014), Ashileigh (2013) and Nima (2015) who stated that pregnant women need comfortable maternity apparels which is necessary to take care of their changing shape and not a luxury. And that the pregnant women need functional maternity apparel when they begin to feel uncomfortable in their old tighter fitting apparels. It is evident from table 1–3 that the fit of the prototype function maternity skirt as follows: sitting, bending, walking, ease on waist line, ease at hip level, ease at thigh, side seam curve, hemline ease, functionality safety and overall; the users and the judges rated the prototype functional skirts to be very good. The result is consistent with the assertions of Alexander et al. (2005) that the fit preferences are subjective and vary from person to person and that defining and interpreting good fit is difficult and can only be defined by each individual. The skirt fit preferences of consumers according to Alexander et al. (2005) are mostly influenced by attitudes, culture, perceptions, geographic location, social afflictions, and education level of the individual as well as globalization Rating (2001) had noted that the wearer of garment has the best judgement of the fit of any garment. Hence if the wearer is satisfied with the fit of the apparel, it is perceived to fit well. Comfort as: overall fit, non-restricting, feel on the body, non-irritability of body, air permeability, adjustable waist line, safety, functionality and ease of wearing and taking off (donning and doffing); which forms major requirements in design of functional maternity skirt. Alexander et al. (2005) and Marshal et al. (2004) were accomplished in this study. The users were subjected to slight movement tests such as walking, bending in relation to brown and Rice (2001) that supported comfort allows bending, stretching and easy movement of the body while improving the general appearance of the skirt. Comfort assessed by both users and judges were satisfactory or above, satisfactory. All the aesthetic variables assessed by the users and judges for the prototype functional skirts were acceptable. On aesthetic attribute of the prototype of the functional skirt, the study identified beauty, colour, texture of fabric, fashion ability style attribute, visual appendix, shape/silhouette, style attributes, construction, fastenings and acceptability. Annette (2001) also noted that pregnancy does not mean that the comfort or stylish days are over, and so one should offer oneself the perfect mix of comfort, fit, style and look of today's fashions. Most importantly, Heejae and Catherine (2012) discovered in a study that functional and aesthetic consideration needs to be taken into account to develop pregnant women maternity apparel.

Conclusion

Design is important in developing garments. Garment patterns are very necessary in garment construction for necessary alternations before the fabric is finally cut. Apparels made from drafted patterns always give very good fit. Skirts styles produced in this study were functional maternity skirts which will make the pregnant women comfortable on their waist to accommodate the growth of their babies and give the aesthetic attributes. The design details for the skirts on the lower waist and torso were judged to be more functional and comfortable. After evaluation, the overall feedback from the models was highly favourable. It was concluded that the study was successful since the prototype functional skirts designed, constructed and fit-tested satisfied both the users and judges.

Recommendations

Based on the findings, the following recommendations were made:

1. The findings of this study should be made available to garment makers and apparel industries to encourage the production of smart, stylish and attractive designs that are functional, aesthetic and expressive for pregnant women's use based on the established design ideas obtained from needs assessment.

2. The summary of the method of pattern drafting adopted in this research should be extracted and published to provide knowledge for students offering courses on Home Economics garment designing, clothing and textiles, and their teachers in all the levels of institutions. This will aid in equipping them for creativity in garment designs with functionality in focus especially for pregnant women.

3. Ready to wear functional maternity apparels in different sizes should form part of the anti-natal registration, kits for pregnant women in the maternity centres. The cost of the kit may be built into the cost of pregnant women's registration in the maternity centers.

4. The apparel industries and manufacturers should use size charts and patterns produced in this study to prepare commercial patterns that can be used to mass produce functional maternity apparels for sale in markets and shops locally and also exported to other countries of the world. It should equally be used for participation in African Growth and Opportunity Act (AGOA).

References

Aldrich, W. (2006). Metric Pattern Cutting for Men's Wear: Including Unisex Clothes and computer *Aided Design* (4th Ed). USA: Blackwell.

Alexander, M., Connell, L.J, & Presley, A.B. (2005). Clothing Fit Preferences of Young Female Adult Consumers. *International Journal of Clothing Science and Technology Journal, 17* (1): 52–63.

Anikweze, G.U. (2013). *Development of Patterns for the Mass Production of Suits for Men With Figure Flaws in Nasarawa State, Nigeria*. Unpublished Ph.D Thesis, Department of Vocational Teacher Education, University of Nigeria, Nsukka..

Anyakoha, E. U. (2012). *Home economics for junior secondary schools*. Onitsha: African first publishers limited.

Anyakoha, E. U. (2015). *Home management for schools and colleges* (revised edition). Onitsha: Africana first publishers Plc.

Ashleigh, B. (2013). Maternity wear: To conceal or revels? Early modern medicine.com/maternity-wear-to-conceal-or-reveal. Retrieved 18th March, 2015.

Brown, P. & Rice, P. (2001). *Ready-to-Wear Apparel Analysis, 3rd edition*. New Jersey: Merrill-Prentice Hall.

Gall, M.D., Gall, S.P. & Borg, W.R. (2007). *Educational Research and Introduction (8th ed.)* U.S.A. Pearson Education. Inc.

Gupta, D. (2011). Functional Clothing - Definition and Classification. *India Journal of fibre & Textile Research vol. 36,* pp. 321–326.

Haejae, J. and Catherine, B. (2012). Assessing functional and aesthetic clothing needs of young male tennis players. *International journal of fashion design, technology and education, 5*(2): 145–150.

Igbo, C.A. & Iloeje, C.I. (2012). *The Basic of Press Pattern Drafting Enugu*. Inselberg (Nigeria) Ltd.

Iloeje, C. I. And Anyakoha, E. U. (2012). Development and testing skirt blocks for female youths in Enugu state of Nigeria. *Journal of Home Economics Research, 116*, p.69–78.

Kinley, T.R. (2013). Size Variation in Women Pants, *Clothing and Textiles Research Journal. 21* (1):19 31.

Kowalczyk, D. (2016). Exploratory and Descriptive Research. Retrieved on 26/03/2019 from www. Study.com/…/purpose-of-research-exploratory-descriptive-exploratory.

Marshal, S.A., Jackson, O., Stanley, M.S., Kefgen, M. & Touchie-Specht, P. (2004). *Individuality in Clothing Selection and Personal Appearance*. New Jersey: Pearson.

Marshall, J. E. and Raynor, M. D. (2014). Mule's textbook for midwives Elsevier Health Sciences (16th Ed) UK Churchill Livingstone.

Musial, J. (2014). "pregnancy chic": The marketing of maternity wear. *Journal of the Association for research on marketing, 5*(1):162-171.

Noopur, A. (2012). 'Smart Maternity Wear' an Answer to Longevity Problem of Maternity Wear. *Journal of Textile and Apparel, Technology and Management. Vol. 7*, Issue 3.

Norah, W. (2011). *The Cut of Women's Clothes*. London: Routledge.

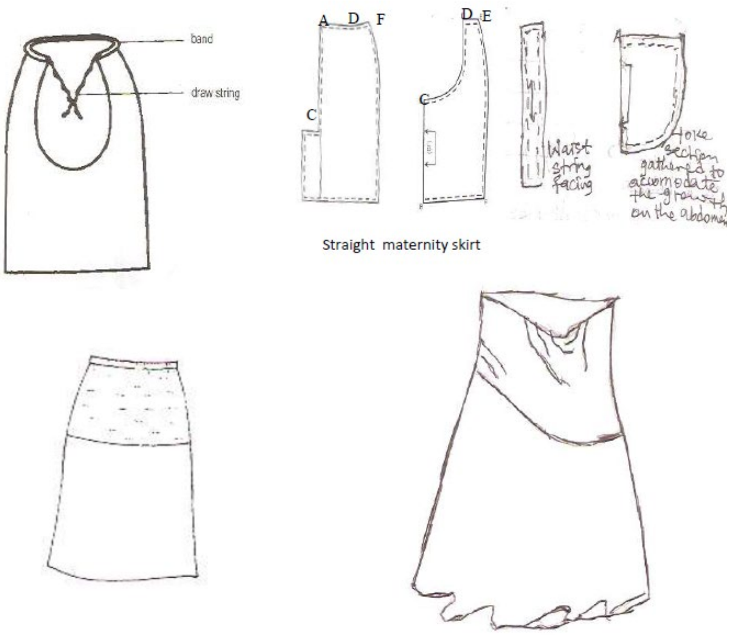
Prabir, J. (2011). Assembling NTechnology for Functional Garments - An overview India *Journal of fibre & Textile Research vol. 36*. Pp. 380–387.

Shailong, C.N. and Igbo, C.A. (2009). Establishment of Body Measurement and Drafting of Block Patterns for Male Pre-school Children in Enugu State. *Journal of Home Economics Research* (JHER, vol 10 and 11: pg.86–94.

WTO (2006). World Trade Report. http://www.wto.org/english/nrwse/prescribe/pr447ehtm). Retrieved 24 July, 2006.

APPENDIX 1 A PREGNANT WOMAN IN HER CONVENTIONAL APPAREL (STRAIGHT FITTED

APPENDIX 2 Straight maternity skirt



PEER-REVIEWED CONGRESS PAPER

Out-of-field teaching and Home Economics: Incidence and impacts. Global insights from the field

Donna Pendergast[1], *Jay Deagon*[2], *Anna Du Plessis*[1], *Sarah* McManus[1] & Bill Blayney[2]

Abstract

Out-Of-Field-Teaching (OOFT) is increasingly prevalent as teacher shortages reduce the availability of qualified teachers in a range of subject areas. In Australia, teacher shortages in the STEM (science, technology, engineering, mathematics) field has long been acknowledged; however, there are workforce gaps in many subject areas, including home economics and related fields, such as food and nutrition, textiles and health. Teacher shortages are not confined to the Australian context. Global shortages are a challenge identified by UNESCO as a critical factor impacting the capacity to achieve Sustainable Development Goal 4: Quality Education by 2030 (UNESCO, 2016). The demand and supply of qualified home economics teachers in Australia is not a new problem. Pendergast and colleagues (2000) highlighted more than two decades ago some challenges and implications for the home economics discipline including: OOFTs lacking expert knowledge, pedagogical content and skills; workplace health and safety concerns; a lack of identity and misunderstanding of the discipline area such as assessment processes, practices and theories—all of which may negatively impact student learning, teacher effectiveness and student access to expert role models. As the home economics field faces challenges such as a lack of specialist programs to educate in-field, OOFTs are more likely to be a feature of home economics classrooms, hence the impetus for this current investigation. In order to explore the OOFT phenomenon in home economics at a global level, a two-stage process was followed: 1) a Systematic Quantitative Literature Review (SQLR) was conducted to identify the informing literature; and 2) an online survey was administered. 470 respondents from 14 countries completed all questions in the survey, of whom 440 were teachers in schools.

Introduction

In 2016 UNESCO released statistics revealing the need for almost 69 million teachers globally to achieve Sustainable Development Goal 4: Quality Education by 2030. These teachers comprise 24.4 million primary school teachers and 44.4 million secondary school teachers (UNESCO, 2016). Of these primary teachers, 3.4 million are additional teachers needed to expand access to school, while the remainder replaces teachers leaving the workforce. For secondary school, the replacement is 27.6 million, with an additional 16.7 million teachers needed to expand the workforce. In addition to the need to increase the teacher workforce globally, teaching quality is paramount, with a key indicator of the standard of teacher education, including specialisation. Estimates from UNESCO (2016) suggest that less than 80% of primary and secondary teachers in many parts of the world meet national standards, where the gap is often filled with those teaching out-of-field or without qualifications. According to

Pendergast, D., Deagon, J., Du Plessis, A., McManus, S., & Blayney, B. (2022). Out-of-field teaching and Home Economics: Incidence and impacts. Global insights from the field. *International Journal of Home Economics, 15*(2), 213-233.

Donna Pendergast ✉ d.pendergast@griffith.edu.au

Ladd & Sorensen (2016), the lack of suitably qualified teachers threatens students' ability to learn and engage to the full extent desired. And this applies to home economics teachers.

The supply of home economics teachers globally is not well understood. A decade ago, Smith and de Zwart opened a window into the global supply and demand of home economics, noting that “in almost every jurisdiction there is currently a shortage of home economics teachers” (2010, p.3). Nothing has changed in the decade since their report was published. In Ireland, for example, where home economics is described as “one of the most popular subjects on the timetable taken by more than 23,000 Junior Certificate candidates …. and Leaving Certificates sit at 12,002” (Donnelly, 2019), schools have been forced to drop the subject because they could not replace home economics teachers due to shortages.

The extent to which suitably qualified home economics teacher shortages and substitute teachers from outside the field are utilised to balance the workforce is not well understood. Anecdotally there is evidence to suggest OOFT is occurring. In Australia, more than two decades ago, a study revealed a growing shortage of home economics qualified teachers to meet a continuous demand, with a major reason being a lack of appropriate tertiary teacher preparation courses (Pendergast et al., 2000), leading to non-qualified teachers delivering the specialist curriculum. Likewise, in New Zealand, a study revealed that 68% of schools use non-specialists to teach technology (home economics is delivered under the technology learning area). Furthermore, the impact of utilising out-of-field teachers means that learning programs sometimes had to be changed as the teachers did not have the curriculum understanding, with programs “watered down”, and with a flow-on of increased workload for specialist teachers to support non-specialist teachers, adding to already demanding loads (Reinsfield et al., 2021).

The out-of-field teaching phenomenon

The authors acknowledge that scholarly work in home economics and related subjects might mention *unqualified* teachers when discussing teachers who do not have qualifications/training and/or expertise in this field. In this paper, the authors will refer to unsuitably qualified/trained teachers to acknowledge that teachers assigned to OOFT positions are most often fully qualified teachers who get assigned to teach home economics because of contextual and school-specific challenges.

Subject areas taught in schools today will shape the next generation of entrepreneurs, leaders, families and every aspect of their futures. This paper focuses on home economics and how suitably or unsuitably qualified teachers influence students' interests, skill development, and learning experiences in home economics. The development of pedagogical content knowledge and skill in a specific subject area is more than textbook teaching or reading about instructional strategies and techniques. On the contrary, it is about an in-depth experience of applied knowledge and skills (Van Driel & Berry, 2012). Deagon (2021) stated that home economics is “a complexity-driven, authentic, and applied discipline that connects ‘real world’ activities and actions with people’s everyday lives, wherever they may live” (p. 139). Focusing on students' readiness/preparedness to apply knowledge in real-life situations, toward career paths, and ignite career passions turns attention to teachers as experts in this subject area. Our investigation aims to develop a deeper understanding of the implications and impacts of the OOFT phenomenon on home economics as a curriculum subject that infuses and offers a range of possibilities that focus on sustainable and optimal health and wellbeing of individuals, families and communities in their environments (IFHE, 2008). This report conceptualises OOFT in home economics as teachers assigned to teach in this specialised curriculum area without having the suitable and/or required qualifications or expertise.

The Australian Industry and Skill Committee (2022) shared employment needs in hospitality, where employment levels increased by 38% in 2021 to 795,200 and a projected further increase to 846,400 by 2025. These needs are comparable to other fields that value added to the economy. For example, the fashion industry added 27.2 million Australian dollars to the economy in 2021 (Hinton, 2021). With hospitality deeply embedded in the industry, the tourism industry has the potential to generate 94 million Australian dollars per year. This economic impact emphasises the recent skill priority identification:

> … occupations in national shortage with an estimated future solid demand related to the hospitality sector include Baker, Pastrycook, Chef, and Cook. The occupations of Barista, Hotel Service Manager are also listed as a strong future demand (Skills Priority List, 2021, p. 2).

Awareness of the potential quality training and skill development through home economics at school has implications for future generations' career paths, entrepreneurial skills, and implications for the Australian economy and the wellbeing of individuals, families and communities. However, the current decline of home economics as a subject of choice and the shortage of qualified home economics teachers made it necessary to understand perceptions fully and investigate the lived experiences of out-of-field and in-field teachers in home economics. Research showed that students shy away from specialist subjects taught by an out-of-field teacher (Du Plessis, 2017). Du Plessis' research further indicated that students quickly realise when a teacher does not have the needed expertise, skills or knowledge to offer quality teaching and learning.

Teachers' in-depth understanding of concepts, theories and ideologies embedded in home economics and sound specialised content knowledge and pedagogies specific to this field will stimulate student interest in the subject. Shulman (1986; 1987) identified content knowledge (CK), pedagogical knowledge (PK) and pedagogical content knowledge (PCK) as knowledge sets that inform teaching and learning. He further defined pedagogical content knowledge (PCK) as in-depth knowledge of the subject matter and the ability to teach that content successfully. Content knowledge (CK) means the theories, principles and concepts of a specific subject or year level, whereas pedagogical knowledge (PK) focuses on teaching principles.

This paper aims to investigate and develop an understanding of how the out-of-field phenomenon influences quality teaching in home economics. Quality teaching is intertwined with skill expertise and experience to develop a professional knowledge base for teaching specific content. Sound subject knowledge informs teachers' capacity to align pedagogical reasoning with the expectations and requirements of curricula and assessment processes. Shulman (1986) noted that teachers' knowledge of their subject matter influences successful teaching practices. Furthermore, the ideology and philosophy that underpins the home economics discipline, which is typically learnt during initial teacher training programs, inducts new-to-the-field teachers as to the reasons i teaching of their specialist subject area is unique and important (Deagon, 2021).

In order to explore the OOFT phenomenon in home economics at a global level, a two-stage process was followed: 1) a Systematic Quantitative Literature Review (SQLR) was conducted to identify any informing literature, and 2) an online survey was administered. This paper now turns to the SQLR.

Stage 1: Systematic Quantitative Literature Review

The Systematic Quantitative Literature Review (SQLR) method was employed to search, select, and analyse the literature pertaining to this study. Conducting an SQLR allows results to be quantifiable and replicable (Pickering & Byrne, 2014) and avoids selective and exclusionary practices. The utilisation of SQLRs in educational research is increasing in popularity, with a growing number of recent studies examining different aspects of education, for example, multiage classrooms (Ronksley-Pavia et al.,2019), sense-of-belonging (Pendergast et al., 2020), and teaching quality (Bradford et al., 2021).

An SQLR applying the Pickering and Byrne (2014) method concurrent with the PRISMA Statement was conducted between the 1st–16th March, 2022. The SQLR was designed to identify research conducted regarding OOFT in home economics to date, inclusive of exploring reported experiences, impacts and causes of OOFT in home economics. General demographic data was recorded to track the country of publication, research methodologies, and the terminology used to report OOFT in home economics. All extracted data was used to inform the generation of the survey and its deployment for this study.

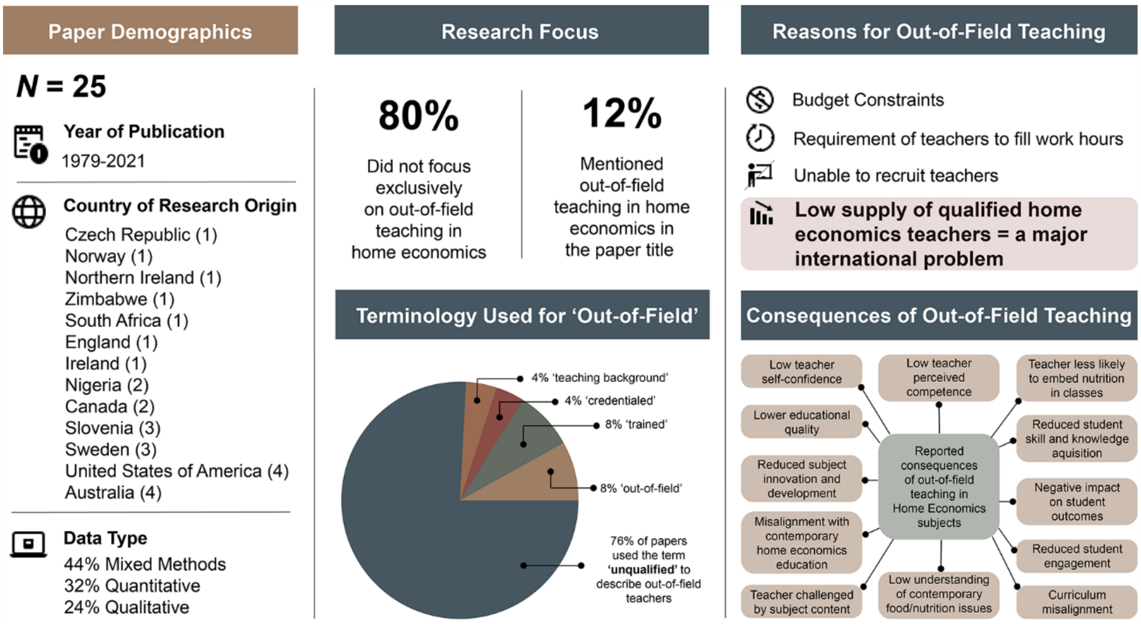
From an initial extraction of 1229 papers, 25 were deemed to align with the SQLR aim. Two search strings were used independently to locate papers for this review; 1) ("home economics" AND "teachers" AND (qualified OR skilled OR trained)); and 2) ("home economics" AND ("out of field" OR "out-of-field"). This strategy captured multiple terms commonly applied to OOFT in home economics and made the search comprehensive. In the resultant papers analysed, the term "unqualified" was applied in 76% of papers to describe teachers who had completed initial teacher education and were teaching home economics out-of-field. By comparison, 8% of papers applied the more accepted modern term "out-of-field". Consequently, we suggest that future research surrounding OOFT in home economics apply the term "out-of-field" to align with contemporary research.

The most prominent finding from the SQLR was the paucity of research data surrounding OOFT in home economics. Of the 25 papers analysed, only five (20%) focused exclusively on this phenomenon, with three papers (12%) making it clear within the title that the research focus included "unqualified" home economics teachers. Most of the information extracted during the SQLR came from papers that did not exclusively focus on OOFT in home economics (80%). The SQLR provided two primary outcomes: 1) OOFT in home economics is mostly reported as a small section of a study rather than being the main focus, indicating the need for comprehensive research exclusively on this topic; and 2) comprehensive information regarding OOFT in home economics is very challenging to locate within contemporary research leaving the majority of the data collected during the SQLR without in-depth explanation, and at times being merely information fragments, indicating that this phenomenon is severely under-researched.

The SQLR revealed 17 papers (68%) where the main reason for OOFT in home economics was qualified home economics teacher shortages preventing school recruitment of qualified staff. Gray and Behan (2007) reported that some school Principals within Northern Ireland allocate teachers without home economics qualifications to teach this subject as a short-term fix in times of shortage. Principals in this study conceded that this might generate negative perceptions of the subject by staff and discourage student enrolment. Furthermore, a Canadian study by Kitchenham and Chasteauneuf (2010) stated that Principals allocate unqualified teachers to home economics to negotiate staff shortages, with 75% of human resources participants in their study being concerned by this strategy.

As indicated, OOFT is an international phenomenon. Reports of OOFT in home economics were recorded across 13 countries within the SQLR, indicating the need for an international investigation into this phenomenon. Concerns surrounding OOFT in home economics were reported as early as 1979 by Garman, who reported statistically significant outcomes ($P < 0.001$) indicating that beginning teachers who studied home economics units within their initial teaching education were scoring higher than teachers who had not done so when applying a consumer education literacy test to 4309 teachers of varied specialisations. Consequently, the author recommended that only specialist home economics teachers teach the subject matter. The SQLR further identified discussions surrounding out-of-field home economics teachers that complement these earlier study findings, where discourses were framed primarily within a deficit model. The discussions indicated that out-of-field home economics teachers were less likely to embed nutrition within their classes (Murimi et al., 2008) and may experience lowered self-confidence and perceived competence in teaching home economics contexts (Kostanjevec et al., 2018; Murimi et al., 2008). Consequences of OOFT of home economics include projected negative influences on educational quality and innovation, and student outcomes (Hakansson, 2015; Hakansson, 2016; Kostanjevec et al., 2011; Kostanjevec et al., 2018; Obeta, 2016; Ogbonyomi, 2021; Sadegholvad et al., 2017; Shadreck, 2012), show misalignment with contemporary home economics education, contemporary food and nutrition issues, and the intended curriculum (Hakansson, 2015; Hakansson, 2016; Sadegholvad et al., 2017), experience challenges in enacting the home economics curriculum (Hobbs et al., 2018), and may have negative impacts on student engagement in lessons alongside the ability of students to acquire new skills and knowledge in personal health promotion (Hrivnova, 2021). Figure 1 provides a visualisation of the key findings from the SQLR.

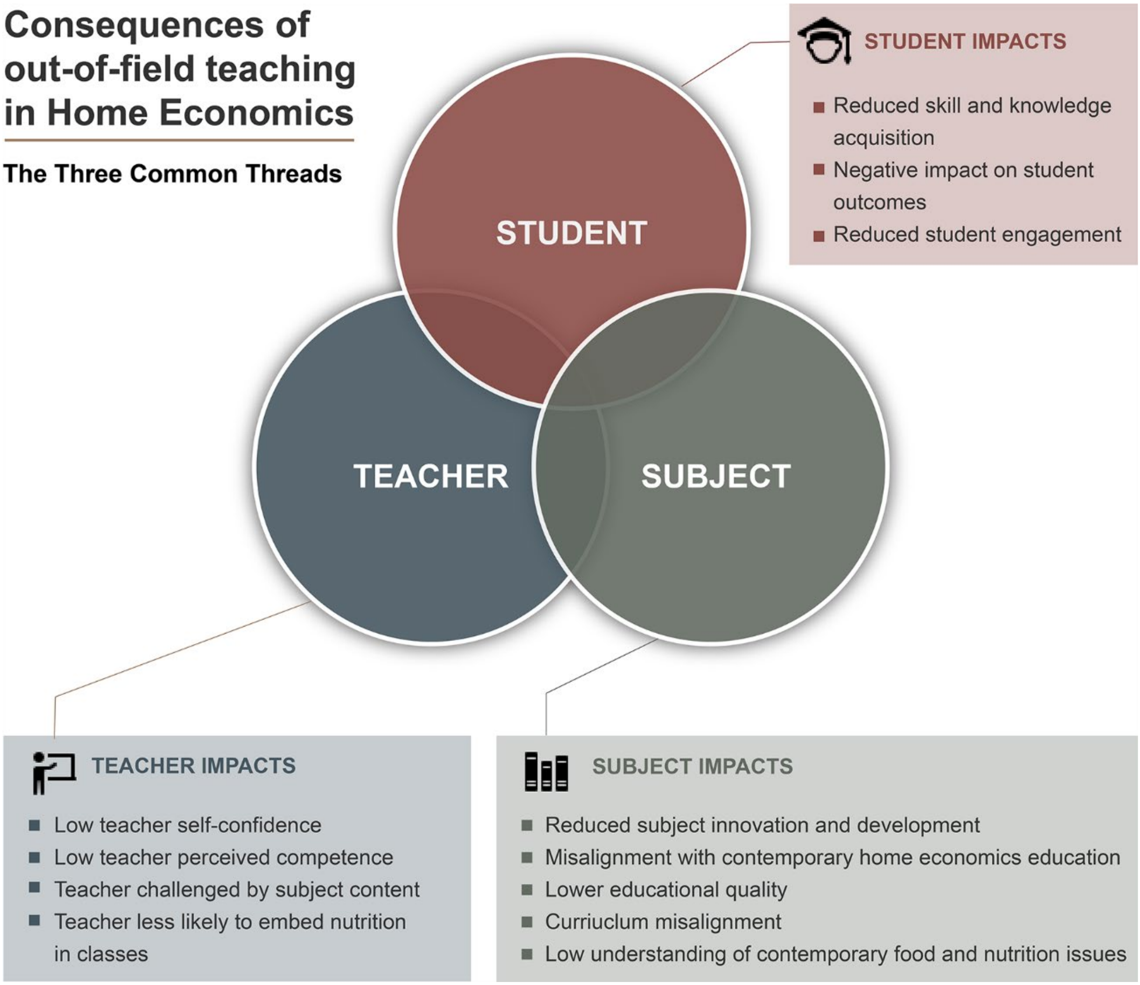
Figure 1: Key Findings from the SQLR on Out-of-Field Teaching in Home Economics



As represented in Figure 1, the overarching reason provided in the literature for out-of-field teaching in home economics was the low supply of qualified home economics teachers—as this was reported in a range of countries, it is a global problem. Related discourses are budget constraints, the requirement for teachers to fill their work hours, and the inability to recruit qualified teachers.

According to the literature, the consequences of out-of-field teaching in home economics are all negative in valency; hence they have a detrimental effect on the field. These consequences can be grouped according to common threads: teachers; students; and the subject. The impacts are categorised according to these areas in Figure 2.

Figure 2: Consequences of out-of-field teaching of home economics



With the literature analysed through the SQLR and three key impacts and consequences outlined, this paper now turns to the survey to examine in more depth the current state of play of out-of-field teaching in the home economics profession.

Stage 2: Online survey with no boundaries

Following the SQLR and the insights gained regarding the reasons for, and the consequences of, OOFT in home economics, this paper will now focus on exploring current teachers' perceptions about impacts and consequences of out-of-field home economics teaching. To achieve this, an online survey was selected as the medium to collect data and provide a voice to the experiences of home economics teachers.

Online surveys are a practical choice offering researchers a borderless environment, access to global professional networks and an opportunity to engage a community of practice in research using social media such as Facebook and Twitter (Bridge et al., 2021). Web-based surveys are easy to administer and are less costly and time-consuming than traditional methods such as mail or telephone (Hopmann, 2012). *Qualtrics Survey Software* was selected to construct and administer the online survey because it is easy to navigate and has several in-built features to assist with data analysis. Initial themes revealed from the SQLR shaped the survey items' development, such as teaching competence and confidence, and workplace health and safety concerns. The survey was pilot tested by 11 critical friends, and several rounds of edits resulted in item reductions and clarity.

The survey was administered globally to align with recommendations provided by the SQLR. An online snowballing design allowed the survey to be distributed widely. Participants were recruited through direct email invitation with a link to the online survey via various home economics related Facebook groups, Twitter and LinkedIn. Members of the research team used their professional networks to disseminate the survey within home economics specific Facebook groups, Home Economics Associations and groups in which they already participate as their community of practice. In addition, emails were sent to various Home Economics stakeholders such as the International Federation for Home Economics (IFHE), individual academics and industry partners throughout the world. The survey was open for a two-week period from 7 to 20 March 2022. Ethics was granted through Griffith University and complies with Human Research Ethics Policy (GU ref no: 2022/050).

Data were analysed to produce descriptive statistics, and free text was analysed using thematic content analysis to determine the frequency of occurrence where select examples of text representing themes generated and informed by the SQLR. The thematic content analysis does not assume explicit and replicable results; rather, thematic content analysis may be viewed as a single reading of the data and is subject to replication (Creswell, 2005).

Findings

Demographic characteristics

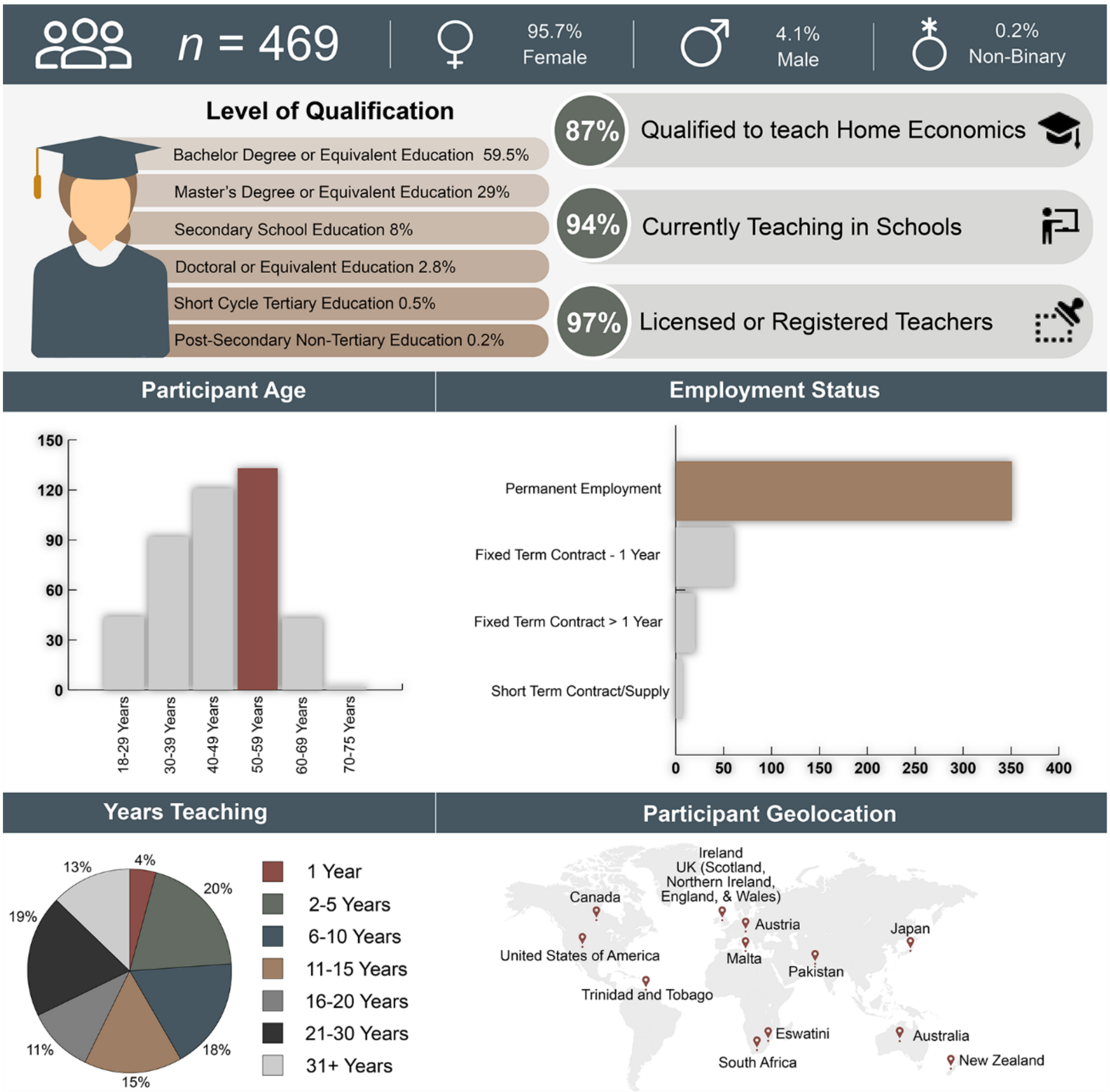
There were 469 respondents from 14 countries who completed all questions in the survey. An additional 61 surveys had incomplete data and hence were not included in the study. The majority of respondents (453) were registered/licensed teachers and 440 of these were currently teaching in schools. Eighty percent of these (351) were in permanent employment, with the remainder on fixed or short-term contracts or supply teaching. Respondents were from a range of countries, with the dominant groups from Australia (53%), United Stated of America (25%), United Kingdom and Northern Ireland (7%), Canada (5.5%), Ireland (3%), New Zealand (3%)—see Figure 3.

Over ninety-five percent (416) of the respondents identified as female, four percent (18) as male, and one respondent as non-binary. 31% were aged under 40, 60% were aged between 40 and 59, and the remainder over 60.

Thirty-two percent of respondents (134) have been teaching home economics for twenty-one years or more, with 26% (110) teaching for 11–20 years and the remainder (165) less than 10 years (42%). Interestingly, in this cohort, 59% indicated home economics teaching was their first career choice, with 41% indicating that was not the case.

In terms of qualifications, the majority (60%) of respondents had a Bachelor degree qualification as their highest level of qualification, while 29% held Masters and 8% secondary school was their highest. A small number held doctoral qualifications (3%). More than 150 of the respondents also held trade certificates and diplomas in fields related to home economics. Eighty-seven percent of respondents revealed they are qualified to teach home economics, while 13% (54) are not home economics qualified. Seventy-seven percent of respondents mostly teach home economics subjects for which they are qualified, however 6% of home economist teachers mostly teach subjects out of their field. Of the 13% of respondents who are not qualified home economics teachers, 9% teach mostly home economics while the remainder sometime teach home economics.

Figure 3: Demographic characteristics of OOFT survey respondents



Having now a snapshot of the demographics of this cohort, this paper turns to consider the views of respondents in terms of teaching out-of-field in home economics—what are the reasons, is it a concern, and what suggestions do respondents have to address the out-of-field phenomenon.

Teaching out-of-field in home economics

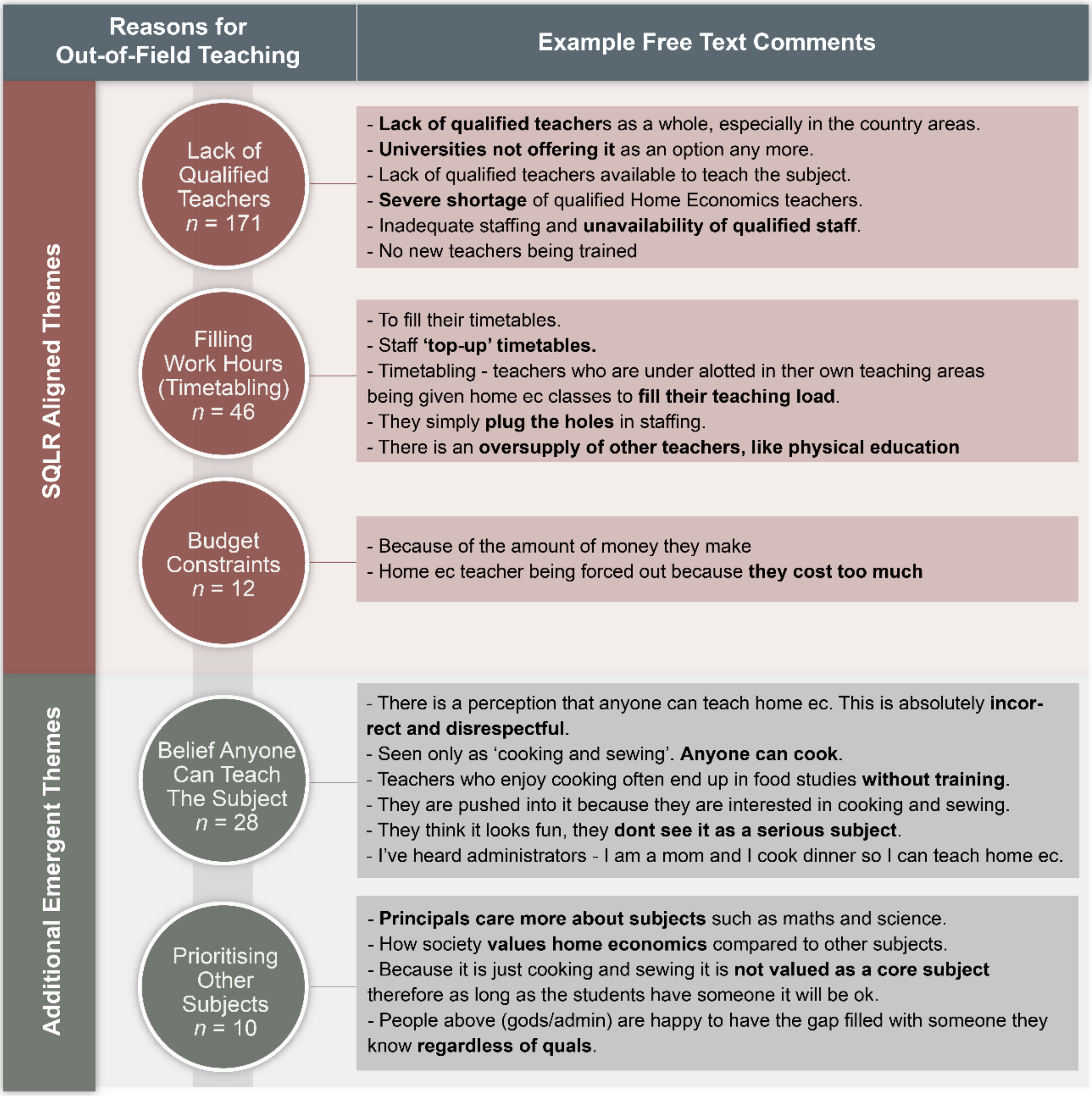
In this section, the findings are presented in three sections based on respondents' comments about OOFT in home economics. These are: reasons for teaching out-of-field; concerns about the consequences; and proposed solutions to out-of-field teaching. Each will be considered in turn.

Respondents reported reasons for out-of-field teaching

The SQLR identified three key reasons for OOFT in home economics: budget constraints; the requirement for teachers to fill their work hours; and the inability to recruit qualified teachers. In this survey, respondents were invited to provide comments about the reasons for OOFT in home economics. There were 283 separate comments made. Figure 4 provides an analysis of the free text, classifying responses first according to the three categories identified from the SQLR. In addition, at least two more themes emerged, and these are added to the reasons: the belief that anyone can teach it; and prioritising other subject areas. In accordance with thematic analysis methodology (Creswell, 2005) verbatim examples of comments are provided.

Figure 4 captures some of the reasons for OOFT in home economics, as reported by the 440 home economics teacher respondents around the world. The SQLR identified three main reasons for this phenomenon occurring: budget constraints; the requirement for teachers to fill their work hours; and the inability to recruit qualified teachers; and these are all present in the data.

Figure 4: Free text responses: Reasons for OOFT in home economics



The relative frequency of comments related to each of three areas points to the very dominant reason—the lack of suitably qualified home economics teachers, with 171 comments from separate individuals referring to this as a factor. Forty-six respondents pointed to the filling up of timetables as a reason for out-of-field teaching occurring, in their experience; and 12 pointed to budget issues that meant home economics teachers could not be appointed. Alternatively, budget issues could also refer to the cost of resources, equipment and maintenance to upkeep home economics spaces and that schools and universities do not, are not able, or are unwilling to provide financial support to maintain, refurbish or upgrade home economics departments and employ qualified specialists. Finally, two further reasons for out-of-field teaching occurring in home economics were generated from the text: the belief that anyone can teach it; and the prioritising of other subject areas, with 28 and 10 comments respectively.

Respondents concerns about the consequences of out-of-field teaching

There are two groups in the survey responses—those not in schools (30), and those working as teachers in schools (440). Of those not in schools, most were either retired or working in higher education institutions. This group were asked if out-of-field teaching was a concern to them, and 76% indicated that it was. Sixteen provided comments from their experience of why out-of-field teachers are utilized to deliver home economics subjects—almost all used the word "lack" in their response: lack of qualified teachers; lack of specialists; lack in rural and remote locations.

Of those working in schools as teachers, 73% (252) of respondents indicated that teaching out-of-field was a concern to them, with the remainder (91) indicating it was not. The survey provided an opportunity for respondents to explain the nature of their concerns. In the free text written by the respondents, there were 267 separate comments, and more than 13,600 words were used. Free text in this section was often very extensive and multifaceted, for example:

> Out of field teaching is a concern for any subject area due to not having the specialisation and experience in subjects. The problem is that there is a massive teacher shortage. At the moment we are employing a heart beat with no experience OR having teachers teach 2 subjects in the one room as we cannot get staff. We are being supplied staffing allocations from the Dept. of Ed but cannot get staff to fill those allocations. We are desperate for anyone. Unqualified teachers in the kitchen and sewing rooms are a hazard to students. Their behaviour management and organisational skills are a problem and students get frustrated about not completing work that they thought would be fun so drop the subject. Just because a teacher can cook at home doesn't mean they can teach it. The teacher shortage means that random teachers from other departments are asked to fill in. Our subject suffers more and more because of it. The Principal and HODs just don't get it!

This response is indicative of the free text provided and expressed frustration and confirmatory evidence across several of the key themes presented in the literature. Referring back to the SQLR, the review revealed 12 consequences of out-of-field teaching in home economics, and these can be further categorized into the broad areas of: the subject, teachers, and students (see Figure 2). In the above quote alone, all three impact areas (the subject, teacher and students) are mentioned. An analysis of the free text confirms that each of these 12 consequences are represented frequently in the comments, with many individuals noting several in their comments. Along with these three broad areas, there are two additional areas that emerged from the respondents' comments about their concerns about out-of-field teaching: safety concerns; and sustainability of the subject, that were not noted in the SQLR. Table 1 provides a summary of the frequency of comments for each of the identified themes.

Table 1 captures some of the consequences of the OOFT phenomenon within the home economics subject area. The information offered in Table 3 highlights perceptions as offered in the open-ended survey questions supported by respondents' verbatim quotes. The summary focuses on the nature of the phenomenon's impact on the, i) subject area, ii) teachers and iii) students. It is, however, informative to take note of respondents' specific references in their open-ended responses, for example, to the subject area 406 times, teachers' lived experiences 1071 times and to students 259 times, to voice concerns.

Table 1 Consequences of out-of-field teaching of home economics from the survey respondents

SUBJECT IMPACTS	
IMPACT NATURE	**EXAMPLE FREE TEXT COMMENTS**
Low/lack of respect, understanding and valuing contemporary food/nutrition issues *n* = 180	I worry that they do not have the core competencies to teach the area. There is so much false information about nutrition without science to understand it you could easily be teaching misinformation. The teachers that are not trained in home economics often teach the students unsafe practices. They also miss many techniques and terminology associated with cooking, textiles, food and nutrition.
Curriculum concerns and misalignment *n* = 83	Home economics is more than the individual skills taught and assessed through curriculum. It aids in connection with and understanding students and being able to widen their perspective of the world. I am concerned that students taught by out of field teachers are skills focused and missing out on the underlying principles of home economics. Students not being trained correctly. Students not enjoying home economics due to out of field teachers not as passionate about the subject or have as much knowledge about the area. Teaching the students incorrect units and assessments that are not relevant to the curriculum.
Concerns about subject interest, innovation, development and its related restrictions *n* = 64	In seeing others who do not have the background and in-depth training in the content, I feel that they do not teach FCS classes like FCS classes should be taught - they don't focus on individual and family wellness - and in the United States there is a strong push to teaching careers only, so I see teachers coming from "industry" and teaching the business aspect, and not the balance of home, family, and work - no mention of the Body of Knowledge or frameworks for FCS and those deeper themes and deeper thinking that we want to be teaching our students. I was taught that in many cases in FCS, it should be process over product - but in these classrooms I definitely see product over process. They have limited background knowledge to share with students. This causes miss information and a lack of creative teaching techniques.
Lower educational quality concerns *n* = 25	Unqualified teachers trivialise and de-skill the subject area. From my experience students always get the best education in home economics from teachers who are trained in home ec.
Misalignment gaps with contemporary home economics education *n* = 18	There are many teachers teaching family and consumer sciences that do not know what they are doing in the area(s) they are teaching. Because of this lack of knowledge or skill level they are unable to effectively cover the materials and students miss out. Concerns are learning is often not appropriately developmental. Some teachers lack knowledge and skill. Management of large groups of cooking and management of facilities not well handled. Lack of systems knowledge. Lack of safety understanding.

Table 1 Consequences of out-of-field teaching of home economics from the survey respondents (cont.)

TEACHER IMPACTS	
IMPACT NATURE	**EXAMPLE FREE TEXT COMMENTS**
Teachers challenged by subject content *n* = 156	The teachers that are not trained in home economics often teach the students unsafe practices. They also miss many techniques and terminology associated with cooking, textiles, food and nutrition. The lack of Home Economics teachers in Scotland is a real concern. We see students once a week so skills building is extremely difficult. Student teachers coming through do not know the basics to deliver our subjects. Their practical skills are non-existent.
Low teacher perceived confidence and skills *n* = 139	Individuals are not being encouraged to get professional development specific to content areas, are not being mentored by HE professionals, and frequently are not members of a professional organization related to HE. These individuals do not have the philosophical background to understand the holistic nature of HE. Many are teaching technical skills only without embedding the broader topics (ie sustainability, global perspectives, community service) Lack of knowledge, confidence and time management. Teachers don't understand the speed a practical class moves. Teaching bad habits by out-of-field teachers is hard to break later. Out of field teachers into home economics may lack the background experience of working in a noisy workshop or kitchen and therefore do not have the same "with-it-ness" as those with experience in those spaces.
Perceptions and concerns about nutrition classes *n* = 30	There is so much false information about nutrition without science to understand it you could easily be teaching misinformation. Some teachers that are given food classes have no idea of what they are teaching and do it just because... They actually do more damage to the subject, as they discourage students from pursuing the subject ... teachers that 'like' to cook cakes, biscuits and high fat foods, it goes against everything we are trying to teach students. People with no nuanced knowledge of nutrition and health should not be teaching it. Many times they unknowingly nudge students towards eating disorders.
Low teacher self-view and confidence *n* = 29	There are many teachers teaching family and consumer sciences that do not know what they are doing in the area(s) they are teaching. Because of this lack of knowledge or skill level they are unable to effectively cover the materials and students miss out. Concerns are learning is often not appropriately developmental. Some teachers lack knowledge and skill. Management of large groups of cooking and management of facilities not well handled. Lack of systems knowledge. Lack of safety understanding

Table 1 Consequences of out-of-field teaching of home economics from the survey respondents (cont.)

STUDENT IMPACTS

IMPACT NATURE	EXAMPLE FREE TEXT COMMENTS
Concerns regarding students' correctly taught skill, knowledge and learning acquisition *n* = 91	Wellbeing of students and teachers. Concerns about interest and passion in the field. Student learning suffered even though all of my resources were shared. Unfortunately, there's is a lot of skill and art to teaching home economics courses. Without any training there are definitely deficiencies that cannot be made up by having an interest in cooking.
Reduced student passion, motivation engagement and involvement *n* = 31	A lack of knowledge and expertise in the field can result in poor student engagement and retention into senior years. This impacts subject choices for students Students feel your passion and commitment and this will serve as a motivator in class. Being a passionate Home Economics educator, I see this value-adding in lessons as an extremely important part to keep the engagement of students.
Negative impact on student outcomes *n* = 21	I feel like students will take the subject less seriously if they don't have qualified teachers who are passionate about the subject. Unqualified teachers in the kitchen and sewing rooms are a hazard to students. My concern is that not everyone is passionate about the subject. I find this leads to poor experiences and students less likely to take it up in their senior years.

Table 1 Consequences of out-of-field teaching of home economics from the survey respondents (cont.)

EMERGING IMPACTS	
IMPACT NATURE	EXAMPLE FREE TEXT COMMENTS
Safety concerns *n* = 58	Safety is a major concern…knowing how to food prep at home is completely different to managing a class of students while they prepare foods. Short cuts taken at home don't translate well to a practical lesson at school eg: inaccurate measurements lead to wasted ingredients, poorly explained techniques may cause injury, eg: knife handling skills and a lack of knowledge about hygiene practices and time management results in unfinished food preparation and unclean kitchens. This negatively impacts staff harmony. Same is true in a Textiles lesson. If students are not taught appropriate machining, ironing, etc skills then accidents can happen and expensive capital equipment can be broken leaving lessons under resourced. Due to the high-risk environment, I feel that it can create an unsafe environment. They do not have the skills of safety in practical classes. They are unsafe. It is a concern because many of them have a limited understanding of safety procedures and protocols that are in place to ensure health and safety in a high-risk environment. Many do not follow procedures for using knives and stoves safely. They don't often have an understanding of how to manage the kitchen with full-class cooking. Some don't follow food hygiene and safety standards. I have had out of field teachers leave chicken or fish out on the bench for long periods of time. I have also had knives go missing from supplies when an out of field teacher takes the class. Many cannot alter recipes to fit dietary requirements, some cannot cook or sew at all, and often are uncomfortable learning. They do not understand the need for equipment to be returned to an exact position in a set way for future use. Many do not supervise cleaning to the required standard. My concern comes from unintentional harm such as in a food related course someone without training can contribute to diet culture in the classroom without being aware of the issues surrounding such topic. Then of course there are safet aspects like food safety and injury that could occur in labs Out of field teachers do not have the skills or training required to effectively manage and teach the subject. Primarily this is a WH&S issue.
Sustainability of the subject *n* = 7	Overall, the teacher shortage in Colorado and the nation is a concern to me. I worry without qualified teachers the Family and Consumer Science programs will be eliminated. I think when people are trained to be teachers in their particular subject area, they are better qualified and better teachers. Where is the future of Home Economics if we allow teachers who do not share the passion to teach in this subject area? We need teachers who have the skill, the knowledge, and the ambition to teach in this field. Out of field teachers do not share the same drive that Home Economics teachers have. The quality and care of teaching is not valued by out-of-field teachers. I think it is important for the integrity & reputation of the subject that we have qualified teachers delivering the content I am always concerned that out-of-field teachers do not have adequate training to properly teach home economics. Without qualified teachers it could lead to the demise of the program.

Noteworthy, not all survey respondents were concerned about the negative impacts of out-of-field teaching. A few, for example, suggested that it is not all negative:

> I don't know enough home-ec teachers who are out-of-field to be overly concerned. I know this is typically looked down upon in this field, but if someone has a passion for one of the content areas, and they have a teaching background, they can really excel and spread their passion.

and

> If an out of field teacher is keen to learn, shows passion for the area and receives appropriate training there isn't a problem and it can lead to really exciting learning opportunities and enormous job satisfaction.

Respondents' solutions to out-of-field teaching

The respondents who are not teachers in schools (30) were invited to suggest solutions. The responses mostly referred to the need for teacher preparation programs. Several pointed to the frustration of program closures, poor workforce planning, and the inability to offer a viable solution for this dilemma.

For those working as teachers in schools (440), there were 250 comments providing responses to the invitation to provide solutions. Nine respondents were unable to provide solutions, making comments such as: "I am not sure what can be done"; "I wish I knew"; "I don't know"; and "[T]his research is a good start! It is a very complex problem. I don't have any suggestions but I wish you luck."

A thematic analysis of the data led to the generation of 10 themes that can be grouped together into three overarching areas: policy and action; access to qualifications and professional learning; and, valuing and advocacy of home economics. Table 1 provides a summary of the 10 themes with a frequency of how many respondents included a comment related to this theme, and some examples of text.

Table 2 presents the proposed solutions OOFT in home economics, as reported by the 440 home economics teacher respondents around the world. Ten themes that can be grouped together into three overarching areas: policy and action; access to qualifications and professional learning; and, valuing and advocacy of home economics, were generated from the comments. Taken together, there were 126 comments related to access to the theme—qualifications and professional learning. Thirty-five solutions were categorized into the theme of valuing and advocacy of home economics. Finally, 18 comments were made regarding the need for policy and action related to OOFT.

Table 2 Solutions to out-of-field teaching of home economics from the survey respondents

POLICY AND ACTION TO AVOID OUT-OF-FIELD TEACHING	
SOLUTION	EXAMPLE FREE TEXT COMMENTS
Develop and implement policies to avoid out-of-field teaching (*n* = 11)	Simply not allow it to happen, have all teachers in the fields of expertise. Mandate University level training before teaching in this area. The government needs to develop a policy to ensure qualified teachers are teaching what they were trained to teach across all subjects. Acknowledge the challenges. Policy development for the effective management of the implications. Tighten up regulations for who can teach.
Incentivise (*n* = 7)	Incentives to teachers to specialise and locate to where jobs are. Better government funding to qualified staff Better pay for specialist teachers. I think one solution would be to see the value of teachers and pay them more. Perhaps then hopefully we will attract people into the profession and we wouldn't have to worry so much about teachers having to teach out-of-field. Offer permanent positions

Table 2 Solutions to out-of-field teaching of home economics from the survey respondents (cont.)

ACCESS TO QUALIFICATIONS AND PROFESSIONAL LEARNING	
SOLUTION	**EXAMPLE FREE TEXT COMMENTS**
Teacher education programs (*n* = 60)	More universities to offer as a subject to teach in home economics. Increase intake plus, other Universities training teachers in this area. Train more food tech/hospitality teachers, many are retiring- as I am, there is no one to replace us. Heaps of ads in NSW trying to get positions filled. A comprehensive degree program would be helpful. We used to have a bachelor of home economics offered at UBC and they changed the program making it harder for younger graduates to know which courses to take to get qualifications needed to teach home economics. Universities need to start training more teachers in Home Ec, just not enough offering the course! The Department of Education needs to offer retraining opportunities for interested staff. Increase supply. Make add on course - (2 years full time) available to teachers in other subject areas/suitable candidates (e.g chef/people with an honours degree in food/textiles etc). New course should be in any college/university in Ireland other than St. Angela's Sligo or any Dublin college/university. E.g. Dundalk I.T. Bring back the teaching degree to be internally studied to attract young people to study the teaching area. Give it the value it deserves like all the other subjects which are an important part of life literacy, numeracy, health…
Professional development and bridging courses (*n* = 44)	Training courses for out of field teachers to upskill More training for those who think they are the experts! They should do a short course offered by home economics Upskilling. This is an easier way than having teachers retrain and/or go back to uni. We already have a teacher shortage and we need to find ways to get quality teachers in the classrooms. We have quality teachers that are in schools and are ready for a change and would not go back to further study but would attend upskilling sessions to give them qualifications or competencies to teach in the Home Economics field. Support HEC teachers in PD to continue to develop high quality curriculum and grow the subject area and create professional support in training. Home-ec teachers who teach out-of-field need robust professional development in the content area they are not an expert at. More accessible training for working out of field teachers. Universities/ training organisations need to provide short courses with official acknowledgment.
Mentoring (*n* = 18)	I mentored several teachers who were not Home Ec trained. These teachers need a mentor. Job shadowing will allow for experiences. Mentoring and training days. provide mentor teachers and more time for training. Anyone who takes on out-of-field teaching in HEc would benefit from having a dedicated mentor teacher who is knowledgeable and approachable to buddy with.
Funding qualifications (*n* = 8)	Cheaper post graduate training.
Enabling allied fields to transition (*n* = 6)	One solution may be to use non-teaching specialists, while home eco teachers facilitate. Eg: chef comes in, presents a prac, then the home eco teacher continues with theory. Might help the prac- being presented at a high level, and the theory - any teacher could present Encouraging those who have field experience (i.e. Chef, Interior Designer, seamstress/fashion designer, early child education, etc) to consider teaching, even part-time (one or two classes) Chefs with excellent training in their field (I have seen chefs wanting to move into teaching that do not have confidence of skill) wanting a sea change. I have seen multiple staff in Adelaide do this and it appears to be working.

Table 2 Solutions to out-of-field teaching of home economics from the survey respondents (cont.)

VALUING AND ADVOCACY OF HOME ECONOMICS	
SOLUTION	**EXAMPLE FREE TEXT COMMENTS**
Improving the way home economics is valued (*n* = 15)	More societal acceptance and realization that the skills and areas of study in field of Home Ec are applicable to everyone. Valuing all subjects equally. Schools need to value these skills these teachers have. Use them to better their students. More public knowledge about the benefits of HE would help increase our support and better likelihood that schools support our programs. It's all about whether its value adds to the curriculum. If it's not valued anyone will teach it. Solutions - lobby people to bring back the content based on a need to improve the health of society. Schools implement curriculum based on government decisions. If the government can improve the health of its people through life education and be proactive and preventative with life education then maybe they will value tertiary courses and those hired in the profession. Increase appeal to pupils and increase parent/pupil/other teacher understanding of what is involved in the subject (people think it's like cooking was when they were at school, or that we predominantly cook, but it's so much more).
Promote the importance of home economics (*n* = 11)	Lobby for home economics to return to schools. Better marketing of the GOOD parts of our job and field. Try to promote home economics to society as being as valuable as we know it is. My solution is better marketing for our areas, training more teachers, more benefits for home economic teachers who have full-on days on their feet slaving away barely having time to sit down or do admin during a school day. make home economic subjects compulsory, even if it is up to and including Year 10 level so students can actually learn some important life skills. Home economics needs more marketing, understanding and recruitment. The general public needs a better understanding of their role in public health and education. With that we could then recruit people who are looking for a meaningful profession. Advocates in the media that nutrition and sustainable choices are everyone's business, and HEC explicitly addresses these issues in society. A rebrand/promotion of the subject through schools so people understand what the subject is and its importance in society. Start with the highest policy makers and help them commit to strengthening the profession and curriculum for every student on all levels. A worldwide campaign that unites.
Rename the subject (*n* = 7)	I do think the name Home Ec needs to be re-branded. Parents think home economics is making aprons and cooking scones…. We definitely have an image problem. Not calling the subject home economics would help, I am genuinely embarrassed to tell people the name of my profession. We call it Food and Textile Technologies at school. Lift the profile in society and within schools, make it more important other than cooking and sewing, get CAFS back into the area, make the subject names more 21st century.
Address gendered nature of home economics (*n* = 2)	Encourage more male representation in the field of home economics teaching. A better male uptake.

Discussion and recommendations

This study set out to explore the OOFT phenomenon in home economics at a global level. For the first time, a systematic quantitative literature review revealed what has been published to date, and this was used as the basis for an analysis of a global survey of teachers working in the home economics field. The analysis has led to the reasons and consequences of out-of-field teaching in home economics being expanded beyond what the literature had previously reported. The voices of the teachers are the feature of this paper.

The SQLR identified three key reasons for out-of-field teaching: budget constraints, the requirement for teachers to fill their work hours; and the inability to recruit qualified teachers. These themes were confirmed in the survey responses and two additional categories were generated: the belief that anyone can teach home economics; and prioritising other subject areas. Teacher beliefs about the curriculum subject has implications for teacher identity and targeting initial teacher education and professional development needs, especially when trade professionals are initiated into the home economics space (Blayney & Deagon, 2022). This study points to out-of-field teachers of home economics requiring support, including mentoring, pursuing suitable qualifications, and induction into the field. School Principals are partially responsible for ensuring this occurs (Gray & Behan, 2007, Kitchenham & Chasteauneuf, 2010), as teachers wishing to upskill into home economics require resources such as mentoring and timetable space to engage in further study.

The SQLR revealed 12 consequences of OOFT in home economics. An analysis of the free text confirmed that each of these 12 consequences are represented frequently in the comments. Furthermore, this study revealed two additional areas that emerged from the respondents' comments about their concerns about out-of-field teaching: safety concerns; and sustainability of the subject. The data suggests that suitably qualified teachers of home economics have specialised pedagogical content knowledge, classroom management and safety practices that do not put the subject and safety of students and staff at risk.

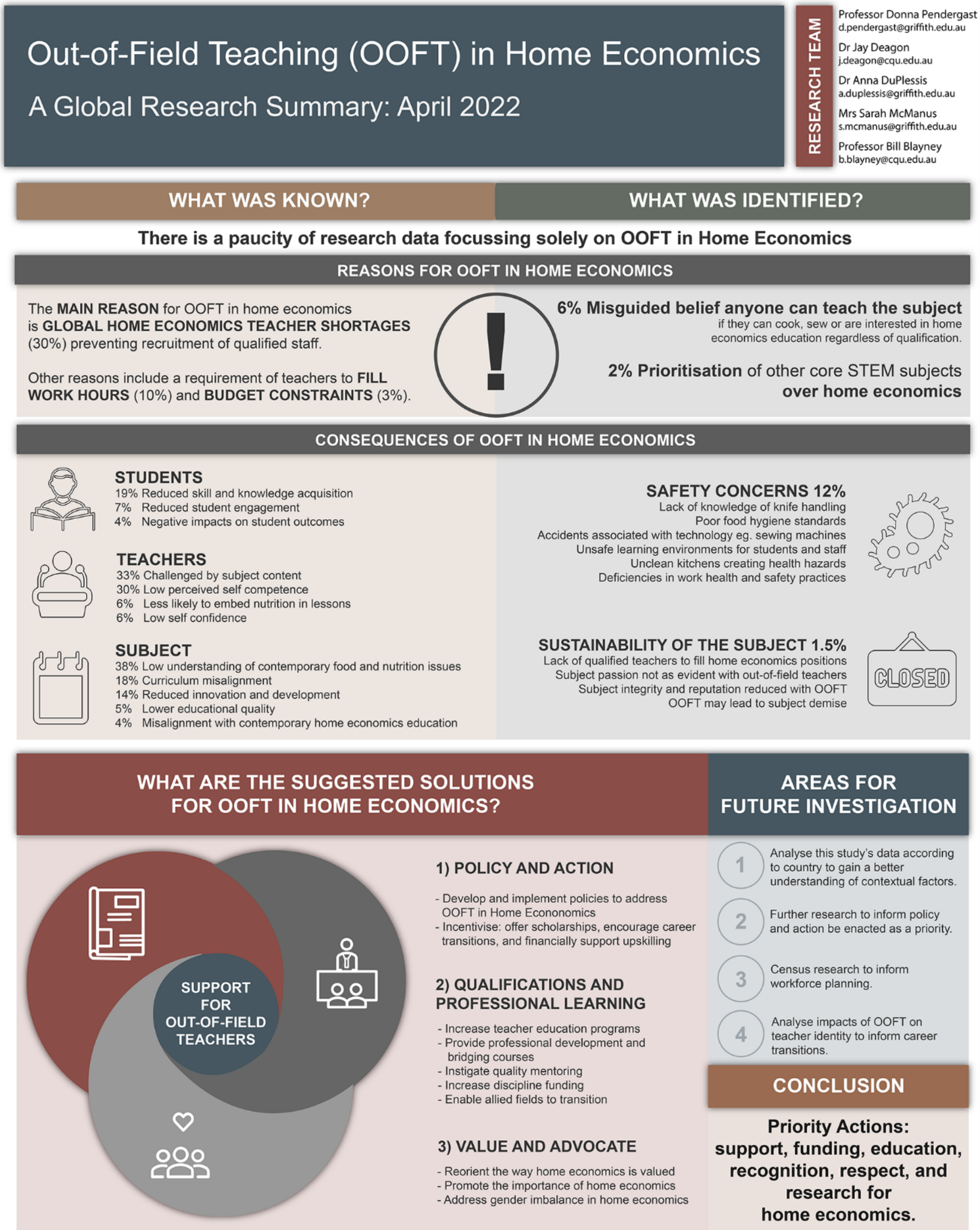
Finally, the survey respondents proposed a range of strategies to address OOFT, and a thematic analysis revealed 10 themes that were grouped together into three overarching areas: policy and action; access to qualifications and professional learning; and, valuing and advocacy of home economics. These strategies are wide reaching and comprehensive and serve as a key lever for future action. Among them, the availability of quality professional learning has the potential to benefit subject area uptake by students as well as lift the profile of home economics amongst faculty members and school communities. In addition, universities are encouraged to make the home economics academic discipline visible to potential students as a viable career pathway and an arena for research into best practices, policy renewal and professional development. It is recommended that the data from this study be further analysed according to the country in which the respondents are located, in order to gain a better understanding of the contextual factors of specific relevance to that setting. This summary is presented in Figure 5.

Conclusion

This study has provided some confirmatory evidence that OOFT of home economics and related subjects is a concerning global phenomenon for the field, with, in the main, negative consequences. Despite the many limitations of this study, providing an initial space for home economics teachers to voice their concerns about OOFT has revealed a list of consequences that effect students, teachers, and the subject itself. Responding to teachers' suggestions for action provides a starting point to address this issue.

Out-of-field teaching of home economics, or any curriculum subject that utilises specialist teachers, requires multifaceted approaches to solutions. In a world facing many challenges such as climate change, political unrest, global pandemic recovery, economics crisis, resource depletion and uncertain futures, home economics is a frontline stalwart for providing foundational knowledge for real-life situations, exposure to multiple career paths, and igniting career passions in students. This is dependent upon teachers with specialist home economics pedagogical content knowledge being available. Teacher shortages and OOFT limit student access to passionate and knowledgeable role models. Home economics teachers deserve respect and recognition for the significant contributions they make to achieving optimal and sustainable health and wellbeing for individuals, families and communities. Recognition and respect can be achieved though reorientation of the profession to a position of value in schools and society. We recommend further research to inform policy and action be enacted as a priority.

Figure 5 Project summary



References

Australian Government. Department of Resources Energy and Tourism. (2010). *2020 Tourism Industry Potential*. https://www.tourism.australia.com/content/dam/assets/document/1/6/x/6/3/2002539.pdf

Blayney, W., & Deagon, J.R. (2022) Tradee-to-teacher pathways: a potential solution to teacher shortages. *Journal of the HEIA, 27*(1), 17-26.

Bradford, K., Pendergast, D. & Grootenboer, P. (2021). What is meant by 'teacher quality' in research and policy: A systematic, quantitative literature review. *Education Thinking, 1*(1), 57-76.

Creswell, J. W. (2005). *Educational Research: planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). New Jersey: Pearson Education, Inc.

Deagon, J. R. (2021). I Do, We Do, You Do Home Economics: Explicit Instruction Connecting Content with Ideology. *Center for Educational Policy Studies Journal, 11*(4), 135-150. https://doi.org/10.26529/cepsj.1188

Donnelly, K. (2019). School has to drop home economics as shortages bite in teaching crisis. *Independent IE*. 28 August, 2019

Du Plessis, A. (2017). Out-of-field teaching: What leaders should know. Dordrecht, Netherlands: Sense.

Garman, E. T. (1979). The Cognitive Consumer Education Knowledge of Prospective Teachers: A National Assessment. *The Journal of Consumer Affairs, 13*(1), 54-63. https://www.jstor.org/stable/23858588

Gray, C., & Behan, S. (2007). Current and predicted staffing patterns in post-primary schools: The perception and experience of school principals. *Oxford Review of Education, 31*(3), 443-458. https://doi.org/10.1080/03054980500222189

Hakansson, A. (2015). Indoctrination or education? Intention of unqualified teachers to transfer consumption norms in home economics teaching. *International Journal of Consumer Studies, 39*(6), 682-691. https://doi.org/10.1111/ijcs.12180

Hakansson, A. (2016). Intentions of formally qualified and unqualified teachers to transfer norms and values in home economics teaching. *International Journal of Consumer Studies, 40*(3), 268-275. https://doi.org/10.1111/ijcs.12251

Hilton, T. (Nov 10, 2021). *Economic contribution of fashion industry in Australia, 2021 by economic activity*. https://www.statista.com/statistics/1263626/australia-economic- contribution-of-fashion-industry-by-activity/#statisticContainer

Hobbs, L., Campbell, C., Quinn, F., Vale, C., Lyons, T., Speldewinder, C., & Tytler, R. (2018, November). *Teachers new to teaching across the STEM subjects: How to create cultures of support, innovation and collaboration* [Paper Presentation]. Deakin STEM Education Conference 2016/2018, Geelong, Australia. https://www.deakin.edu.au/stem-education-conference- 2018/program

Hrivnova, M. (2021). Evaluation of the implemented and adopted curriculum in health education in the Czech Republic and emphasis on the drinking regimen. *CEPS Journal, 11*(4), 81-108. https://doi.org/10.26529/cepsj.1192

International Federation for Home Economics. (2008). *Home Economics in the 21st century: position statement*. http://www.ifhe.org/

Kitchenham, A., & Chasteauneuf, C. (2010). Teacher supply and demand: Issues in Northern Canada. *Canadian Journal of Education, 33*(4), 869-896. https://www.jstor.org/stable/canajeducrevucan.33.4.869

Kostanjevec, S., Jerman, J., & Koch, V. (2011). The effects of nutrition education on 6th graders knowledge of nutrition in nine-year primary schools in Slovenia. *Eurasia Journal of Mathematics, Science and Technology Education, 7*(4), 243-252. https://doi.org/10.12973/ejmste/75208

Kostanjevec, S., Kozina, F. L., & Erjavsek, M. (2018). The relationship between teachers' education and their self-perceived competence for teaching home economics. *Problems in Education in the 21st Century, 76*(2), 175-188. http://oaji.net/articles/2017/457-1524597478.pdf

Ladd, H., & Sorensen, L. (2016). Returns to teacher experience: Student achievement and motivation in middle school. *Education Finance and Policy, 12*(2), 241–279. https://doi.org/10.1162/EDFP_a_00194

Murimi, M. W., Sample, A., & Hunt, A. (2008). Nutrition instruction in seventh grade: A comparison of teachers with and without FCS background. *Journal of Family and Consumer Sciences, 100*(3), 22-27. https://www.proquest.com/openview/70f3034543fc8af2a0ce49d36957c3aa/1?pq-origsite=gscholar&cbl=41036

Obeta, A. O. (2016). Challenges facing teaching and learning of clothing and textiles in Abia State secondary schools, Nigeria. *International Journal of Home Economics, 9*(2), 107-117. https://doi.org/10.1080/09737189.2011.11885336

Ogbonyomi, O. B. (2021). Achieving Sustainable Development Goals on Vision 2030 through entrepreneurship in food and nutrition education. *Nigeria Journal of Home Economics, 9*(5), 226-231. https://www.hepan.org.ng/journal/index.php/njhe/article/view/53

Pendergast, D., Reynolds, J. & Crane, J. (2000). Home economics teacher supply and demand to 2003 – Projections, implications and issues. *Journal of the Home Economics Institute of Australia*, 7(3), 1-41.

Pendergast, D., Ronksley-Pavia, M., & Dewhurst, Y. (2020). A systematic quantitative literature review of pre-service teachers' sense of belonging during school-based experience. *International Journal of Home Economics, 13*(2), 59-79.

Pickering, C., & Byrne, J. (2014). The benefits of publishing systematic quantitative literature reviews for PhD candidates and other early-career researchers. *Higher education research and development, 33*(3), 534-548. doi:10.1080/07294360.2013.841651

Reinsfield, E., Lee, K. Exploring the technology teacher shortage in New Zealand: the implications for quality teaching and learning. *Int J Technol Des Educ* (2021). https://doi.org/10.1007/s10798-021-09668-4

Ronksley-Pavia, M., Barton, G. & Pendergast, D. (2019). Multiage Education: An Exploration of Advantages and Disadvantages through a Systematic Review of the Literature, *Australian Journal of Teacher Education, 44* (5), 24-41.

Sadegholvad, A., Yeatman, H., Parrish, A. M., & Worsley, A. (2017). Experts' views regarding Australian school-leavers knowledge of nutrition and food systems. *Australian and New Zealand Journal of Public Health, 41*(5), 502-507. 10.1111/1753-6405.12703

Shadreck, M. (2012). Challenges of implementing the food and nutrition curriculum in secondary schools in Chivi districts, Zimbabwe. *Journal of Emerging Trends in Educational Research and Policy Studies, 3*(5), 779-784. https://wwwjeteraps.scholarlinkresearch.org

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4–14.

Smith, G. & de Zwart, M. (2010). Home Economics: A contextual study of the subject and Home Economics teacher education. *Teacher Inquirer*, May 2010.

Skills Priority List. (June, 30, 2021). *2021 Skills Priority List*. https://www.nationalskillscommission.gov.au/2021-skills-priority-list

The Australian Industry and Skill Committee (January 21, 2022). *Industries, Tourism, Travel and Hospitality Overview*. https://nationalindustryinsights.aisc.net.au/industries/tourism-travel- and-hospitality/hospitality

UNESCO (2016). UNESCO highlights shortage of teachers. http://sdg.iisd.org/news/unesco-highlights-shortage-of-teachers/

Van Driel, J., & Berry, A. (2012). Teacher professional development focusing on pedagogical content knowledge. *International Journal of Educational Research, 41*(1) (2012), pp. 26-28, 10.3102/0013189X11431010

PEER-REVIEWED CONGRESS PAPER

Perceptions of undergraduate students on the care of the elderly in Nigeria

Uju Ejinkeonye, Elizabeth Chukwu, Uju Nnubia & Onyekachi Enete
Michael Okpara University of Agriculture, Umudike, Abia State

Abstract

Elderly in Nigeria, relies on the younger family members for care and protection at old age. These younger family members are mostly youths and undergraduates, who are the hope of every society. The main purpose of the study was to examine Perceptions of Undergraduate Students on the Care of the Elderly Population in Nigeria. The study was conducted at Michael Okpara University of Agriculture, Umudike, Abia State, among final year students. The study adopted a descriptive survey design. Three hypotheses null hypothesis guided the study which include: There is no significant difference in the mean response of students living with elderly person at home and those not living with elderly person at home on their feelings towards the elderly, There is no significant difference in the mean responses of students who have elderly persons in the family and those who does not have elderly persons in their family on how the feel communicating with the elderly, There is no significant difference in the mean responses of male and female students on how the elderly with health challenges be cared for. The population was made up of 5,400 final year students of the university as at 2017/2018 academic session, while a sample of 270 were randomly selected for the study. Questionnaire was used for data collection, which was face validated by three experts. Cronbach alpha reliability coefficient index was used to determine the internal consistency of the instrument and it yielded an overall coefficient of a = .81. The questionnaire was directly administered to the respondents at the Information Communication Technology (ICT) training workshop organized by the University for final year students. The research questions were analyzed using mean, while t-test was used to analyze the hypotheses. The findings include: students feel the elderly are difficult to communicate with, students living with elderly at home feel differently towards the elderly, young people do not like communicating with the elderly, students feel government should make better living arrangement for the elderly among others. Based on the findings, recommendations were made, which include that the community leaders and religious groups should be organizing programs and events that enables improve interaction between the elderly and younger populations among others.

KEYWORDS: **ELDERLY CARE, UNDERGRADUATE, NIGERIA, AGEING-FRIENDLY SOCIETY, GOOD HEALTH AND WELLBEING**

Introduction

The elderly population is an integral part of the world’s population. Doherty, Mitchell, and O’Neil (2011) observe that the elderly population of the world is increasing to the degree that a shift is occurring in the population distribution of the world. Adadokun (2012) in Eboiyehi

Ejinkeonye, U., Chukwu, E., Nnubia, U., & Enete, O. (2022). Perceptions of undergraduate students on the care of the elderly in Nigeria. *International Journal of Home Economics, 15*(2), 234-244.

Onyakachi Enete ✉ onyekachinnenna@gmail.com

(2015) pointed that it is due to several factors which includes; decline in fertility, improvement in public health, increase in life expectancy and changes in living arrangement among family members. The increase of the elderly population, both in Nigeria and worldwide, has resulted in a wide range of transformations, economic, social, in health, in leisure, and also in affective relationships, inside or outside the family. Similarly, the transition from adulthood to old age is a process that has generated new demands. Noticeable among them is the need for greater family support, with the main role of guaranteeing a reliable and safe environment in which the elderly can lead autonomous, independent and active lives (Souza et al., 2015).

The terms “elderly,” “old age” and “ageing” are used interchangeably, as they describe change in body physiology or attained level of social recognition culturally defined. According to the National Population Commission (NPC) (2014) the term elderly are characteristics of older persons 60 years and over, where the impact of ageing is most pronounced. Guler et al. (2017) define aging as change that significantly decrease the probability of survival caused by processes within the individual that are universal, inevitable and irreversible. This means that ageing is a multidimensional process of physical, psychological and social accumulation of change in a person over time. Pasco and Pnellas (2013) see ageing as a series of time related process occurring in the adult individual that ultimately bring life to a close. Dubey et al., (2011) old age means reduced physical ability, declining mental ability, the gradual giving up of role playing in socio-economic activities, and a shift in economic status moving from economic independence to economic dependence upon others for support. This implies that old age comes with inabilities that turns an individual from being independent to being dependent.

Due to the physical decline of the elderly, there is the need to provide then with supportive care. Kilic (2018) explains the concept of caring has gained importance especially in the past 20 years and there is an increasing amount of research on caring. Several qualitative and quantitative studies have been conducted in order to explore the meaning of caring. The current research seeks to examine the students’ perception on care of the elderly.

According to Okoye and Obikere (2005), attitude can be defined as either a positive or negative appraisal of a person, place, thing or event. Attitudes can be formed based on a person’s past and present experiences and can often be changeable. Attitudes contain cognitive, behavioural and affective constituents and are based on the beliefs and values of the individual (Matarese et al., 2013). According to Boswell (2012) poor knowledge about ageing has been linked to negative attitudes and lack of interest in working with older people. The perception towards the elderly forms their basis of interaction with other sectors of the society, especially the younger generation. Modernization and its accompanying changes in many societies produce sociocultural, economic and environmental milieu that are unique to each generation, for younger people, these challenges and opportunities includes positions that may lead to wealth and socio-political influence that are far above their parents and grandparents (Edeh, 2014). These perceptions can be form as a result of being exposed to modern events which knowledge is acquired through learning.

Undergraduate students of universities forms part of the younger generation. University education is provided for individuals after secondary education, as a form of tertiary education.

The changes and challenges of modern times especially on family values have it impact on the perception of the students. Dubey, Bhasin, Gupta and Sharma (2011) noted that, the elderly have been the biggest sufferers of this change of values and family system. Many of them feel that the attitude of younger generation towards them has undergone a tremendous change and become less satisfactory. It is therefore important to identify students’ attitudes and perceptions towards the elderly in contemporary society because how the elderly are perceived may well affect the way they are treated in the family it may serve as a guide in knowing the direction future programs and policies for the elderly should be focused.

There are several researches that focus on perception toward the elderly, most of these studies were carried out with students of the nursing profession but there is no study that focus on the perception of undergraduate students especially in Nigeria. The elderly population are part of the household and family that have the students and as spread across the country they live and take care of the aged in the home. The current study is of the view that the perception of the students on the care of the elderly will go a long way in understanding how the student feel about the aged and also show the ways taking care of the elderly population can be achieved through the perceptive of the younger generation.

Objectives of the Study

The main purpose of the study was to examine perception of undergraduate students of Michael Okpara University, Umudike on the elderly population in Nigeria.

The specific objectives of the study are to:

1. Determine feelings about the elderly population.
2. Identify how the students feel communicating with the elderly population.
3. Suggest where the elderly should live.
4. Suggest how to care for elderly with health challenges.
5. Suggest ways of improving the condition of elderly.

Research Hypothesis

The following null hypotheses will be tested at 0.05 level of significance:

$H0_1$: There is no significant difference in the mean response of students living with elderly person at home and those not living with elderly person at home on their feelings towards the elderly.

$H0_2$: There is no significant difference in the mean responses of students who have elderly persons in the family and those who does not have elderly persons in their family on how the feel communicating with the elderly.

$H0_3$: There is no significant difference in the mean responses of male and female studentson how the elderly with health challenges be cared for.

Methodology

The research design for the study was descriptive survey. The study was carried out in Michael Okpara University of Agriculture, Umudike. The population of the study consist of final year students of the school which is 5400 (source: students (MOUAU portal, as at 2017/ 2018 academic) the university is made up of 11 colleges. Two hundred and seventy final year student of Michael Okpara University of Agriculture, Umudike, makes up the sample of the study. The sample forms 5% of the population, five colleges from the University were randomly selected from 11 Colleges.

The instrument for data collection was Student Perception on Care of the Elderly Population Questionnaire (SPCEPQ). The questionnaire was validated by three lecturers from Department of Home Sciences/Hospitality Management and Tourism, College of Food and Applied Sciences Tourism, Michael Okpara University of Agriculture, Umudike. The reliability of the instrument was tested by administering the questionnaires to 20 respondents who are not covered by the sample of the study. Cronbach Coefficient Alpha was used to measure the reliability at which the value of 0.81 was obtained. The questionnaire was administered directly to the respondents by the researchers at the Information Communication Technology (ICT) training workshop organized by the University for final year students. Three days was used in the administration of the questionnaires, this is because the selected colleges have different days for their trainings. After introducing the objectives of the study and explaining the guide to filling the questionnaires, they were distributed to the students and was collected on the spot after filling. 270 questionnaires were distributed and 270 questionnaires were returned, this shows a 100% return rate. The data collected was analyzed as follows: the demographic distribution was analyzed with simple percentage, research questions 1,2,3,4 and 5 was analyzed with mean, hypothesis were tested with t-test at 0.05 significant level.

Decision rule: for the research questions a mean score of 2.5 and above was agreed and a mean score below 2.5 was disagreed. The null hypotheses were accepted at a value of $p < 0.05$ level of significance.

Results

Table 1: Demographic Distribution of Respondents

Demographics	**Distributions**	***f***	**%**
Sex:	Male	132	48.9
	Female	138	51.1
Students that have elderly person in the family:	Yes	195	72.2
	No	75	27.8
Students that live with elderly at home:	Yes	125	46.3
	No	145	53.7
Who should care for the elderly:	The elderly	27	10
	The children	69	25.6
	The family members	92	34.1
	The government	82	30.3

From table 1, the sex distribution of the respondents is 48.9% from male students and 51.1% for the female students. 72.2% of the respondents have an elderly person in their family, while 27.8% do not agree to have an elderly person in the family. For those who are living with an elderly person at home, 46.3% live with an elderly person at home, 53.7% do not live with an elderly at home. The percentage of students that feels that the elderly should take care of themselves amount to 10%, this forms the minimal number of respondents as 25.6% feels the children should take care of the elderly, 34.1% are of the opinion that the family members should take the responsibility of taking care of the elderly and 30.3 percent opt for government care of the elderly.

Table 2: Mean score of the feelings of students towards the elderly (*N* = 270)

S/N	Items	SA	A	D	SD	$\bar{X}$	Remark
1	Elderly are frail and sickly	67	121	39	43	2.8	Agree
2	Elderly are demanding of those around them	73	115	53	29	2.9	Agree
3	Elderly are difficult to communicate with	91	133	26	20	3.1	Agree
4	Elderly are narrow minded	91	123	32	24	3	Agree
5	Elderly are unable to make decision	74	117	62	17	3.4	Agree
6	Elderly are comfortable to live with	23	31	134	82	2	Reject
7	Elderly complain too much	74	113	54	29	2.9	Agree
8	Elderly are troublesome	68	118	44	40	2.8	Agree
9	Elderly demands so much from people around them	121	102	32	15	3.2	Agree
10	Elderly always wants people to do what they want	126	62	53	29	3.1	Agree

Table 2 presents the mean score of the feelings of students towards the elderly. The table show that there is a feeling that the elderly are frail and sickly (2.8). The students feel that the elderly are demanding of those around them (2.9), elderly are difficult to communicate with (3.1). There is also a feeling that the elderly are narrow minded (3), the elderly are unable to make decision (3.4). However, there is a rejection that the elderly are comfortable to live with (2). Additionally, the students considered the elderly to complain too much (2.9), the elderly are troublesome (2.8). The elderly are seen to demand too much from those around them (3.2) and they always want people to do what they what.

Table 3: Mean score of the feeling of communicating with the elderly

S/N	Items	SA	A	D	SD	$\bar{X}$	Remark
1	Communicating with elderly is difficult	91	109	52	18	3	Agree
2	Communication with elderly is boring	83	97	56	34	2.8	Agree
3	Communication with the elderly is lively	41	70	75	84	2.3	Disagree
4	Communicating with the elderly is too lengthy	86	119	33	32	3	Agree
5	Feelings, views and ideals are comfortably expressed when communicating with the elderly	34	62	92	82	2.2	Disagree
6	Young people do not like communicating with elders	93	105	35	37	2.9	Agree
7	Elderly people are conservative	82	122	45	21	3	Agree
8	Elderly people are secretive	89	128	25	28	3	Agree
9	Elderly people are suspicious	77	133	42	18	3	Agree
10	Elderly are better listeners	62	52	106	50	2.8	Agree
11	Elderly people talk too much	39	70	102	59	2.3	Disagree
12	Elderly people like to be listened to	93	108	46	23	3	Agree

Table 3 present the mean score of how students feel communicating with the elderly. The study shows that communicating with the elderly is considered difficult (3), communicating with the elderly is boring (2.8), there is an indication that the students feel that communicating with the elderly is not lively (2.3). Elderly people talk too much (2.3), feeling, views and ideas are not comfortably expressed when communicating with the elderly (2.2). The student feels that communicating with the elderly is too lengthy (3.3), elderly people are conserve (3), elderly people are secretive (3) and elderly people are considered suspicious (3). When asked if elderly people are better listeners, the students are of the agreement that the elderly are better listeners (2.8). Furthermore, the elderly people are seen as people who liked to be listened to (3).

Table 4: Mean score on living arrangement for the elderly

S/N	Items	SA	A	D	SD	$\bar{X}$	Remark
1	Elderly people should live alone	45	42	72	111	1.9	Disagree
2	Elderly person should have a domestic helper	95	96	41	38	2.9	Agree
3	An elderly person should stay with family member	122	74	42	32	3.1	Agree
4	An elderly person should stay in rented apartment	39	42	10	87	2.1	Disagree
				2			
5	Government should provide shelter for the elderly	133	85	34	18	3.2	Agree
6	Elderly people should live in an environment different from ours	26	66	81	115	2.1	Disagree
7	Elderly should be given their own space in the house	82	109	33	46	2.8	Agree
8	Government should provide housing policy for the elderly	124	67	43	36	3	Agree
9	Elderly people should live in an environment other than ours	21	47	73	129	1.9	Disagree

Table 4 shows the mean score of students' feeling on living arrangement that should be made for the elderly. There is a rejection of the suggestion that elderly people should live alone (1.9). However, there is acceptance of the suggestions that elderly person should have a domestic help (2.9), an elderly person should stay with family member (3.1), and government should provide shelter for the elderly (3.2). There is also a disagreement on elderly people made to pay their own rent (1.7). The study shows that there is a clear indication that students feel government should provide housing policy for the elderly (3).

Table 5: Mean score of how elderly with health challenges should be cared for (*N* = 270)

S/N	Items	SA	A	D	SD	$\bar{X}$	Remark
1	Provision of health education to the elderly and their family members by the government	115	132	13	10	3.2	Agree
2	Provision of social welfare scheme covering the elderly	120	123	12	5	3.3	Agree
3	Institutionalizing preventive services and early detection mechanism	124	113	22	11	3.3	Agree
4	Provision of home care services to the sick elderly population	102	112	15	41	3	Agree
5	Building capacity of family members through training	133	85	34	18	3.2	Agree
6	Organized routine physical activities for the elderly by family members	106	135	18	11	3.2	Agree
7	Elderly should be admitted into nursing home by family members and cared by professional caregivers	71	82	61	56	2.6	Agree
8	Provision of free medical care for the elderly by the government	121	96	50	13	3.3	Agree
9	Provision of adequate sanitary procedure by health officers	127	101	31	11	3.3	Agree
10	Sick elderly people should be separated from other members of the society	43	49	90	88	2.2	Disagree

Table 5 present the mean score of students' perception on how elderly with health challenges should be cared for. The table show that students feel that provision of health education to the elderly and their family members by the government is important to care for the elderly (3.2), provision of social welfare scheme covering the elderly (3.3). There is a general acceptance about the institutionalizing of preventive services and early detection mechanisms to care for the elderly (3). Provision of home care services to the sick elderly population have the students (3.2). additionally building capacity of family members through training was shown to be important (3.2), the admission of elderly into a nursing home by family members and cared for by professional caregivers and the provision of free medical care for the elderly by the government at respective mean score of 2.6 and 3.3 are accepted by the students. There was a rejection of the item; sick elderly population should be separated from other members of the society.

Table 6: Mean score on ways of improving the condition of the elderly (*N* = 270)

S/N	Items	SA	A	D	SD	$\bar{X}$	Remark
1	Should be given enough money on which to live, by family members, or government	121	102	36	11	3.2	Agree
2	Access to the best health care available	142	105	14	9	3.4	Agree
3	Adequate feeding	161	98	8	3	3.5	Agree
4	Provision of residual homes	67	124	42	37	2.8	Agree
5	Improve communication	84	154	20	12	3.1	Agree
6	Provision of adequate health care policy	163	61	31	15	3.3	Agree
7	Law should be enacted on the care and protection of the rights of the elderly	141	93	24	12	3.3	Agree
8	Family members should show better attitudes towards the caring for the elderly	84	151	22	13	3.1	Agree
9	There should be support centers for elderly	154	81	23	12	3.4	Agree
10	Provision of effective social welfare scheme for the elderly	151	83	24	12	3.4	Agree

Table 6 present the mean score of students' perception on ways of improving the condition of the elderly. There is a general acceptance of all the items presented in the table as ways to improve the condition of the elderly. These suggestions are: elderly should be given enough money on which to live by family or government (3.2), access to the best health care available (3.4), adequate feeding of the elderly (3.5), provision of residual homes (2.8), improve communication (3.1), provision of adequate health care policy (3.3), family member should show better attitudes towards the caring for the elderly (3.1), there should be support centers for the elderly (3.4) and provision of effective social welfare scheme for the elderly (3.4).

Testing the hypotheses

$H0_1$: There is no significant difference in the mean responses of students living with elderly at home and those not living with elderly at home on their feelings towards the elderly.

Table 7: t-test on the mean responses of student living with elderly and those not living with elderly at home on their feelings towards the elderly

Variable	*N*	Mean	Std. Deviation	Std. Error Mean	t-cal
Living with elderly	125	0.45	10.6	0.948	2.182
Not living with the elderly	145	0.56	10.1	0.839	

Note: Mean difference = 2.182; Degree of Freedom = (125 + 145 - 2) = (270 - 2) = 268

Decision Rule: Accept null hypothesis if calculated value is $p < 0.05$. the calculated value at is greater than the tabulated value of 1.960 at 0.05 level of significant, therefore, the null hypothesis that there is no significant in the mean responses of students living with elderly at home and those not living with elderly on their feeling towards the elderly is rejected.

H02: There is no significant difference in the mean responses of students who have elderly in their family and those who do not have elderly in their family on how they fell communicating with the elderly.

Table 8: t-test on the mean responses of student having elderly persons in their family and those not having elderly persons in their family on the feeling communicating with the elderly

Variable	*N*	Mean	Std. Deviation	Std. Error Mean	t-cal
Having Elderly in the family	195	3.6	10.6	0.759	2.08
Not having elderly in the family	75	1.9	4.7	0.543	

Note: Mean difference = 2.08; Degree of Freedom = (125 + 145 - 2) = (270 - 2) = 268

Decision Rule: Accept null hypothesis if calculated value is $p < 0.05$. the calculated value of 2.08 is greater than the tabulated value of 1.960 at 0.05 level of significant, therefore, the null hypothesis that there is no significant in the mean responses of students having elderly in their family and those not having elderly in their family on how they feel communicating with the elderly is rejected.

H03: There is no significant difference in the mean responses of male and female students on how the elderly with health challenges should be care for.

Table 9: t-test score on the mean responses of male and female students on how the elderly with health challenges be cared for.

Variable	*N*	Mean	Std. Deviation	Std. Error Mean	t-cal
Male	162	2.63	9.74	0.74	0.982
Female	108	2.24	5.32	0.62	

Note: Mean difference = 0.982; Degree of Freedom = (125 + 145 - 2) = (270 - 2) = 268

Decision Rule: Accept null hypothesis if calculated value is $p < 0.05$. The calculated value of 0.982 is greater than the tabulated value of 1.960 at 0.05 level of significant, therefore, the null hypothesis that there is no significant in the mean responses of male and female students on how should the elderly be cared for is accepted.

Discussion of Findings

After analyzing the data collected the following findings were made:

Feelings of students towards the elderly

The study sought to determine the feelings of students towards the elderly. To accomplish such mission the respondents were asked their perception about the elderly population as presented in table 2. The items of the table accepted are; elderly are frail and sickly, elderly are demanding, elderly are difficult to communicate with, elderly are narrow minded, elderly are unable to make decision, elderly complain too much, elderly are troublesome, elderly demand so much from people around them, elderly always want people to do what they want. There was a rejection of the item, elderly are comfortable to live with. These findings are in line with Riena and Balodi (2014) that states that, frequently, older adults are portrayed as more comical, stubborn, eccentric and foolish than other characters, they are often depicted as narrow minded, poor in health, foundering financially and unable to make decisions.

The study further reveals that there is significant difference in mean responses of students living with elderly person at home and those not living with elderly person at home on their feelings toward the elderly. This is in support of Asiret et al. (2017) that young people living and planning to live with their parents when they get old have a high regard than those who are not living or plan to live with any older adult. This finding is also in line with the submission of Lui, Norman and While (2013) which shows that students living with the elderly then to have positive attitude towards them.

How students feel communicating with the elderly population

In the bid to identify how the students feel communicating with the elderly population, the students were asked their feelings and the responses as presented in table 3 show that the students feel that: communicating with the elderly is difficult, communicating with the elderly is boring, communicating with the elderly is too lengthy, young people do not like communicating with the elderly, elderly people are conserve, elderly people are secretive, elderly people are suspicious, elderly people are better listeners and elderly people like to be listed to. On the contrary students feel that communicating with the elderly is not lively, feelings views and ideas are not comfortably expressed when communicating with the elderly and elderly people do not talk too much. The findings are in agreement with the submission of Njugana and Raruki (2012) that suggest that, effective barriers to effective communication with the elderly can be to different factors that shape the perception of the young people. These findings are also in line with Almeida and Ciosak (2013) that states that elderly people may present some difficulties in verbal communication, however, they may also be very aware and trained in decoding nonverbal communication, as they have already been through numerous experiences throughout their lives.

The study also reveals that there is a significant difference in the mean responses of students who have elderly persons in their family and those who does not have elderly persons in their family on how they feel communicating with the elderly. This finding is in line with Olt et al. (2014) which stressed that misunderstanding in communication can arise as a result of different cultural interpretations of the message.

Living arrangement made for the elderly

The study was carried out to suggest where the elderly should live, the result of the study as itemized in table 4 show that the students feel that an elderly person should stay with family member, government should provide shelter for the elderly and government should provide better housing policy for the elderly. The study also shows that the suggestions that the elderly people should stay in a rented apartment, elderly people should live in an environment different from ours and elderly people should be made to pay their own rent were rejected. These findings are in agreement with Okumagba (2011) which found that the family still account for large proportion of the support of the elderly in Nigeria. Also, the submission of Gurung and Ghimire (2014) that the importance of family rises with advance age as elderly need more support and help in their later life. During chronic illness or crisis, the demand may even exceed in everyday life of old people.

Care for elderly with health challenges

The students were asked how the elderly with health challenges should be cared for. The responses as itemized in table 5 shows that there is an acceptance of the following suggestions: provision of health education to the elderly and their family members by the government, provision of social welfare scheme covering the elderly, institutionalizing preventive services and early detection mechanism, provision of home care services to the sick elderly population, building capacity of family members through training, organized routine physical activities for the elderly by family members, elderly should be admitted into nursing home by family and cared for by professional care givers, provision of free medical care for the elderly by the government and provision of adequate sanitary procedure by health officers. However, there was rejection of the suggestion that sick elderly people should be separated from other members of the society. The study is show disagreement to the finance of health care as reported by Odaman and Ibiezugbe (2014) which argue that the elderly population bears more financial burden for health than that provided by their children, but at an older stage of life the children and extended family members gives more support. Additionally, the study shows that there is no mean difference in the mean responses of male and female students on how the elderly with health challenges be cared for. Agbogidi and Azodo (2009) collaborate the current findings by stating that promoting good health and mental well-being are important areas of responsibility to elderly. This also support the findings of Killic (2018) that there is no difference in the perception of male and female nursing students.

The study was carried out to suggest ways of improving the condition of the elderly. All the suggestions presented in table 6 were accepted as ways of improving the conditions of the elderly. The students were in agreement that the elderly should be given enough money in which to live by family or government, access to the best health care available, adequate feeding of the elderly, provision of residual homes for the elderly, improve communication, provision of adequate health care policy, law should be enacted on the care and protection of the rights of the elderly, family members should show better attitude towards the caring of the elderly, there should be support centers for the elderly and provision of effective welfare scheme for the elderly. The findings of the study are in support of Dubey et al. (2011) which holds that the elderly citizens are in need of urgent attention. Also, WHO (2009) suggest that provision of home health care services should be part of the health care system.

Conclusion

The perceptions of the younger generation on their care becomes imperative and is the focus of this study. The study has shown that:

i) Undergraduate students living with elderly at home have high regard and positive feelings towards the elderly population than those not living with elderly person at home.

ii) Undergraduate students who have elderly persons in their family have different perception than those who do not have elderly in their family on how to communicate with the elderly.

iii) Male and female students have same perception on how the elderly with health challenges should be cared for.

Recommendations

i) The community leaders and religious groups should be organizing programs and events that enables improve interaction between the elderly and younger populations.

ii) Government and community members should provide adequate housing policy and arrangement available to the elderly population.

iii) Elderly with health challenges should be adequately cared for through the provision of health education to family members and provision of free medical services by religious groups and communities.

iv) Laws should be enacted for the protection of rights of the elderly and should be enforced by communities and the government.

References

Abogidi,. J and Azodo, C (2009). Experiences of the Elderly Utilizing health services in Edo state. *The Internet Journal of Geriatric and Gerontology, 5* (2) 2009.

Adeokun, L.A. (2012). The Elderly All Over the World. *I.C.S.G. Monograph Series.* www.researchgate.com

Almeida, R. J. and Ciosak, S. I. (2013). Communication between the elderly person and the family health team: is there Integrality? *Educational Gerontology. 40* (1). 7-22.

Asiret, G. D., Kaymaz, T. T., Copur, E. O., & Akyar, I. (2017). Ageism Attitude towards Elderly: Young Perspective. *International Journal of Caring Sciences May–August 2017 Volume 10* | Issue 2| 819

Boswell, S. (2012).*Old People Are Cranky: Helping Professional Trainees' Knowledge, Attitudes, Aging Anxiety, And Interest In Working With Older Adults.* Available at https://doi.org/10.1080/03601277.2011.559864

Doherty M., Mitchell E. A. and O'Neil S. (2011). Attitudes of Health care Workers Towards Old People in Rural Population: A survery Using Konga Scale. *Nursing Research Practice; 2011*: 352627

Dubey, A., Bhasin, S., Gupta, N., & Sharma, N. (2011). A Study of Elderly Living in Old Age Home and Within Family Set-up in Jammu. *Stud Home Com Sci, 5*(2): 93-98 (2011)

Eboiyehi, F. A (2015). Perception of Old Age, it Implications for Care and Support for the Aged Among the Esan of South-south Nigeria. *The journal of International Social Research. Vol 8.* issue 36. Febuary 2015.

Edeh, C. (2014). An Assessment of Psychosocial Challenges Elderly in Ibagwa-Aka Community, Igbo Local Government Area of Enugu State. University of Nigeria, Nsukka.

Guler, D: Tugce T: Ebru O and Imatullah A (2017). Ageism Attitude towards Elderly: Young Perspective. *International Journal of Caring Sciences May- August 2017 Volume 10* | Issue 2| 819

Gurung, S. and Ghimire, S.(2014). Role Of Family In Elderly Care. School of health care and social services, Lapland University of Applied Sciences. http://web.ebscohost.com.ez.tokem.fi/ehost/pdfviewer

Kilic, M. (2018). Students' Perceptions of Nursing Care: The Case of a City of South Turkey. *International Journal of Caring Sciences January-April 2018 Volume 11*(1) Page 402. www.internationaljournalofcaringsciences.org

Liu, Y., Norman I.J., & While, A (2013) Nurses' attitudes towards older people: A systematic review. *International Journal of Nursing Studies, 50*(9) 1271-1282.

Matarese, M., Lommi, M., Pedone, C., Alvaro, R., & De Marinis, M. G. (2013). Nursing Student Attitudes Towards Older People: Validity and Reliability of the Italian Version of the Kogan Attitudes Towards Older People Scale. *Journal of Advanced Nursing, 69*(1), 175-184

National Population Commission (2014) The Elderly Population. National Population Commission Abuja.

Njugana V. and Raruki D. (2012). *Role of Communication Competence in Elderly Care. A Career Perspective.* www.internationaljournalofcaringsciences.org

Odaman, D. M. and Ibiezugbe, M. I. (2014). Health Seeking Behaviour Among the Elderly in Edo Central Nigeria. *International Review of Social Sciences and Humanities. Vol 7*, No. 1 (2014). pp 201 - 210. www.irssh.com

Okoye, U. O. and Obikere, D. S. (2005). Stereotypes and Perceptions of the Elderly by the Youth in Nigeria Implications for Social Policy. *The Journal of Applied Gerontology. Vol 24.* no 5, November, 2005.

Okumagba, O. P. (2011). Family Support for the Elderly in Delta State of Nigeria. *Study Home Economics and Community Science, 5*(1), 21-27.

Olt H., Jirwe M., Saboonchi P., Gerrish K., & Emami A. (2014). *Communication and Equality in Elderly Care Settings: Perceptions of First- and Second Generation Immigrant and Native Swedish Healthcare Workers*. Radcliffe Publishing. 2014;11:99–111

Pasco, L. and Pinellas, O. (2013). *Area Agency on Ageing* http://www.agingcarefl.org/what-isnormal-aging/;

Raina, D. and Balodi G. (2014). Agism and Stereotyping of the Older Adults. Scholars *Journal of Applied Medical Sciences: 2*(2c). pg (733 - 739).

Souza, A., Pelegrini, T. S., Ribeiro, J., Pereira, D., & Mendes, (2015). A Concept of Family Insufficiency in the Aged: Critical Literature Analysis. *Rev Bras Enferm. 2015; 68* (6): 864-73.

World Health Organization (2009). World health statistics 2019. Geneva:

PEER-REVIEWED CONGRESS PAPER

Sentient activity and gender difference in high school students' cooking for peers in Japan

Kaoru Kuroiwa
Ochanomizu University, Japan

Introduction

Gender equality is one of the most important issues for developing a sustainable society. Japan is no exception, such that the government is promoting resolutions to various issues, such as its low rank in the Global Gender Gap Index (Cabinet Office, 2020). Since the enactment of the Basic Act for Gender-Equal Society in 1999, efforts were exerted on the basis of the Basic Plan for Gender Equality. However, as repeatedly cited in national reports, the stereotype of gender role, such as women being in charge of housework, remains persistent (Cabinet Office, 2020).

In fact, the burden of housework is highly skewed as the responsibility of women, although their employment is promoted. A national survey entitled Survey on Time Use and Leisure Activities reported that a significant gap exists in the amount of time per day related to housework between males and females. In particular, the time spent on meal management was identified as the biggest gap between men (12 min per day) and women (1 hr and 28 min per day; Statistics Bureau, Ministry of Internal Affairs and Communications, 2017). This finding suggests that meal preparation could be the housework in which gender differences are most evident. Thus, examining housework related to meals or cooking deserves attention to examine gender stereotype in the care roles of women.

Conceptual framework

DeVault (1991) described the family meal preparation of women by identifying the activities for meal management and its invisibility, such as considering the preference and nutritional needs of children or the schedule of the family for dinnertime. According to DeVault (1991), paying attention to the family is not the innate ability of women. Instead, it is developed through a series of practices, such as observation of family practices, reflection, and trial-and-error.

Influenced by DeVault's (1991) work, Mason (1996) critically examines the concept of care as argued by previous research and conceptualizes an activity that tends to be performed by women (DeVault, 1991) and is rendered invisible by the dichotomy of care into labor and emotion. The activity considered to compose caring is *sentient activity*, which Mason (1996) defined as "thinking and feeling" (p. 27). The author cited examples of such activities as follows:

> [A]ttending to, noticing, hearing, being attuned to, seeing, constructing, interpreting, studying, exercising an interest in the needs, health, wellbeing, behaviours, likes and dislikes, moods, individuality, character, relationships […] of specific others [or] thinking through, working out, organising, planning,

Kuroiwa, K. (2022). Sentient activity and gender difference in high school students' cooking for peers in Japan. *International Journal of Home Economics, 15*(2), 245-255.

Kaoru Kuroiwa ✉ g2070305@edu.cc.ocha.ac.jp

> orchestrating relationships between oneself and others [… and] relationships between others. (p. 27)

In addition, Mason (1996) states that sentient activity is a kind of skilled activity and can be successfully performed through training to “develop skills in attentiveness to people’s needs, likes, preferences” (p. 30). However, the statement does not indicate that the experiences of training the skills would foster caring skills applicable to any person. The reason behind this notion is that “care is a relational activity” (p. 25) and developed through “negotiations” (p. 31) between a caregiver and a care receiver. However, relationships between the two are constructed not only through individual but also by social or cultural contexts.

Sentient activities can be observed not only in care by adults (DeVault, 1991; Mason, 1996) but also by children (Brannen et al., 2000). By regarding children as not only care receivers but also caregivers (Brannen et al., 2000), new insights may be gained regarding the processes through which children engage in and develop the skills related to sentient activities. Previous studies, such as Kaplan (2000), demonstrated that adolescents can be actors of cooking as a form of care or leisure. However, can sentient activities similar to those demonstrated by DeVault (1991) for cooking among women, be observed in the cooking activities of adolescents?

Food Practices of Adolescents as Social Interaction

Preparing family meals is one of the cooking activities of adolescents, which Kaplan (2000) described as self-care and care provided for families. However, the food practices, including cooking, would produce social interactions not only with families but also with friends (Neuman et al., 2017). Neely et al. (2014) examined the food practices of young people through a meta-analysis of related qualitative research and classified social relationships under the following categories: caring, talking, sharing, integrating, reciprocating, negotiating, and belonging. Neely et al. (2014) defined caring as “showing concern and empathy” (p. 53), which includes social interactions between friends, such as confirming whether friends have enough amount of food and purchasing food for friends. Reciprocating includes making or buying food as a means of repaying friends. However, the following interpretation by Neely et al. (2014) does not refer to the cognition of youth about friends: “Among friends, food practices were easy ways to reciprocate because making or buying food for friends was an inexpensive way to give something back” (p. 54). As Neely et al. (2014) also noted, studies that examined the food practices of young people in peer groups are few, whereas research that examined the cognition or attention of young people to specific others when cooking for or with peers is scarce.

Cooking Among Adolescents and Gender

Sentient activities tend to be gendered (DeVault, 1991). If sentient activities can be observed in the cooking of adolescents, would any gender difference be found?

The construction of gender through cooking is a theme addressed by many previous studies (e.g., Cairns et al., 2010; DeVault, 1991; Holden, 2013; Swenson, 2013). Although certain studies demonstrated frameworks that link women’s cooking to family care or men’s cooking to professional or leisure behaviors, such dichotomies between masculinity and femininity are shifting along with changes in society, such as the increased employment of women and participation of fathers in childcare (Szabo & Koch, 2017); For example, some studies considered cases wherein fathers viewed cooking as an aspect of care (Neuman et al., 2017); yet others explored scenarios wherein women were conflicted between pursuing cooking for pleasure and fulfilling their responsibilities with regard to family care (Cairns et al. 2010).

Given the family meal preparation of adolescents at home in terms of gender, a trend emerged in which girls do more than boys (Matsushima, 2007). Matsushima (2007) also presented that girls' attitudes toward cooking at home were more positive than those of boys. Moreover, parents of girls taught cooking more frequently than those of boys (Watanabe et al., 2020). However, Kaplan (2000), who conducted a study in the United States, argued that boys enjoyed cooking similar to girls and were proud of their development of related skills and independence.

Some scholars proposed that cooking as leisure was observed as a means for girls to hang out with friends (Adler & Adler, 1998). However, with the influence of foodie culture in recent years, studies suggested changes in the design of pretend kitchen toys, because they look professional and gender-neutral which targets not just girls but also boys (Fakazis, 2017). Therefore, cooking as leisure may become common for children regardless of gender.

Deslippe et al. (2021) identified social interaction within peer groups through food and its gender difference. The study found that girls prioritized the intentions of friends over their own and altered their eating behavior, whereas boys tended to prioritize their own intentions.

In summary, the frameworks for cooking and gender have been gradually changed, and the situation of adolescents may be also changed in a manner that cannot be captured by a simple dichotomy. Moreover, it is suggested that less research has explored sentient activities observed in the cooking of adolescents in terms of gender.

Context: Cooking for Friends and Valentine's Day in Japan

A culture that provides opportunities for some children to cook for peers is prevalent in Japan, such as the exchange of sweets on Valentine's Day. Although the event began as a social one among men and women through the sales promotion of confectionery manufacturers (Ogasawara, 1998; Yamada, 2007), it is currently practiced among children as peer culture in a different form. Therefore, prior to presenting the results, the characteristics of Valentine's Day in Japan are described briefly.

Ogasawara (1998) argued that the Japanese-style Valentine's Day featured three characteristics, namely, (1) obsession with chocolate as a gift; (2) one-way giving from women to men; and (3) courtesy chocolates actively given to work colleagues (p. 94). Yamada (2007) added a fourth point, that is, the perception that Valentine's Day is the (only) opportunity for women to express favor (p. 48).

However, the results of several surveys conducted by private sectors in recent years suggested that these characteristics may be changing. First, the notion that women are recipients of gifts is common, because friends have become the most common recipients as well as families. It was also reported that the number of men who become givers has increased. In relation to the third above-mentioned characteristic, many men feel that the number of gifts received at the workplace is decreasing. Finally, it is becoming less of an occasion for women to profess their love and more of a day to express gratitude to family or friends (Meiji Co., Ltd., 2021; Ezaki Glico Co., Ltd., 2016). Additionally, a recent survey reported that adolescents, especially girls, actively participate in this event by making homemade sweets (Meiji Co., Ltd., 2021). Activities that originally targeted adults now provide opportunities for children to make sweets for friends.

Aim

To summarize the discussion thus far, it is suggested that sentient activity, which constitutes care as proposed by Mason (1996), can be trained. However, the engagement of young people in sentient activities through cooking activities has not been explored well. Moreover, studies that explored the cooking activities of adolescents in peer groups in terms of caring and gender are few. Therefore, this study focuses on adolescents' cooking for/with peers and explores sentient activity and the difference in terms of gender.

Methods

Sampling process

To conduct group interviews for this study, high school students who cook or help with cooking at home were recruited. With cooperation from a teacher at High School A in Fukuoka City, who was previously acquainted with the author, the author successfully contacted a school administrator and a teacher at High Schools A and B, respectively. At High School A, the teachers distributed flyers to students, whereas a few of them directly invited students who were likely to meet the above-mentioned criterion. At High School B, the teacher invited students who were members of a club supervised by the teacher and met the criterion.

According to a report by Fukuoka City where the participants live, the attitudes of citizens toward stereotypes about gender roles are gradually disappearing. However, the report also stated that household chores continue to be borne by women. Moreover, approximately 65% and 50% of men and women, respectively, agreed with the notion that girls should be raised like girls and boys like boys, which creates concern about the gender reproduction (Fukuoka City, 2021). In this region, in which the caring role at home is yet required of women, exploring the observation, action, and cognition of adolescents through cooking activities is important for analyzing gender issues in Japan and presenting suggestions for the local area. Also, High School A is a public school in Fukuoka City, where the majority of students proceed to four-year universities, whereas others proceed to junior colleges or vocational schools. High School B is a private school in the same city and is known as one of the most academically advanced schools in Fukuoka Prefecture, where the majority of students proceed to four-year universities.

Group interview

The participants were 28 Japanese high school students (18 girls and 10 boys) with ages ranging from 16 to 18 years. Table 1 presents the details and uses pseudonyms for all participants. Twenty-five were from two-parent households, whereas three were from single-parent households. The participants were given 1,000-yen gift cards.

Six group interviews were conducted in 2021, where five were conducted in classrooms at High School A or B, whereas one interview was conducted via an online conferencing system (Zoom) due to COVID-19. Each interview comprised 3–7 students and lasted for two hours. All interviews were conducted in Japanese and recorded using IC recorders and video cameras.

However, the faces of the participants who declined recording with video cameras were excluded. The group interviews were semi-structured, and nearly the same questions were asked of each participant. Additional questions were asked based on responses. In addition to questions from the author, the participants were encouraged to discuss and interact among themselves.

The interview questions pertained to cooking at home, their views about preparing meals for the family, and their image of "men/women and cooking." Cooking activities for/with peers are focused; thus, the study mainly analyzes the conversations initiated by the following questions: "Do you cook outside of preparing meals for your family?" and "Have you had the opportunity to make sweets for your friends?"

Before the group interviews, the participants were asked to complete questionnaires on family structure, parents' occupation, frequency of household chores by the participants and their families, typical daily schedule, and future aspirations. In addition, they were asked to write a comment sheet after the interviews, which encouraged them to express their thoughts that they felt uncomfortable expressing in front of other students at the interviews or any statements they wanted to add or correct.

Table 1. Characteristics of the Sample

Name	Age	Gender	School	Name	Age	Gender	School
Miho	17	female	A	Shiori	17	female	A
Saori	17	female	A	Yui	17	female	A
Hitomi	17	female	A	Mao	17	female	A
Chihiro	17	female	A	Takuya	17	male	A
Saki	17	female	A	Natsuki	17	female	A
Akane	17	female	A	Daiki	18	male	A
Momoko	17	female	A	Kenta	17	male	A
Misaki	16	female	A	Syo	16	male	B
Kana	16	female	A	Yuta	17	male	B
Nana	16	female	A	Ryo	16	male	B
Haruka	16	female	A	Kazuya	16	male	B
Anna	16	female	A	Ayumu	16	male	B
Ami	16	female	A	Kaito	17	male	B
Mayu	16	female	A	Asahi	16	male	B

Source: Questionnaire before group interviews

Analysis

All recordings were transcribed. This study employs the inductive method approach. Segments of interview text were coded and aggregated into concepts, whereas emerging themes and relationships among concepts were analyzed. The comments of the participants cited in this study were translated from Japanese into English by the author.

Ethical consideration

Ethical approval was provided by the University. This study obtained consent from all participants and their parents.

Findings

When and to whom?

First, this study elucidates the forms of cooking activities in peer groups mentioned by the interviewees. The most frequent cases were making and giving sweets to friends during Valentine's Day. They also cited other occasions for making and giving sweets to friends, such as Christmas, a friend's birthday, and as a gift to a friend or club members. In addition, some participants referred to making sweets with friends when they hung out. Girls explained the majority of these activities.

The typical recipients of sweets were close friends, club members, and classmates, who were girls in many cases. Occasionally, girls gave sweets to boyfriends as well as male friends such as club members. Another case indicated that a male participant who belonged to a school sports club was given sweets by female team assistants. Although the cases of boys cooking and giving food to girls are few, Takuya is a case of making sweets in return for sweets given by a girl on Valentine's Day. Only one example of boys giving other boys homemade food or sweets was mentioned by a male participant, but it is an example of his friend.

The subsequent text describes sentient activities observed in the cooking activities of the participants. It is found that when the participants cooked for their friends, some of them did so as they considered and paid attention to specific others as sentient activities.

Process of deciding what to cook

The group interviews asked the participants about their processes of deciding which recipe to cook, which involves two elements, namely, sources of reference and criteria for selecting a recipe.

Sources of reference

When cooking for/with friends, the participants draw on diverse sources of information. The most frequently mentioned sources were social networking services (SNSs) such as Instagram, TikTok, and YouTube. Instagram (photo and video sharing SNS) and YouTube (online video sharing platform) present an advantage in that recipe videos can be saved (Chihiro). Moreover, these media present a rapid means to know which foods are popular. In fact, during the group interview, several participants were excited about food that was popular on Instagram. Moreover, many participants use the Internet to search for recipes.

Family members were also cited as sources of reference. For example, Saki was given a recipe for pastries that could be made using affordable ingredients and tools by a friend's father who was a pâtissier, and Saki made them with her friend.

In other cases, they referred to learning from their own experiences. Yui referred to food at cafes, whereas Natsuki combined ingredients based on her baking experience.

Criteria for selecting a recipe

However, when deciding which recipe to cook based on a large amount of information, a criterion for selecting a recipe is another significant factor. Their thought patterns could be classified into three main categories which sometimes overlap.

First, deciding based on external factors. For example, Hitomi made chocolaty sweets and gave them to friends, which followed the custom of giving chocolates on Valentine's Day. In this case, Hitomi selected sweets appropriate to the occasion. Another example is Ami, who emphasized the presentation of sweets.

Second, deciding based on the participants themselves. For example, several participants prepared food that they wanted to eat or selected recipes according to their cooking skills and then gave them to friends. Yui said, "I choose something that the person likes… hmmm… I also choose something that I can make without making mistakes."

Third, deciding based on the gift recipient. For example, Akane explained, "my friend can't eat [most of] the sweets because the friend is not allowed to consume sugar, so I made sweets without sugar [for the friend]." Akane prepared sweets with a consideration of the health of her friend. Saki directly asked what the recipient wanted, whereas Shiori presents a case in which the preference of a friend was not directly asked:

Interviewer:	How do you decide upon what sweets to make?
Shiori:	Presentation. Presentation [of sweet] and the taste preferences of the person to whom I'm going to give [the sweet].

Interviewer: Do you remember how you thought about it? Any episodes? Shiori: When I was baking cakes, I thought whether [the friend to whom I would be giving it] liked cream or chocolate.

Interviewer: Did you ask [your friend this question] directly? Or did you know your friend's preferences from your previous conversations?

Shiori: Yes. We had had a conversation before….

Similar to Shiori, Yui said, "Because we are usually together, I know their preferences…" As their cases demonstrate, some of the participants knew about the preferences of friends from past conversations and used this information in deciding which recipe to cook.

As mentioned above, this study identifies cases where the participants identified their friends' preferences or allergies based on previous conversations and prepared sweets based on these characteristics. This third point can be associated with examples of sentient activities, such as "hearing the likes and dislikes of specific others" or "attending to the health of specific others" (Mason, 1996, p. 27).

Organizing relationships

Sentient activity pertains to another aspect, that is, "organising relationships between oneself and others or between others" (Mason, 1996, p. 27). The group interviews revealed that this form of sentient activity can be observed in cooking activities for/with friends. For example, Mayu said, "with a special friend … when I go out with my friend, [I give sweets] or I give sweets to say thanks." Mayu often prepares and gives sweets to a particular friend and described their conversation as follows:

Mayu: I often give sweets to a particular friend, and I have a conversation like a skit with her every time… "Are you sure you didn't add poison to it [sweets]?" At first, I would say something like, "if you die, it means you were poisoned," but recently I haven't been able to meet her and express my affection toward her. So, I sometimes say something a little more affectionate, like, "I won't poison you because I will miss you if you die."

Mayu's comments reflected her intention to communicate her feelings to the other person and to enhance the relationship, such as "express my affection for her" and "to say thanks."

In the case of Kenta, he invited some friends since middle school during temporary school closure due to COVID-19 to make sweets that were popular on SNSs. In response to the question whether he hung out with friends in a similar manner before, Kenta answered as follows:

Kenta: We have been friends for quite a long time, so [we have been hanging out] ever since… I guess since the first grade of junior high school.

Interviewer: Did you invite friends, or did someone else plan it? Kenta: Probably me.

Interviewer: Do you remember why you invited them?

Kenta: Simply because I wanted to try to eat it [the candied fruits that were popular on SNS] (laughs).

Interviewer: Like "I want to try it, so let's make it together"?

Kenta: That's right (laughs).

Although the direct reason for Kenta was being interested in the sweets popular on SNS, another comment indicates that he regularly allocated time to gather with old friends and cooked together. This can also be considered an aspect of organizing relationships between self and friends and between friends.

Thus, from the comments of the participants, it is suggested that aspects of sentient activities can be seen in cooking activities of adolescents for/with friends.

“Homemade” and thinking about others

This section presents the case of Momoko. When talking about exchanging sweets for Valentine’s Day, Momoko jokingly said, “I wanted to give ready-made sweets [to my friends], but they threatened me into making sweets.” Chihiro recalled the conversation with Momoko and said, “Momoko told us that she would distribute chocolate bars and I really didn’t want her to do that.” As a result, Momoko ended up preparing homemade cheesecakes.

After another conversation, we returned to the topic. The girls, Akane and Saori, said that a purchased bar of chocolate may be the same as homemade chocolate as a finished product. However, Chihiro expressed the intention that homemade sweets would express the different extents of feelings invested in cooking.

Akane:	After all, because the chocolate is melted once and then molded again, wouldn’t it be the same in the case of a chocolate bar?
Saori:	I think so; that’s why I buy it.
Akane:	Isn’t it the same? Piece and melt [the chocolate], and fit it into the mold.
Saori:	You mean it’s different, right? Chihiro: (nodding)
Miho:	The feelings are different …
Akane:	Feelings are different? Should it take a lot of work?
Chihiro:	(nodding)

The case of Momoko can be interpreted as “being attuned to the needs of specific others” (Mason, 1996, p. 27), such as the request of bringing homemade sweets from Chihiro and other friends. In other words, the case of Momoko presents sentient activity as the other examples do in the previous section.

Notably, the narrative emphasized the food as being homemade. At the group interview, Miho explained the reason why she brought homemade sweets for Valentine’s Day, that is, her friends brought homemade sweets. Exchanging sweets with friends for Valentine’s Day seemingly denotes the aspect of working out the relationship between the self and friends. However, why it is desirable or common for the participants to make sweets for friends on Valentine’s Day?

Indeed, the makers enjoy certain advantages in preparing homemade sweets, such as making them in big batches a lot at a low cost (Chihiro and Akane) or decorating them as one wishes (Mayu). However, several participants noted the aspect of expressing (positive) feelings for the recipients. For example, in response to the question why they prefer homemade sweets, Misaki answered: “I think it would be more pleasing to receive a homemade one” whereas Asahi replied: “after all … it [a sweet made by a girl] is made with love (laughs).” These comments suggest that giving homemade sweets is considered as a means of showing positive emotions such as love and preferred by others. This is precisely different from sentient activity; whereas sentient activity assumes “specific others” (Mason, 1996, p. 27) as care receivers, these comments assume “general” others. It is suggested that a value that handmade food is preferable for many people may be shared among some participants.

Although the participants reflected the view that one can express one’s feelings for recipients by giving homemade sweets, others reflected the viewpoint in which one can express one’s feelings for recipients by giving sweets or other goods on the market. This view was often mentioned, however, mostly when talking about returns from boys to girls regarding gifts on Valentine’s Day and less in the context of sweets given by girls.

Buying commodities including ready-made sweets may be via thinking about specific or general others, similar to making sweets. For instance, Asahi stated that he would ask about the preferences of the (female) recipient and subsequently buy and give it to the recipient given that he can afford the item. Another male participant, Kenta said, "[it's] kind of like [sweets] would be memorable, but they would be consumed at once. cosmetics or other such materials last for longer periods… I think it makes them [girls] somewhat happy." The comment of Asahi exemplifies thinking about specific others as sentient activity, whereas the comments of Kenta exemplify thinking about general others.

However, buying commodities are not necessarily motivated by altruistic reasons. The circumstances of the giver, especially boys, also influence their actions. For example, several participants regardless of gender recognized that "boys lack experience in making sweets," "making homemade sweets seems difficult and troublesome," and "there is an image that making sweets is something girls do" as reasons for selecting commercial products. However, being a girl does not necessarily mean an extensive experience in making sweets as suggested by the following comments: "some of my female friends said that they didn't usually cook but that they were utilizing the opportunity [Valentine's Day] to try making sweets" (Natsuki); "I'm not a good cook, so I can only pour [the melted chocolate] into the mold. [...] I search how to make it [the sweet] look tasty, then I just pour [the melted chocolate] into the mold" (Ami).

Whether homemade or ready-made, giving sweets to friends may include the process of thinking about a specific other. However, the choice of the action as a result may be gendered. Moreover, they often distinguished the experiences of girls from the ones of boys, as the above-mentioned comments show. This point may be interpreted that the participants themselves produce discourses on cooking of adolescents and gender.

However, it can be pointed out that simply viewing this tendency as a gendered difference is insufficient. For example, two boys, namely, Takuya and Kaito, stated that they would like to return the favor by making sweets if girls exerted effort to prepare sweets.

Kaito:	But I think giving goods is a little different for me.
Interviewer:	Then, if you receive homemade sweets, do you think it is better to offer homemade sweets in return?
Kaito:	After all, many boys are not highly experienced in making sweets, so I think it is fine if they buy sweets from the market… But … if a girl exerted efforts in making sweets, I think I would have to make the same effort to make [sweets for them], too.

Takuya and Kaito had experience in making sweets, but they stated that they were not good at making sweets. Whether their willingness to respond to the effort by making sweets, despite lacking the ability, was due to their understanding of the actual difficulty involved in making sweets is a matter of speculation. Notably, however, diversity may exist among boys in terms of expressing thoughts about and attention to specific others.

Discussion

The results indicate that sentient activities can be observed in cooking for/with peers and that the experiences of adolescents regarding caring for others and engaging in sentient activities are possible even with friends. This notion suggests that the distinction between caring and leisure in cooking activities can be blurred. In other words, an aspect of care can be noted in cooking for friends, such as exchanging sweets with friends, which has been regarded merely as a social event for children. The contrast between enjoyment and caring for others may be associated with the findings of Cairns et al. (2010). However, the difference from women described by Cairns et al. (2010) is that cooking was considered a *responsibility* for women, whereas it may be recognized as a leisure activity for adolescents, which is likely related to the context of *choice*.

From the gender perspective, the results of cooking for/with peers were frequently mentioned by girls. Boys sometimes engaged in food practices with their friends, but only a minority of boys engaged in cooking for peers, which suggests that such discourses themselves may reproduce gender differences in cooking activities.

Moreover, although the boys' cooking for peers was not mentioned as part of the experience of the participant[*1], sentient activities were expressed in the girls' cooking for friends. However, organizing relationships between a male participant and friends is observed in cooking with friends. If cooking with peers as a means of organizing relationships with friends is shared among more boys, then this may be due to the foodie culture that appeals to adolescents regardless of gender (Fakazis, 2017) and the development of SNSs, as hinted by the examples cited. However, this point needs to be examined by future studies.

Finally, the emerging theme from the narratives of the boys on repaying Valentine's Day gifts is that although sentient activities (e.g., thinking about the preferences of the recipient) can be seen, the manner of expressing these activities was frequently referred as buying a commodity. Buying commodities should also be an available choice for girls, one of the norms of meal preparation at home, that is, food should be homemade (Murase, 2013), may have been subconsciously influence the view toward the cooking of girls. Moreover, the result can be considered that the trend and discourses created by peers, where girls tend to bring homemade sweets, would contribute to gender reproduction. Valentine's Day in Japan has spread from adults to children and adolescents; however, adolescents may maintain this social event as part of their culture, which indicates an "interpretive reproduction" (Corsaro, 2005, p. 18).

This study has its limitations. First, the results cannot be generalized across other populations due to the limited sample, schools, and area. Second, as previously mentioned, diversity among boys/girls is expected. For example, boys who cook for peers will be potential subjects for future research. Third, by conducting group interviews, a possibility exists that a few of the comments may have been influenced by other participants. This point was considered as much as possible when explaining the study to the participants and during the interviews; however, identifying all influences by peers is difficult.

This study has provided new insights into the dichotomy between children and adults in caring, between care and leisure in cooking, and between boys and girls in cooking. Moreover, this study has attempted to make a contribution to the dissolution of gender stereotype of the responsibility of caring for women and to the achievement of gender equality.

Note[1]: A participant said that his male friend made cookies and decorated them as they looked like his friend's favorite anime character. This example indicates boys' cooking for friends may include sentient activity, that is, attending to the likes of a specific other.

References

Adler, P. A., & Adler, P. (1998). *Peer Power: Preadolescent Culture and Identity*. Rutgers University Press.

Brannen, J., Hepinstall, E., & Bhopal, K. (2000). *Connecting Children: Care and Family Life in Later Childhood*. Routledge Falmer.

Cabinet Office. (2020). Daigoji-danjyo-kyoudou-sankaku-syakai-kihon-ke ikaku [The Fifth Basic Plan for Gender Equality] [White paper]. h ttps://www.gender.go.jp/about_danjo/basic_plans/5th/pdf/print.pdf

Cairns, K., Johnston, J., & Baumann, S. (2010). Caring about Food: Doing Gender in the Foodie Kitchen. *Gender & Society, 24*(5), 591–615. https://doi.org/10.1177%2F0891243210383419

Corsaro, W. A. (2005). The Sociology of Childhood (5th edition). Sage. Deslippe, A. L., Tugault-Lafleur, C. N., McGaughey, T., Naylor, P.J., Le Mare, L., & Mâsse, L. C. (2021). Gender plays a role in adolescents' dietary behaviors as they transition to secondary school. *Appetite, 167*, Article 105642. https://doi.org/10.1016/j.appet.2021.105642

DeVault, M. L. (1991). *Feeding the Family: The Social Organization of Caring as Gendered Work*. The University of Chicago Press.

Ezaki Glico Co., Ltd. (2016). Valentine-jijyo 2016 Chousa [Survey for Valentine's Day 2016] [Press release].

Fakazis, E. (2017). Cool kids cook: Girls and boys in the foodie kitchen. In M. Szabo & S. Koch (Eds.), *Food, Masculinities, and Home: Interdisciplinary Perspectives* (pp. 147–165). Bloomsbury.

Fukuoka City. (2021). Fukuoka-shi danjyo-kyoudou-sankaku-kihon-keika ku houkokusyo: Dai-sanji-keikaku-kikan heisei-28-nendo–reiwa-2-nen do [Report on Fukuoka City Basic Plan for Gender Equality: Third Plan Period FY2008–FY2020] [White Paper].

Holden, T. J. M. (2013). The Overcooked and Underdone: Masculinities in Japanese Food Programming. In C. Counihan & P. van Esterik (Eds.), *Food and Culture: A Reader* 3rd edition (pp. 119–136). Routledge.

Kaplan, E. B. (2000). Using Food as a Metaphor for Care: Middle-School Kids Talk about Family, School, and Class Relationships. *Journal of Contemporary Ethnography, 29*(4), 474–509. https://doi.org/10.1177%2F089124100029004003

Mason, J. (1996). Gender, Care and Sensibility in Family and Kin Relationships. In J. Holland & L. Adkins (Eds.), *Sex, Sensibility and the Gendered Body* (pp. 15–36). Palgrave Macmillan.

Matsushima, E. (2007). Hahaoya to chichioya no chouri-taido ga kazoku no kyousyoku to chuugakusei no chouri-taido ni ataeru eikyou [Influence of Parents' 'Cooking Attitude' on Junior High-School Students'' 'Cooking Attitude' and Their 'Perception toward Eating Together with Family']. *Journal of home economics of Japan, 58*(12), 743-752. https://doi.org/10.11428/jhej.58.743

Meiji Co., Ltd. (2021). Chocolate ni kansuru chousa-kekka [Results of the survey into chocolate] [Press release]. https://www.meiji.co.jp/corporate/pressrelease/2021/0108_01/

Murase, K. (2013). Ryouri ha "kanryaku-ka" shiteirunoka: kateiryouri wo meguru kankyo to kihan wo chuushin ni [Is Cooking "Simplified"?: Focusing on the "Environment" and "Norms" of "Home Cooking"]. In T. Morieda (Ed.), *Ryouri surukoto: Sono Henyousei to Syakaisei [Cooking: Transformation and Sociality]* (pp. 132–151). Domesu Publishers Inc.

Neely, E., Walton, M., & Stephens, C. (2014). Young People's Food Practices and Social Relationships. A Thematic Synthesis. *Appetite, 82*, 50–60. https://doi.org/10.1016/j.appet.2014.07.005

Neuman, N., Gottzén, L., & Fjellström, C. (2017). Masculinity and the sociality of cooking in men's everyday lives. *The Sociological Review, 65*(4), 816–831. https://doi.org/10.1111%2F1467-954X.12420

Ogasawara, Y. (1998). *OL tachi no resistance: Salariman to OL no power game [The "Resistance" of Office Ladies: Power Games between Salarymen and Office Ladies]*. Chuo Koron.

Statistics Bureau, Ministry of Internal Affairs and Communications. (2 017). Summary of Results of Survey on Time Use and Leisure Activities 2016 [White Paper]. https://www.stat.go.jp/english/data/shakai/2016/pdf/timeuse-b2016.pdf

Swenson, R. (2013). Domestic Divo? Televised Treatments of Masculinity, Femininity, and Food. In C. Counihan & P. van Esterik (Eds.), *Food and Culture: A Reader* 3rd edition (pp. 137–153). Routledge.

Szabo, M., & Koch, S. (Eds.). (2017). *Food, Masculinities, and Home: Interdisciplinary Perspectives*. Bloomsbury.

Watanabe, S., Yoshii, E., & Akamatsu, R. (2020). Katei de kodomo ni chouri wo oshieru hogosya no tokucho [The characteristics of parents cooking with their children at home]. *The Journal of the Japanese Society of Health Education and Promotion, 28*(1), 25–33. https://doi.org/10.11260/kenkokyoiku.28.25

Yamada, H. (2007). Valentine Chocolate ha dokokara kitanoka [Origins of "Valentine chocolate"]. *Journal of Humanities and Natural Sciences, 124*, 41–56. http://hdl.handle.net/11150/481

PEER-REVIEWED CONGRESS PAPER

Smartphone use among selected Filipino elderly

Mary Justine Clarise A. Trinidad & Abby Pauline M. Castillon
University of the Philippines, the Philippines

Abstract

This is a descriptive, qualitative study that aimed to discuss the beliefs, attitudes, motivations, and experiences of the elderly in using smartphones. Thirty purposively sampled Filipino elderly were interviewed, and data collected were examined through content analysis. Results revealed that Filipino elderly are generally satisfied with using smartphones as they perceive it to be important and useful. Their main reason for engaging in this technology is its capability to connect them with their loved ones, thus, their regular activities when using it are calling and messaging. However, despite the innovative features of smartphones, they are still contented with using mostly the call and messaging features of the device only. They also find touchpads challenging to use. Nevertheless, they are still willing to continue using it. As the elderly adopt smartphones, this study recommends for smartphone developers to consider producing those with physical features and software that are more user-friendly for the elderly. This may encourage the aging consumers to explore the other useful features of smartphones, which can keep them abreast with the advancing technology at present times, especially during this COVID-19 pandemic, digitization of public and private transactions, and other work-related tasks were strengthened in the Philippines.

KEYWORDS: ATTITUDES, BELIEFS, ELDERLY, MOTIVATION, SMARTPHONE USE

Introduction

Due to globalization, technology continues to advance. Smartphones, as one among these technologies, provide a wide variety of services that can support and ease some common activities in everyday living, such as text messaging, writing emails, internet surfing, playing games, photography, and writing in calendars (Kurniawan et al., 2006). However, despite the numerous services that this technology provides, its use still entails both positive and negative effects on its users. Its drawbacks include reduced face-to-face interactions among people (Rotondi et al., 2017), possible visual blurring, dry eyes, and pain in the neck, back, and shoulder (Miakotko, 2017). Nevertheless, smartphones allow users to learn new things and have access to various materials online at any time. It can be used for searching information, and has an impact on the psychological mind of the users as it can be a means to escape reality in a good way—through playing games, reading electronic books, watching videos, among others. Using smartphones can serve as an instrument to relieve stress from a busy work life (Sarwar & Soomro, 2013).

Trinidad, M. J. C. A., & Castillon A. P. M. (2022). Smartphone use among selected Filipino elderly. *International Journal of Home Economics, 15*(2), 256-267.

Mary Justine Clarise Trinidad ✉ maamonoy1@up.edu.ph

With the numerous benefits offered by smartphones, more and more consumers engage in their use. A study about smartphone ownership in 40 different countries around the world including the Philippines shows that in 2015, 45% of Filipinos own a smartphone (Poushter, 2016). In 2019, this number grew as 86.8% of Filipino households were reported by the Philippine Statistics Office or PSA (2020) to be owning cell phones. Specifically, based on the statistics by Statista Research Department (2021), there are 14% of the overall Filipino population aged 55 and above who use the internet, assuming that this is through smartphones. This age group includes the elderly. The “elderly” is defined by the Organisation for Economic Co-operation and Development (n.d.) as people who are aged 65 and over. In the Philippines, they are considered those who are aged 60 and over under the Republic Act No. 9994, also known as the Expanded Senior Citizen Act of 2010. The terms “seniors”, “elders” and “older adults” are also used to denote adults who are aged 60 and above.

The number of the elderly in the Philippines continue to rise over the years. According to the latest report of the PSA in 2015, there were 7,550,000 Filipino elderly, which is 7.5% of the total population.

This data, therefore, implies that in 2020, approximately 1,000,000 Filipino elderly owns a smartphone. From a home economics perspective, their attitudes towards the device, as well as their beliefs, motivations, and experiences in using it are important to explore. That is why in different parts of the world, the elderly’s adoption of smartphones has already become an interesting topic among researchers.

Smartphones have a variety of features that can help improve the quality of life of the elderly in different areas like health care and independent living. As found in a study, the use of smartphones among this older group of people provides experiences of reduced isolation, closer ties to family and friends, simplified commerce, and a lot more (Fernandez-Ardevol, 2010).

In terms of motivation, in the study by Kurniawan et al. (2006) in the United Kingdom, it was noted that the main reasons for the elderly in using mobile phones were for emergency, security, and safety purposes. Renaud and Biljon (2010 as cited in McMurtrey et al., 2013) also identified the possible reasons for seniors in using smartphones, which are: social influence, safety, security, autonomy, relatedness, and usefulness. In addition, McMurtrey et al. (2013) analyzed different researches about the elderly’s consideration to use smartphones, and reported the following as the reasons: enjoyment, self-expression, safety and security, self-actualization, relatedness, and freedom and autonomy; and because of usefulness, influence of other people, interesting features, and affordability.

Researches about the barriers and challenges of the elderly in using smartphones were also explored. According to Portz et al. (2019), older people want to adapt to new technologies, but they struggle in learning to use smartphones. They were found to struggle with their senses of touch, hearing, and reading in using these smart gadgets (Perissinotto, 2018 as cited in Lee, 2018). Meanwhile, Vaportzis et al. (2017), divided the elderly's barriers to using smartphones into categories: lack of instruction and guidance, lack of knowledge and confidence, health-related barriers, and cost. Smith (2014), also had the same conclusion that most seniors may have physical challenges in using smartphones and may need some assistance in learning to use these mobile phones. In addition, another study stated that aside from health-related issues, some of the elders lack comfort and familiarity in using the technology (Anderson & Perrin, 2017). Past research has shown that the capabilities of older people decrease as they grow old, and the changes in their capability can affect them in using electronic devices like mobile phones (Roupa et al., 2010). Research also showed that many seniors are not comfortable using computer technology (McMurtrey et al., 2011), hence it is not surprising that they are uncomfortable using smartphones. It was also found that most mobile phones are not internally designed for seniors, but for younger users (McLead, 2009 as cited in McMurtrey et al., 2013; Subramanyam et al., 2018). The use of smartphones can therefore become frustrating and intimidating for the elderly (Subramanyam et al., 2018).

More and more studies on smartphone use continue to be conducted as the world also continues to advance its technology. However, unlike in foreign countries where studies on smartphone use among the elderly are abundant, there is a minimal study about this in the Philippines. It is necessary to explore this topic in the Philippine context, especially since before and during the COVID-19 pandemic, more transactions with public and private institutions were strengthened in the country (Villanueva, 2022), and this includes banking services, claiming of pensions, and online shopping. Elderly people should be empowered to be more productive and independent in doing various tasks that involve the use of smartphones. Thus, this study explored the use of smartphones among selected Filipino elderly. It describes their beliefs, attitudes, motivations, and experiences in using the device. Specifically, it aimed to answer the following research questions:

1. How does the Filipino elderly perceive the use of smartphones?
2. Why are they motivated to use smartphones?
3. What are their experiences in using the device?

Through the results of this study, the elderly, especially those who are just adopting their smartphones, may be assisted because they will be made aware of the common experiences of the other elderly who are using smartphones too. Smartphone developers may also be informed of the designs that they could consider in future smartphone developments that will be more elderly-user-friendly.

Theoretical Framework

This study is mainly based on the Theory of Planned Behavior (TPB) by Ajzen (2019). TPB is illustrated in Figure 1. The theory states that the beliefs—behavioral, normative, control—of individuals influence their attitudes towards certain behavior, their subjective norms, and perceived behavioral controls, which consequently influence their intentions to perform that behavior, and finally cause them to do it. In this model, behavioral beliefs are defined as the "subjective probability that the behavior will produce a given outcome or experience," normative beliefs as the "perceived pressure to engage in a certain behavior exerted by […] individuals or group […]," and control beliefs as the "control factor to impede or facilitate performance of the behavior […]" (para 1). The attitudes toward the behavior refer to the willingness to act a certain behavior. Other references view the person's beliefs and intentions to be dimensions of attitude (Evans et al., 2006, Pratkanis et al., 2014), but for this study, following the TPB, these factors are viewed separately from attitudes. With regards to the other variables presented in the model, the subjective norm is described as the perceived influence of other people or groups of people to act in a certain way, while perceived behavioral control is one's perceived capability of acting. Lastly, behavioral intention is the individual's inclination to do the action (Ajzen, 2019).

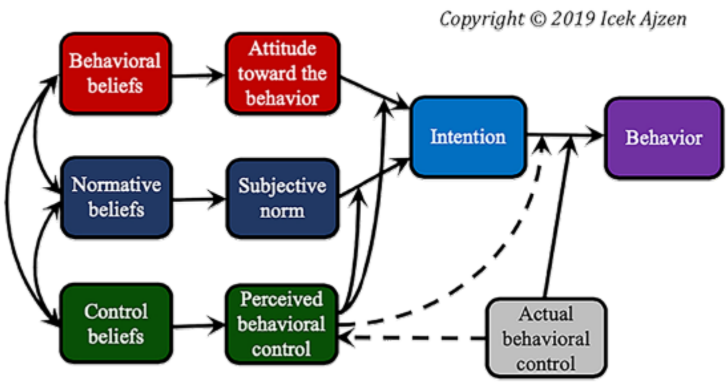


Figure 1 Theory of Planned Behavior Diagram (Ajzen, 2019)

In the context of this study, the behavior considered is the use of smartphones by the elderly. Based on the TPB, the researchers assumed that understanding the smartphone use of the elderly involves determining and understanding first their related beliefs and attitudes. Their beliefs are based on their opinions about the importance of using smartphones, their perceived risks of using them, while their attitudes focus on levels of satisfaction or dissatisfaction in using the device, and their intentions of continuing its use in the future. Meanwhile, their motivation is described as the internal and external factors—such as normative beliefs or influence of other people, and control beliefs or how they see themselves as successfully able to use smartphones—that drive them to use the device. Their attitudes and motivations then lead to explain their experiences, which involve challenges and other practices in using smartphones.

Aside from the TPB, this study is also guided by the Technology Acceptance Model or TAM by Davis (1989). TAM states that an individual's engagement in using technology is influenced by their perceived usefulness and their perceived ease of use of that technology. Perceived usefulness is one's belief in the technology's functional assistance, while perceived ease of use is the belief on the technology being effortless to use. Based on this model, this study analyzes the perceived usefulness of smartphones as part of the elderly's beliefs. On the other hand, the perceived ease of use is included in exploring their experiences in the initial and regular use of the device.

Methodology

This study is descriptive research, which used a qualitative research design. Qualitative data were extracted from the closed- and open-ended questions from a semi-structured interview. A purposive sampling technique was used to select 30 elderly Filipinos. The study focused on senior citizens in Quezon City who use smartphones. The elderly living in urban areas like Quezon City were investigated due to the rapid development of technology in urban areas. In the latest report by the Philippine Statistics Authority report in 2015, there are 851,214 senior citizens in the National Capital Region. Among the 17 local government units, Quezon City was recorded to have more than 300,000 Senior citizens.

As shown in Table 1, majority of the participants were males with a total of 16 participants (53.33%) while 14 participants (46.66%) were females. Majority of the participants were college graduates (53.33%) while the remaining were high school graduates (26.66%). Majority of them were also aged between 60–65 years old (76.66%). The range of majority of the participant's monthly income was between Php 7,890.00 (30%) and Php 31,560.00 (30%). Meanwhile, Table 2 presents the smartphone used by the respondents, and the period they started using their smartphones. As shown, majority of the elderly use Android as a type of smartphone (73.33%). On the other hand, 23.33% have also been using their smartphones for only one to five years, while 43.33% of the respondents for six to 10 years, and 6.66% for more than 10 years.

Table 1 Demographic Characteristics of Filipino Elderly-Respondents

Characteristics	Category	*f* (*n* = 30)	Percent (%)
Sex	Male	16	53.33
	Female	14	46.70
Age	60–65 years old	23	76.70
	66–70 years old	5	16.70
	71–75 years old	2	6.70
Highest Educational Attainment	High school graduate	8	26.70
	College graduate	16	53.33
	Postgraduate	6	20.00
Monthly Income	Php 7,890–15,780	9	30.00
	Php 15,781–31,560	9	30.00
	Php 31,561–78,900	7	23.33
	Php 78,901–118,350	3	10.00
	Php 118,351–157,800	1	3.33
	Above Php 157,801	1	3.33

Table 2 Types and Period of Use of Smartphones among the Filipino Elderly Respondents

	Category	*f* (*n* = 30)	Percent (%)
Type of Smartphone	Android	22	73.33
	iOS	7	23.33
	Windows	1	3.33
Period of use	1–5 years	15	50.00
	6–10 years	13	43.33
	More than 10 years	2	6.67

To obtain data from the respondents, an interview guide was developed at first, which is available in both English and Filipino languages. It contains a mix of closed- and open-ended questions that asked for the respondents' demographic information, as well as their beliefs, attitudes, motivations, and experiences in the use of smartphones. The different parts of the instrument are as follow:

1. Letter of Consent—This part of the instrument explains the protocols of the study, such as its objectives, benefits and risks in participating in the interview, names of researchers and their contact information, and informed consent form.
2. Demographic Profile of Respondents—This first section in the interview guide contains closed-ended questions on the demographic information of the respondents, the type of smartphones, and the period of use of smartphones.

3. Beliefs of Elderly on Smartphone Use—This part asks questions about their opinions and beliefs about the importance and risks of using smartphones.
4. Attitudes of the Elderly on Smartphone Use—This section contains questions about their feelings and preferences related to using their smartphones.
5. Motivations of Elderly on Smartphone Use—This part generally asks about their reasons for using smartphones.
6. Experiences of Elderly on Smartphone Use—This section includes questions about their regular activities when using smartphones, and their experiences with ease of using the device.
7. Intentions of Elderly for Future Smartphone Use—This part generally asks for their willingness to continue using smartphones in the future. Based on the Theory of Planned Behavior, intentions towards a certain behavior are encountered first by an individual before their actual performance of the behavior (Ajzen, 2019), but for this study, questions about the respondents' intentions are put last because they are already engaged in using smartphones during the conduct of the study.

In collecting data, target respondents who are attending a Zumba session at the Quezon City Memorial Circle were invited for the interview after their activity. The informed consent was explained to them and their interview sessions were then set. Each interview session took up approximately 30 minutes. The collected data then were subjected to transcription and content analysis to determine patterns or themes related to the respondents' beliefs, attitudes, motivations, and experiences in using smartphones.

Throughout the conduct of the study, ethical considerations were performed by the researchers. No respondent was forced to participate in this study. They were fully informed of the protocols of this study, were given sufficient time to ask questions or clarifications before the interview, and were asked to sign an informed consent form. All the information and responses they provided were carefully recorded and anonymity was applied when reporting and analyzing the results. The recordings and database of responses are carefully stored. In terms of reporting, no results were manipulated and fabricated. All of these were based on the answers of the respondents from the interview. Ideas and information from related literature that were useful in data analysis were also cited appropriately.

Results and Discussion

The findings of the study are summarized as follows: the beliefs of the elderly in using smartphones, as well as their related attitudes, motivation, and experiences.

Beliefs of the Filipino Elderly on Smartphone Use

The results presented in this section provide the answer to the first research question, "How do the Filipino elderly perceive the use of smartphones?" Majority of the respondents (76.67%) believe that owning and using smartphones are important and useful. Many among them (63.33%) see smartphones to be useful for communication purposes. One of them said, "Maganda kasi madali na nako-contact mga tao sa ibang bansa" ("It is good, because I can easily contact other people who live in other countries." -Respondent #1). This result shows interestingly shows that the Filipino elderly value the connection with others and their loved ones, especially those in distant places. Aside from this response, some of them (16.67%) also believe that smartphones are an emerging necessity because of the advancing technology. In connection with the previous response, smartphones allow connection between persons from distant locations, and they can be very handy during emergencies, as explained by one respondent. However, despite the perceived usefulness of smartphones, there are still some elderly who consider the use of smartphones to bring some risks to its users. These perceived risks are summarized in Table 3.

Table 3 Perceived Risks of Filipino Elderly in Using Smartphones

Perceived Risks	*f* (*n* = 30)*	Rank
There are no perceived risks in using smartphones.	13	1
Meeting new people online can be dangerous.	12	2
Downloading images and videos from the internet can be dangerous.	6	3.5
Vision can get more blurry.	6	3.5
Online advertisements can ask for personal confidential information.	4	5.5
Saving passwords in mobile applications can be hacked/ leaked.	4	5.5
No response	1	7

Note: *multiple responses

As shown in the table, 13 respondents see no dangers in using smartphones, but a majority (*n* = 16) still perceive smartphone use to pose some risks. These risks include using social media like Facebook where they can meet new people (*n* = 12), downloading malicious multimedia from the internet (*n* = 6), and getting blurry vision (*n* = 6). According to one respondent, “Pakiramdam ko tumataas grado ng mata ko” (“I feel like my eye grade is increasing.” Respondent #14). Some respondents also find that advertisements can ask for personal confidential information (*n* = 4) and that saving passwords in mobile applications can be hacked (*n* = 4). However, despite these perceived risks, the respondents still said that the benefits that they see in using their smartphones outweigh these risks and that they still find the smartphone generally safe to use, also because they mostly use their smartphones for communication via call and text and they do not frequently use it daily.

Attitudes of the Filipino Elderly on Smartphone Use

This section of the results and discussion also present answers to the first research question, “How do the Filipino elderly perceive the use of smartphones?” With the previous results that majority of the respondents perceive smartphones to be useful for communication purposes (63.33%), the most liked features of the elderly were calls (*n* = 30) and messages (*n* = 28). Few of them even mentioned Facetime and iMessage which are built-in applications on iPhone. Very few of them said that they like other features related to using social media platforms such as Facebook and Viber (*n* = 3), although these tools also enable communication with others. These results show that the Filipino elderly are not very interested in the unique features of smartphones, but undoubtedly on call and text features, which are present even in the analog models of cellular phones. A possible reason for the limited liked features of smartphones is the presence of characteristics in their devices that hinder their good experiences in using them. According to the respondents, they dislike the following in their smartphones: slow system due to updates (*n* = 8), short battery life (*n* = 4), the complexity of using applications (*n* = 3), and too many advertisements when using applications online (*n* = 2). It is also noted that some respondents see no problems in using their phones (*n* = 13).

According to one of the respondents, “Mabilis ma-low bat pag nagda-download at pag marami nang naka-install na apps.” (“My phone's battery gets drained fast when I make downloads and when there are many applications installed already.” Respondent #10). Another respondent said “Minsan mag hang. Pag tumagal na nagha-hang na lang.” (“Sometimes it hangs, the phone hangs when it is being used for longer period.” Respondent #25). Some of the participants said that the smartphone tends to run slow if there is a system upgrade (*n* = 8). There were participants who also said that it was hard to type when sending a text message, because there is no keypad, or if there is one, it is too small. One participant said, "Mabagal mag type lalo na pag mahaba sinasabi." ("It takes long to type especially if my message is too long." Respondent #24). These results can be supported by the study of Leung et al. (2012), which examined the impact of mobile phone design on users and concluded that smartphone software interfaces were not particularly elderly friendly mostly because of the users' diminishing cognitive abilities like speed and accuracy, information processing, and reaction time. In addition, in the study of Lin et al. (2009) the hardware interface of phones was examined, and it was found that the smartphone was a problem for older people, because of diminishing physical characteristics evidenced by the blurriness of vision and fewer finger dexterity.

Despite the perceived risks and disliked characteristics that the elderly have in using their smartphones, they still have a generally high satisfaction level in using them. Their satisfaction levels are presented in Table 4. As shown, the respondents were extremely satisfied (33.33%), very satisfied (33.33%), and somewhat satisfied (26.66%) with using a smartphone. Only few participants were somewhat dissatisfied (3.33%) and very dissatisfied (3.33%) mainly because they use smartphones for communication purposes only. According to one satisfied respondent, by using the smartphone, he has "more apps to download, [more] exploration of knowledge, and faster communication." (Respondent #10). Another respondent shared that he is satisfied because he finds the smartphone very functional, while another participant said that it is useful in communicating with family members.

Table 4 Level of Satisfaction in Smartphone Use Among Filipino Elderly

Level of Satisfaction	*f* (*n* = 30)	Percentage (%)
Extremely Satisfied	10	33.33
Very Satisfied	10	33.33
Somewhat Satisfied	8	26.66
Somewhat Dissatisfied	1	3.33
Very Dissatisfied	1	3.33

Motivations of the Filipino Elderly on Smartphone Use

The results presented in this section answer the second research question, "Why are the Filipino elderly motivated to use smartphones?" Table 5 shows the reason or motivation of the elderly to use a smartphone. Half of the respondents answered that they choose to own a smartphone because it is of good quality (*n* = 15) and is lightweight (*n* = 15). Aside from the overall quality and weight of the device, the price was also considered, whether the smartphone was received for free as a gift (*n* = 13), or bought at a cheap price (*n* = 10). When asked if they are willing to change the smartphone model/type they are currently using, some of them expressed their willingness but only if they have enough budget to do so. Meanwhile, only few respondents considered the influence of friends (*n* = 3) and unique features of the products (*n* = 6) in deciding to own and use one. These results show that the elderly own a smartphone mainly because of the durability and comfort that having the device brings, which supports their intention of using the device mainly for communication purposes to connect with their loved ones.

Table 5 Motivation of Elderly in Using Their Smartphone

Reasons for owning a smartphone	*f* (*n* = 30)*	Percentage (%)
The smartphone has a good quality	15	1.5

Reasons for owning a smartphone	*f* (*n* = 30)*	Percentage (%)
The smartphone is light and easy to carry.	15	1.5
Family members gave the smartphone as a gift.	13	3
The price of the smartphone is cheap.	10	4
The smartphone has effective advertisement	7	5.5
The model/type of smartphone is popular	7	5.5
The features of smartphones are wanted	6	7
Friends also use the same type of smartphone.	3	8.5
Others	3	8.5

Note: *multiple responses

Experiences of the Filipino Elderly on Smartphone Use

This section presents answers to the third research question, "What are the experiences of the Filipino elderly in using the device?" Table 6 summarizes the regular activities of the elderly when using their smartphone. As shown, all respondents (100%) use their smartphones for calling and messaging. They regularly use it for browsing social media like Facebook, Twitter, Instagram, Skype, and Viber (n = 24), setting their alarm clock (n = 23), and taking photos and videos (n = 22). On the other hand, half of them (n = 15) regularly watch videos on YouTube and Netflix, play games, and write reminders and notes. Lastly, few regularly use applications for productivity like word processing, spreadsheets, and slides (n = 11). Smartphones offer great benefits and convenience to the users, but based on the results, the Filipino elderly mainly use their smartphones for communication purposes. There are only few respondents who regularly use their smartphones for entertainment purposes like streaming videos, playing games, and watching saved videos/ movies. These results imply that the elderly use smartphones to keep up with the generation today in terms of using the basic features of the technology only, and not to explore the other benefits that they can get from using smartphones.

Table 6 Regular Activities of Filipino Elderly when using Smartphones

Features of Smartphone	*f* (*n* = 30)*	Rank
Calling	30	1.5
Messaging	30	1.5
Browsing social media accounts	24	3
Setting alarm clock	23	4
Taking photos and videos	22	5
Writing appointments in calendar	18	7
Browsing the internet other than social media	18	7
Watching videos	18	7
Playing games	15	10.5
Writing reminders and notes	15	10.5
Working by using word processing, sheets, and slides applications)	11	12
Others	1	13

Note: *multiple responses

Table 7 presents the elderly's experiences with ease of using smartphones. With regards to their regular activities, which are calling and text messaging, the respondents were also asked if they have any difficulty in performing these behaviors, especially during the initial period of usage. As shown in the table, majority of the respondents did not have difficulty in calling (80%) and text messaging (60%). More than half of them also did not need any assistance during their initial use of the device (53.33%), and even in their regular use of it (86.66%). These results imply that the elderly generally did not find smartphones difficult to use. However, one of the respondents said, “Wala naman akong problema sa pagtawag basta siya yung tatawag” (“I don't have any problem in calling as long as that person will call me.” Respondent #24). This response shows that the respondent finds ease in using a smartphone, but only when she's taking the call and not making it.

Table 7 The Elderly’s Experiences on Ease of Using Smartphones

Experiences	*f* (*n* = 30)*	Percentage (%)
Calls are easily made and accepted.	24	80.00
Text messaging is easily done.	18	60.00
Assistance was needed during the initial use of smartphones.	14	46.67
Assistance was needed in the regular use of smartphones.	4	13.33

Note: *multiple responses

In their initial use, although 60% of the respondents found text messaging to be done with ease, there were still 40% who had difficulty. According to these respondents, they were challenged composing messages because of some issues regarding the keypad. Some of them said, “Nahihirapan ako sa pag- text, wala kasing keypad” (“I find it difficult to send a text message because there is no keypad.” Respondent #21), and “Hindi ako nadalian sa pag-text, maliit yung keypad” (“It is not easy to send messages because the keypad is small.” Respondent #1). This is connected to their other experience, which is to ask for assistance from their family when using their smartphones (46.67%). The results show that some elderly are having difficulty using the touchscreen of their smartphones, thus, their perceived ease of using smartphones is low.

Some respondents did not seek any assistance from others when using smartphones initially (53.33%) and regularly (86.66%). According to them, they were able to learn to use the device by studying the manual that comes along with it. One of them said “Nung una nagpaturo kung paano tumawag at mag-text, the rest ako na” (“At first I asked for assistance on how to make a call and to send text messages; then the rest I learned it on my own.” Respondent #11). This result is consistent with the results of the research in England by Leung et al. (2012), that elderly individuals were found to learn to use mobile devices by reading the manual and not via trial and error, unlike the youth. However, in this current study, the respondents also said that sometimes they ask for help from someone especially when they forget how to use some features of their smartphone. As one of them shared, “Hanggang ngayon nagpapaturo ako basta kapag hindi ko alam gamitin papaturo ako” (“Until now, I ask for assistance as long as I don't know to use a certain feature.” Respondent #19).

Intentions of the Filipino Elderly for Future Smartphone Use

This last section of the results and discussion does not directly answer any of the research questions, but it provides an overview of the sustainability of smartphone use among the Filipino elderly. With the previously reported high levels of satisfaction among the Filipino elderly in using smartphones, majority of the respondents (80%) also expressed that they are still willing to use smartphones in the future. Only few of them (20%) said they do not see themselves using it again, because they still preferred the basic phones. One of them said, “Hanggang ngayon may nagtuturo sa akin gumamit dahil ako ay nahihirapan sa paggamit.” (“Until now I asked for assistance because I find it difficult to use.” Respondent #14). In the study of McMurtrey et al. (2013), it was shown that the motivation and obstacles associated with technology use are correlated to each other in influencing the adoption of smartphone usage among elderly. Based on the results that have been presented previously in this study, one of the motivations for using smartphones is having a device for communication, however, some participants find the keypad or the keyboard on the screen small for their fingers. This response showed that since the respondent experiences challenges in using the smartphone, it affects the level of their satisfaction in using the device. Nevertheless, 33.33% of the respondents are still willing to explore changing the model of their smartphones in the future if they have a budget. This shows that they are open to having new experiences in using smartphones, which is another evidence of their interest to continue using such technology.

Conclusion

The selected Filipino elderly perceive smartphones to be important and useful generally because of how the device allows them to connect and communicate with their loved ones especially those in distant places. However, despite this benefit and their high satisfaction levels in using smartphones, they still find it challenging to type texts because of the phone's keypad characteristics. The elderly respondents also do not maximize the use of the smartphone as there were only few among them who use other features of smartphones aside from call and text messaging. In general, their use of the device is limited to the basic features of mobile phones.

Recommendations and Implications of the Study

This study presents that the elderly struggle in creating text messages because of the smartphone's keypad characteristics. Based on this, the study recommends for smartphone developers and manufacturers to design smartphones suitable for the elderly. Such need to be made, readily available, and affordable for the elderly, especially they are conscious of the prices of smartphones. For those companies developing smartphones, they are recommended to consider designing phones that have features like easily changing the format of the keyboard or adjusting the text and display size of the application. Additional features must likewise include Talkback, which provides spoken feedback that can be very helpful to the elderly with low vision, and an offline assistant that can help the elderly to use their smartphone. For family members, this study suggests an additional awareness of the elderly's usage of smartphones. With increased awareness, they will be able to provide more assistance to their elderly family members. For the elderly, this study recommends that they explore the other features of smartphones aside from calls and messaging. Many features of smartphones can offer them more productivity and increased wellbeing.

References

Ajzen, I. (2019). *Theory of planned behavior diagram*. University of Massachusetts Amherst. https://people.umass.edu/aizen/tpb.diag.html #null-link

Anderson, M., & Perrin, A. (2017, May 17). *Tech adoption climbs among older adults*. Pew Research Center. https://www.pewresearch.org/internet/2017/05/17/tech-adoption-climbs-among-older-adults/

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. https://www.jstor.org/stable/249008?seq=1

Evans, M., Jamal, A., & Foxal, G. (2006). *Consumer behavior*. John Wiley & Sons Ltd.

Fernández-Ardèvol, M. (2010, October). Interactions with and through mobile phones: What about the elderly population? *ECREA Conference 2010*. https://www.researchgate.net/publication/268342357_Interactions_with_and_through_mobile_ phones_what_about_the_elderly_population

Kurniawan, S., Mahmud, M., & Nugroho, Y. (2006). A study of the use of mobile phones by older persons. *CHI '06 Extended Abstracts on Human Factors in Computing Systems*, 989-994. https://doi.org/10.1145/1125451.1125641

Lee, S. (2018, February 7). Gadgets for seniors: Ambitious techies roll out robots, smart gear for their elders. *Chicago Tribune*. https://www.chicagotribune.com/business/blue-sky/ct-biz-bsi- gadgets-for-seniors-20180207-story.html

Leung, R., Tang, C., Haddad, S., Mcgrenere, J., Graf, P., & Ingriany, V. (2012). How older adults learn to use mobile devices: Survey and field investigations [Abstract]. *ACM Transactions on Accessible Computing, 4*(3), 1-33. https://doi.org/10.1145/2399193.2399195

Lin, C.J., Hsieh, T. and Shiang, W. (2009). Exploring the interface design of mobile phone for the elderly, M. Kurosu. (Ed.): *Human Centered Design*, HCD 2009, Lecture Notes in Computer Science, 5719, 476-481. https://link.springer.com/chapter/10.1007/978-3-642-02806-9_55

McMurtrey, M. E., McGaughey, R. E., Downey, J. P., & Zeltmann, S. M. (2013). Seniors and information technology: Lessons from the field. *International Journal of Intercultural Information Management, 3*(2), 107-122. https://doi.org/10.1504/ijiim.2013.053785

Miakotko, L. (2017). *The impact of smartphones and mobile devices on human health and life.* PDF4PRO. https://pdf4pro.com/view/the-impact-of-smartphones-and-mobile-devices-on-human-31c8cb.html

Organisation for Economic Co-operation and Development (n.d.). *Elderly population.* https://data.oecd.org/pop/elderly-population.htm

Philippines Statistic Authority. (2015). *Facts on senior citizens: Results of the 2015 census of population.* https://psa.gov.ph/system/files/2015%20Fact%20Sheets%20on%20Senior%20Citizen_pop.pdf?width=950&height=700&iframe=true

Philippine Statistics Authority (2020, December 28). *Functional literacy rate of Filipinos by exposure to different forms of mass media ranges from 92.6 percent to 97.1 percent in 2019.* https://psa.gov.ph/press-releases/id/163686

Portz, J., Fruhauf, C., Bull, S., Boxer, R., Bekelman, D., Casillas, A., Gleason, K., & Bayliss, E. (2019). Call a teenager… That's what I do! Grandchildren help older adults use new technologies [Abstract]. *JMIR Aging, 2*(1). doi:10.2196/preprints.13713

Poushter, J. (2016, February 22). *Smartphone ownership and internet usage continues to climb in emerging economies.* Pew Research Center. https://www.pewresearch.org/wp-content/uploads/sites/2/2016/02/pew_research_center_global_technology_report_final_february_22 2016.pdf

Pratkanis, A.R., Breckler, S.J. & Greenwald, A.G. (Eds.). (2014). *Attitude structure and function.* Psychology Press.

Rotondi, V., Stanca, L., & Tomasuolo, M. (2017). Connecting alone: Smartphone use, quality of social interactions and well-being. J*ournal of Economic Psychology, 63*, 17-26. https://doi.org/10.1016/j.joep.2017.09.001

Roupa, Z., Nikas, M., Gerasimou, E., Zafeiri, V., Giasyrani, L., Kazitori, E. and Sotiropoulou, P. (2010). The use of technology by the elderly. *Health Sciences Journal, 4*(2). 118-126. https://www.hsj.gr/medicine/the-use-of-technology-by-the-elderly.php?aid=3614

Statista Research Department (2021, November 24). *Share of internet users in Philippines 2019, by age group.* https://www.statista.com/statistics/998362/share-internet-users-philippines-age- group/.

Sarwar, M. & Soomro, T.R. (2013). Impact of smartphone's on society. *European Journal of Scientific Research, 98*(2), 216-226. https://www.researchgate.net/publication/236669025_Impact_of_Smartphone's_on_Society

Smith, A. (2014, April 3). *Older adults and technology use.* Pew Research Center. https://www.pewinternet.org/2014/04/03/older-adults-and-technology-use

Subramanyam, A.A., Singh, S., & Raut, N.B. (2018). Mobile phone use in the elderly: Boon or bane?. *Journal of Geriatric Mental Health, 5*(2), 81. DOI: 10.4103/jgmh.jgmh_32_18

Vaportzis, E., Giatsi Clausen, M., & Gow, A. J. (2017). Older adults perceptions of technology and barriers to interacting with tablet computers: A focus group study. *Frontiers in Psychology, 8.* https://doi.org/10.3389/fpsyg.2017.01687

Villanueva, J. (2022, January 24). *PH digital transactions to grow despite challenges: BSP chief.* Philippine News Agency. https://www.pna.gov.ph/articles/1166236

Peer-Reviewed Congress Paper

Strategies for encouraging labelling of locally designed garments: A case study of Abia State, Nigeria

Anthonia Obeta & Taibat Adebisi

Michael Okpara University of Agriculture, Nigeria

Abstract

The study focused on the strategies for encouraging labelling of locally designed garment in Nigeria: A case study of Abia State. Survey research design was adopted for this study. Four research questions guided the study. The population for the study was 1949 subjects, comprising 1724 local garment consumers, 73 local garment producers and 52 local garment marketers. A total sample size of 370 was selected and studied. Data was collected with a validated structured questionnaire while mean was used for data analysis. The findings of the study revealed that local garments in Abia State do not carry labels. It also showed the influence labelling of garments has on the sale of garments. Identified by the study also are factors hindering labelling of local garments and the strategies for encouraging labelling of local garments in the state. In conclusion, labelling of locally designed garments should be enforced in the country so that the consumers will have knowledge of the contents of the fibre used in making the garment they are buying and obtain equal worth of the money they spent in buying the garments. This will preserve the scarce resources, give room for proper care and maintenance of the garment and promote health. Based on the findings of the study it was recommended among others that both federal and state governments in Nigeria should enforce labelling of all locally designed garments in the country while the garment consumers and producers should be given consumer education/orientation on how to read and interpret garment labels of the garments they are producing/buying.

Keywords: **Label, Garment, Locally, Designed Garments**

Introduction

A label is small piece of paper, fabric or similar material attached to an object which gives information about something to which it is attached to. It can also be referred to a piece of fabric, paper or plastic that is attached to a product. It has information about that product it is attached to. For instance, clothes companies' attach labels to garments. The labels have information about the garments' materials, size, and the company that made them. Labels are key features of most products as they help to market the products, allow customers or consumers to recognize their choices and give important messages like manufacturer's/designer's name, ingredient(s), instructions and uses. Labels are essentials

Obeta, A. O., & Adebisi, T. T. (2022). Strategies for encouraging labelling of locally designed garments: A case study of Abia State, Nigeria. *International Journal of Home Economics, 15*(2), 268-277.

Anthonia Obeta ✉ anthonia.obeta@gmail.com

when making the decision to purchase items, especially garment. Therefore, one can say that labelling is a significant means of product identification.

A label can be a piece of paper, printed statement, embroidered textile, embossed leather which is either a part or parcel of a product, name of product and the address of producers or such useful information to be beneficial to the users (Kundan and Koirala, 2014). An informed consumer cannot readily purchase any product without a label. In like manner, a garment that does not have any label cannot be easily purchased by an informed consumer. This shows that labels affect the sales of the garment by attracting or grabbing the consumer's attention towards the garment. The marketers might arouse the interest in the mind of the consumer towards the garment through an attractively designed garment, but on closer approach to such garment without a label will discourage the consumer from buying such garment.

The primary function of labels is to provide information about products that are not immediately recognisable or verifiable by the consumer when observing the product, this enables consumers to make decisions based on the visual properties of the product or from previous buying experiences (Howard and Allen, 2006). Information on garment labels are fibre content, size, price, care and country of origin is conveyed by clothing labels (Solomon and Robolt, 2009).

The characteristics of clothing labels and types of information presents various sources of information and are used to convey clothing-related information to consumers. Information on clothing labels is mostly presented in written format while some information is often presented in symbol format (Brown and Rice, 2001). The first impression formed and association made by consumers about a clothing product, is often through objective information in the form of product labels (Taghian and Lamb, 2006). Labelling garment and other textile articles plays a vital role in the buying decision of a consumers. For some, the convenience might be a reason to pick up a garment (Fibre2fashion, 2018). However, label, being a very important factor in the recognition and marketability of a garment, should contain information relating to whether the product has harmful chemical and also contain information relating to environmental aspect of the garment, such as the chemicals that have been used during dying. Information on the handling of garments is also found on labels. Labelling is a very important element affecting the sales and distribution process of a product as the labels provide clear information about the quality (components), price, brand name, and other features to the customer. It further protects the customer from the malpractices of the middlemen and the integrity of the manufacturer or designer.

Labels carries the integrity and standard of a manufacturer or a designer. Labelling of a garment helps garment dealers to encourage potential buyers to make purchase. When established, labels remain the attraction of the consumer who are already acquainted with the brand. Labelling protects consumers from mischievous retailers. It also helps marketers to sell out their stock of garment. Labelling gives necessary information to the consumers about the products. The consumers can get knowledge about the quality and features of a product without tasting the product. From the label attached on the product they can recognise standard and grades of product (Thapa, Neupane and Dilli, 2014).

Garment is a single item of clothing used to cover the body. It can be used as an outer cover or outward appearance like dresses, suits, pants and so on. Garments can be produced at home as locally designed or in the industry. The wearing of a garment is mostly restricted to human beings and is a feature of nearly all human society. The amount and type of garment worn depends on the individual's choice, belief, customs/tradition, place of residence, type of occasion and age (Stoneking, 2003). Some garments can be gender specific, while others are not gender specific and are locally referred to as unisex (Balter, 2009).

Physically, garments serve many purposes. The basic function of garment is to cover nudity and present a human being decently. It also serves as a protection for enhancement of safety during hazardous activities such as hiking and cooking, laboratory activities, sports, military assignments and explorations into dangerous environment (Ralf, Kayser and Stoneking, 2003). Garment protects the wearer from rough surfaces, rash-causing plants, insect bite, splinters, thorns and prickles by providing a barrier between the skin and the environment hazards (Stoneking, 2003). Garments can as well insulate against cold conditions, they can provide a hygienic barrier keeping infectious and toxic materials away from the body (Gilligan, 2010).

Garments can also serve many other purposes such as; adornment, beautifying the body, identification and modesty as well. It also documented that garments also provide protection from ultraviolet radiation. Wearing garment is also a social norm, and being deprived of wearing garment may be embarrassing to an individual and also not wearing garments in public to the extent that genitals, breast or buttocks are visible could be seen as indecent exposure. Megan, (2013) asserts that garments are things that cover the body, protecting it from the element, impropriety and scrutiny.

Garments performs a range of social and cultural functions, such as individual, occupational and gender differentiation, and social status. In many societies, norms about clothing reflects the standard of modesty, religion, gender and social status. Garment may also function as a form of adornment and an expression of personal taste or style. Garments protects against many things that might injure the uncovered human body, (Ralf Kayser and Stoneking, 2003). Garments protects people from the element, including, rain, snow, wind and other weather, conditions as well as from the sun. Garments reduce risk during work or sports. Conversely, garments may protect the environment from the garment wearer, as with doctors wearing medical scrubs. Wearing garment also have social implications, they cover part of the body parts that social norms require to be covered, act as a form of adornment, and serve other social purposes, (Balter, 2009).

Garment is one of the basic necessities of any human beings which is used for protection, decoration, beautification, adornment, self-expression, status symbols and to express one's personality (Weber, 1990). Garment can be made at home or produced by roadside tailors or in the industries. Garments can be defined by its role in revealing or resisting ethnic, professional, class-based, or political identities, or in screening off or establishing a sense of individuality (Bergstrom, 2011).

The word *locally* simply means done in, made in, or connected with a particular area. Local is affecting, or confined to a limited area or part. It can also be said to be of or relating to a city, town, or district rather than a large area. According to USDA (2012) locally designed based on the distance from farm to store. To be considered locally by their standard, a product must be sold within 400 miles of its origin or within the state. Therefore, one may say that a "locally designed garment" is a garment or fabric designed for protection which is manufactured or created and sold within 400 miles of its origin or within the state of production. When a garment is said to be locally designed, it simply means that the garment is done in, or made in or manufacture at a particular area. Generally, garment without labels do not attract the attention of the competence consumers who make purchase based on what they know about the product [garment].

Statement of Problem

Locally designed garments are those garment that are produced within an area (Local Government Area, State or Country). It has been observed that most locally designed garments come without labels on them. This act leaves the consumers with no information or knowledge of the designer's name, quality, care, fibre content and features of what they want to buy. It also affects the rate of sales and purchase by an informed garment consumer as well. This generally affects the patronage of such garments, especially in Abia State, Nigeria.

Garment designing in Abia State is on a steady increase, since there has been campaign on the need for people to acquire entrepreneurship skills due to teeming unemployment of youths in the country. Even, some university graduates these days register with a good garment designer to acquire more skills in garment designing. A successful entrepreneur needs, as a matter of urgency, to package their products to compete favourably internationally. However, the wonderful and beautiful garment produced by these fast-growing local garment designers cannot optimally actualize this purpose because their products do not have labels like the products of their counter parts in some other parts of the world. These local garment producers are supposed to attach labels to their products, to meet the garment needs of the consumers and compete favourably internationally. Information concerning instructions, warnings, and care usage of the garment are carried by the label from the designer to the consumer to ensure durability and preserve resources. Also, information on the quality, care, maintenance and features of a garment needs to be known by consumers through attachment of care label. However, in Abia State such vital information provided by care label on locally designed garments are lacking. This therefore, calls for the need to identify strategies for encouraging labelling of locally designed garments in Abia State, hence the need for this study.

Objective of the study

The main purpose of this study is to identify the strategies for encouraging labelling of locally designed garments in Nigeria, using Abia State as a case study. Specifically, the study identified:

1. The state of labelling of locally designed garment in Abia State that is whether locally designed garments are labelled or not.
2. The influence of labelling on the sales of locally designed garments.
3. The factors hindering labelling of locally designed garment in Abia State.
4. Strategies for encouraging labelling of locally designed garment in Abia State.

Research Questions

The following questions guided the study.

1. What are the state of labelling locally designed garment in Abia State?
2. What are the influence of labels on the sales of locally designed garment in Abia State?
3. What are the factors hindering the labelling of locally designed garment in Abia State?
4. What are the strategies for encouraging labelling of locally designed garments in Abia State?

Scope of the Study

The scope of this study is limited to Abia State, Nigeria, where majority of the locally designed garment are produced in Nigeria. Responses to the instrument was restricted to the producers/ designer of local garments in Abia State, marketers of locally designed garments and consumers of locally designed garment in Abia State.

Methodology

Study Design

The study used survey research design. A survey research design is one in which a group of people or items is studied by collecting and analysing data from a few people or items considered to be representative of the entire group.

Area of the Study

The area of this study was Abia State, Nigeria. Abia State is in the South Eastern part of Nigeria. The capital is Umuahia and one of the major commercial cities in Nigeria. The commercial hub, aba was formerly a British colonial government outpost in the region. Abia State was created in 27th August 1991 from part of Imo state. Abia State is located on the coordinates 5°25'N 7°30'E. The study covered Abia State, mainly Aba, Umuahia and Ohafia (the three educational zones in the state) respectively.

Population of the Study

The population for this study comprised three main groups of respondents namely consumers, marketers and designers of local garments in Abia State, Nigeria. The breakdown of the population are as follows:

Local garment consumers		
Civil servants from		
Umuahia	905	
Aba	454	
Ohafia	365	
Subtotal		**1724**
Registered Local garment designers	73	
Registered Local garments marketers	52	
Subtotal		**125**
Total		**1849**

Source: Abia State Civil Service Commission & Ministry of Commerce and Tourism.

Sample and Sampling Techniques

A critical look at the above population distribution of the number of local garment consumers, designers and marketers respectively will discover that the population is not evenly distributed. Therefore, the researcher decided to use 20% of the population of each group of the respondents as follows: 20% of 1724 local garment consumers = 345, 20% of 73 local garment designers = 15 and 20% of 52 local garment marketers = 10. These made up a total sample size of 370 respondents. A Simple random sampling technique was used to select consumers, designers and marketers which were involved in the study.

Instrument for data collection

A structured questionnaire titled: State, Influence, Factors and Strategies Questionnaire (SIFS) was used for the data collection. The instrument was in five sections: A, B, C, D and E respectively. Section A elicited information on the demographic data of the respondents. Section B was used to elicit information on the state of labelling locally designed garment in Abia State. Section C was used to generate data on the influence of labelling on the sales of locally designed garment in Abia State, section D elicited information on the factors hindering the labelling of locally designed garment in Abia State, while section E elicited information on the strategies for encouraging labelling of locally designed garment. A four-point rating scale of Strongly agreed (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) was used for rating the responses, with values 4, 3, 2, and 1 assigned respectively.

Validation of the instrument

The instrument was validated by three experts (two lecturers from Home Economics Department and one lecturer from Measurement and Evaluation Department, both in Michael Okpara University of Agriculture, Umudike. The contributions of the validates reflected in the final draft of the instrument before it was administered.

Data Collection and Analysis Techniques

370 copies of the questionnaires were distributed to the respondents by the researcher and two research assistants by hands. 362 copies of the questionnaires representing 98% were correctly filled and returned while eight copies representing 2% were not returned. The analysis was based on the returned questionnaires. The statistical tools used for data analysis were frequency, simple percentages (%), mean and standard deviation. Frequency was used to organize the data collected. Percentage was used to analysis the demographic data of the respondents while mean was used to analyse the responses to research questions. The mean was calculated by assigning nominal values to the response categories. Based on a four-point rating scale of 4, 3, 2 and 1 respectively, a mean rating of 2.50 was regarded as a minimum acceptable mean score while any mean below the acceptable mean of 2.50 was rejected.

Findings

The presentation of the data is organized in accordance with the research questions and is presented in tables below.

Research Question 1

What is the state of labelling locally designed garment in Abia State?

In table 1 below, all the respondents agreed that locally designed garments in Abia State do not carry labels except two. This is shown vividly on their grand mean scores.

Table 1: The Mean Responses of the respondents on the state of labelling locally designed garments.

S/N	The following are the state of labelling in Abia State.	$\overline{X_1}$	SD	$\overline{X_2}$	SD	$\overline{X_3}$	SD	$\overline{X_G}$	SD	Remarks
1	There is no law that local garments produced in Abia State should be labelled.	3.00	1.04	3.17	1.04	2.94	1.11	.01	1.06	Agreed
2	Almost all locally designed garments in Abia State do not carry labels.	2.66	0.99	2.91	0.88	2.43	1.11	2.66	0.99	Agreed
3	I do not buy locally designed garment in Abia State because they do not carry labels.	2.96	1.13	3.20	1.05	2.90	1.09	3.02	1.09	Agreed
4	For some years now I have been buying locally designed garment in Abia State with labels.	2.23	1.04	2.00	1.10	2.14	1.01	2.12	1.05	Disagree
5	For some years now I have been buying locally designed garment without labels.	2.97	1.02	2.95	1.02	3.01	0.96	2.97	1.00	Agree
6	All the local garments in Abia State have labels attached to them.	2.39	1.03	2.40	1.09	2.60	0.92	2.46	1.01	Disagree
7	Most of my friends do not like buying local garments in Abia State because they do not carry labels.	3.09	1.03	2.88	1.03	2.83	1.07	2.93	1.04	Agreed

Key: $\overline{X_1}$ = Mean Responses of local garment consumers; $\overline{X_2}$ = Mean Responses of local garment producers/designers; $\overline{X_3}$ = Mean Responses of local garment marketers, $\overline{X_G}$ = Grand mean response of all the subjects, SD= Standard Deviation.

Research Question 2

What are the Influences of labelling on the Sales of locally Designed garments?

Table 2 below shows that labelling has influence on the sale of locally designed garments. This is shown on their grand mean scores which were all up to 2.50, the acceptable mean score and some were even above the acceptable mean score.

Table 2: The Mean Responses of the Respondents on Influences of labelling on Sales of locally designed garment.

S/N	The followings are the influences of labelling on the sale of garments in Abia State	$\overline{X_1}$	SD	$\overline{X_2}$	SD	$\overline{X_3}$	SD	$\overline{X_G}$	SD	Remarks
1	Some of the locally designed garments in Abia State are not purchase because labels are not attached on it.	2.87	1.04	3.14	0.97	3.03	1.01	3.01	1.00	Agree
2	People prefer buying ready to wear garment to local designed garment because of labels on it.	2.57	1.00	2.70	0.93	2.53	1.12	2.60	1.01	Agree
3	Customer prefer buying garments with labels because it enables them know the fibre content of the garment.	2.99	0.94	3.27	0.86	2.89	0.97	3.05	0.92	Agree
4	Customers purchase garments with labels because it tells them how to care for it.	2.96	0.96	3.11	0.90	2.72	1.16	2.93	1.00	Agree
5	Locally designed garment with labels attracts higher sales than those without labels.	3.10	1.01	3.26	0.79	2.93	1.01	3.06	0.94	Agree
6	Consumers prefer buying garments with Labels because it helps to identify the trade mark owner of the garment.	2.94	0.98	3.08	0.92	2.77	1.08	2.89	0.99	Agree
7	Garment consumers buy garment with Labels because it provides the consumer with information about the garment.	3.03	0.90	3.27	0.76	2.87	1.15	3.01	0.94	Agree
8	Consumers buy garment with Labels because it helps them identify fake garments easily.	3.04	0.99	3.07	1.05	2.78	1.07	2.94	1.04	Agree
9	Customers prefer buying garments with label to those without labels.	2.98	1.09	3.11	0.93	2.87	1.04	2.96	1.02	Agree

Key: $\overline{X_1}$ = Mean Responses of local garment consumers; $\overline{X_2}$ = Mean Responses of local garment producers/designers; $\overline{X_3}$ = Mean Responses of local garment marketers, $\overline{X_G}$ = Grand mean response of all the subjects, SD = Standard Deviation.

Research Question 3

What are the factors hindering the labelling of locally designed garment in Abia State?

Table 3 revealed that all the enlisted items were the factors hindering labelling of locally designed garments. This was shown on their grand mean score which were all up to 2.50 the acceptable mean score and some were even above the acceptable mean score.

Table 3: The Mean Responses of the Subjects on the Factors Hindering labelling of locally designed garment.

S/N	The following factors hinder labelling of local garments in Abia State.	$\overline{X_1}$	SD	$\overline{X_2}$	SD	$\overline{X_3}$	SD	$\overline{X_G}$	SD	Remarks
1	Ignorant of the importance of labelling garment by the consumer.	2.96	1.12	3.15	0.95	2.99	0.97	3.03	1.01	Agree
2	Marketers' Ignorance of the influence of labelling on sales of garment.	2.72	1.08	2.80	0.95	2.57	1.00	2.69	1.01	Agree

3	Garment designers Ignorance on the importance of labelling garments.	2.86	1.08	3.03	0.89	2.96	0.99	2.95	0.99	Agree
4	Designers Ignorance of the Information needed on garment labels.	2.90	0.95	3.12	0.99	2.80	1.10	2.94	1.01	Agree
5	Ignorant on how to interpret the symbols on the label.	2.86	1.00	3.39	0.74	2.97	0.94	3.07	0.89	Agree

Key: $\overline{X_1}$ = Mean Responses of local garment consumers; $\overline{X_2}$ = Mean Responses of local garment producers/designers; $\overline{X_3}$ = Mean Responses of local garment marketers, $\overline{X_G}$ = Grand mean response of all the subjects, SD = Standard Deviation.

Research Question 4

What are the strategies for encouraging labelling of locally designed garment?

Table 4 shows that all the strategies enumerated below encourage labelling of locally designed garments. This was revealed by their grand mean scores which were all up to 2.50 the acceptable mean score and some were even above the acceptable mean score.

Table 4: The Mean Responses of the Subjects on Strategies for Encouraging labelling on locally designed garment.

S/N	The following encourage labelling of garments in Abia State.	$\overline{X_1}$	SD	$\overline{X_2}$	SD	$\overline{X_3}$	SD	$\overline{X_G}$	SD	Remarks
1	Training of designers on the importance of labelling on every product including locally designed garment.	2.84	1.00	3.24	0.93	3.09	0.90	3.05	0.94	Agree
2	Giving consumers education on the importance of labelling locally designed garment.	2.64	1.14	3.01	0.84	2.89	1.04	2.84	1.00	Agree
3	Encouraging families and household members to always insist on purchasing locally designed garment with labels	2.90	0.95	3.05	1.04	2.94	0.87	2.96	0.95	Agree
4	Placing Adverts on mass media which encourage labelling of locally designed garment	2.93	1.08	3.39	0.81	2.74	1.11	3.02	1.00	Agree
5	Attending both local and International conferences where local garments can be exhibited will encourage the labelling of locally .designed garments.	2.88	0.88	3.35	0.73	3.03	0.93	3.08	0.84	Agree
6	Creating website for locally designed garments will encourage labelling of locally designed garment.	3.12	0.96	3.19	0.74	2.99	1.04	3.10	0.91	Agree
7	Advertising labelling of Local designed garment in medias e.g., magazines, newspapers, Facebook and other social medias will encourage labelling of locally designed garments.	3.26	0.88	3.17	0.76	3.09	0.92	3.17	0.85	Agree

Key: $\overline{X_1}$ = Mean Responses of local garment consumers; $\overline{X_2}$ = Mean Responses of local garment producers/designers; $\overline{X_3}$ = Mean Responses of local garment marketers, $\overline{X_G}$ = Grand mean response of all the subjects, SD = Standard Deviation.

Discussion of the Findings

The findings of the study on table 1 showed that locally designed garments in Abia State do not carry labels. The highest mean score on that table is 3.01, that is item no. 1 which bothers on the fact that there are no laws that locally designed garment in Abia State should be labelled. This is a clear indication that locally designed garments in Abia State do not carry labels.

Owolabo (2013) stated that most Nigerians do not like showing their identity. They felt that attaching label in home produced garments will attract low patronage. However, most Nigerians living abroad buy large quantity of locally designed garments whenever they visit home because such garments when seen overseas are quite expensive.

In table 2, findings of the study shows that labels have great influence on the sale of garments. This is in agreement with Merchandiser, (2015) who pointed out that without any label on a garment that the probability of buying such garment by an informed garment consumer is very low. Howard and Allen (2006), stated that the primary function of labels is to provide useful information about products that are being introduce new in the market. The labels attached in such product enables the consumer to make decisions based on the visual properties of the product and not from the previous buying experiences.

The finding in table 3 identified five factors hindering labelling of locally designed garments in Abia State. This is in line with Okechukwu and Onyema (1999) who reported that Nigerians have negative attitudes towards home made goods because of the perception that locally made goods are inferior in quality to imported products. This is one of the major reasons why garment made in Nigeria is not labelled because when it is labelled, the consumer will find it unattractive to buy because they already possess a negative attitude which is that any garment designed in Abia especially in Aba, hence the derogatory word “Aba made” for such locally produced garments. These results to a waste of scarce resources.

Identified also by the study are seven strategies for encouraging labelling of locally designed garment in Abia State. These include training of designers on the importance of labelling on every product including locally designed garment, giving consumer education to the populace on the importance of labelling locally designed garment, encouraging families and household members to always insist on purchasing locally designed garment with labels. Advertising labelling of Local designed garment in mass/social medias for example magazines, newspapers, Facebook, WhatsApp’s and other social medias will encourage labelling of locally designed garments. This is in line with Emelue, (2015) who reported that technology-related strategies will improve production of labels for garments.

Conclusion

The study has determined the state of labelling locally designed garments in Abia State and found out that most local garments do not carry labels. It was also discovered that labelled garments attract higher patronage from consumers especially the informed garment consumers, and conclude that labelled garment has influences on the sales of local garments. Certain factors hinder labelling of locally designed garments and the strategies for encouraging labelling of locally designed garments were also identified. Conclusively, the application of the findings of the study will certainly encourage labelling of local garments in Abia State, Nigeria.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The identified technology, skill and operational knowledge for the production of locally designed garments should be integrated in the curriculum of Home Economics (Clothing and Textile) at all levels in Nigeria education system.
2. The Federal and state governments should help package the identified strategies in production of locally designed garments into programmes for training youth and retraining fashion designers in Nigerian clothing enterprise for improved quality of locally designed garments in Nigerian market.
3. Government of South-Eastern states of Nigeria which is the location of the state in questions should direct their skill acquisition centres to absorb and integrate the identified strategies into their programmes for meeting skill needs of unemployed youth in south eastern Nigeria who are into garment making enterprises.

4. The federal government should improve in electricity supply for empowering the machineries needed for making/producing locally designed and labelled garments faster.
5. The government should boost the textile and clothing industry by scaling up the fight against smuggling and encourage our local textile and clothing industries.
6. Government should encourage investors to bring clothing industries that are based on production of locally designed garments in Nigeria to remove or reduce smuggling foreign clothing items into the country.
7. Nigerians should develop attitudinal change toward encouraging locally designed garments and learn to be patriotic for the love of their own country's products. All these efforts if put into action should encourage and sustain production of quality local garments with labels.

References

Balter, M. (2009). "Clothes Make the (Hu) Man". *Science. 325* (5946): 1329. doi:10.1126/science.325_1329a. PMID 19745126.

Bergstrom (2011). *Definition of garment.* http://martinbergstrom.com/

Brown, P. & Rice, J. (2001). *Ready-to-wear apparel analysis* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Emelue, F. (2015). *Strategies for improving the production of ready-to-wear garments in clothing industries in Northeast Nigeria.* 1-190 (Unpublished M.Sc. Thesis)

Fibre2fashion News Desk. (2018). *Labelling of ready-to-wear clothing.* http://www.fibre2fashion.com/news/apparelnews/newsdetals.aspx? news id =169909.

Gilligan, lan (2010), The prehistoric development of clothing: archaeological implication of a thermal mode, *Journal of Archaeological Method and Theory, 17*(1): 15-80, doi: 10.1007/s10816-009-9076-8

Howard, P. & Allen, H. (2006) Beyond organic: consumer interest in new labelling schemes in the central coast of California. *International Journal of Consumer Studies:* https://books.google.com.

Merchandiser (2015) retrieved 28 October 2018 http://www.garmentsmerchandising.com/different-types-of-label-used-in garments/Ref. from www.abebooks.com>importance-wearing.

Okechukwu, C. and Onyeama, V. (1999). "Nigerian Consumers Attitude towards Foreign and Domestic Products". *Journal of International Business Studies, 30*(1). Outlook International.

Owolabo, O. (2013). *Nigerians are crazy for foreign product.* Available online at the Herald from:http://www.herald.ng/nigerians-are-crazy-for-foreign-product vc/#Sd283tFJt7xx00.99.

Ralf, K., Manfred, K. & Mark, S. (2003), "Molecular evolution of Pediculus humanus and the origin of clothing"(PDF), *Current Biology, 13* (16): doi:10.1016/S0960-9822(03)00507-4, PMID 12932325, the original (PDF) on 2008-09-10

Solomon, M. R., & Rabolt, N. J. (2009). *Consumer behaviour in fashion.* Upper Saddle River, NJ: Prentice Hall.

Stoneking, and M Kittler, R., Kayser, M. (2003), "Molecular Evolution of Pediculus Humanus and the origin of clothing", *Current Biology, 13* (16), http://dx.doi.org/10.1016/S0960-9822(03)00507-4

USDA (2012) https://www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/labeling;

Weber, J (1990). *Clothing: Fashion. Fabrics. Construction.* U.S.A, Glencoe Macmillan Publishing Company, USA.

Notes for Contributors

ifhe.org/ejournal/author-information

Frequency of publication

The International Journal of Home Economics is published twice a year. Papers for review will be accepted throughout the year to email: intjournalhomeeconomics@gmail.com

Focus

The International Federation for Home Economics is the only worldwide organisation concerned with Home Economics and Consumer Studies. It was founded in 1908 to serve as a platform for international exchange within the field of Home Economics. IFHE is an International Non-Governmental Organisation (INGO), having consultative status with the United Nations.

This refereed journal brings together emergent and breaking work on all aspects of Home Economics, and, most importantly, how we might improve and renew the everyday work of Home Economists. It features quantitative and qualitative, disciplinary and trans-disciplinary, empirical and theoretical work and will include special editions on key developments. It aims to push the boundaries of theory and research—to seek out new paradigms, models and ways of framing Home Economics.

Contributors

The International Journal of Home Economics welcomes contributions from members and non-members, from a variety of disciplinary and theoretical perspectives.

Submission form

A standard manuscript submission form must be submitted with all manuscripts. It is available from the Journal Website:

https://www.ifhe.org/ejournal/author-information/manuscript-submission

Please save the form to your computer with a new name (e.g., Authornames-IJHE.pdf) after entering your details. Unfortunately, closing the PDF without saving to a new file name will lose your data. Papers submitted without a manuscript submission form will be returned to authors.

This form includes room for title, keywords and space for all authors' biographies, which should be no longer than 100 words each. Please include current role or memberships and an email address for correspondence. For example:

> Professor Donna Pendergast, PhD, is Dean of the School of Education and Professional Studies at Griffith University, Brisbane, Australia. Donna researches and writes about Home Economics philosophy, education and practice.

Manuscript requirements

Manuscripts should be sent electronically to the editor at intjournalhomeeconomics@gmail.com as a Microsoft Word document (doc, docx). Each document should be double-spaced, with generous margins. Material which requires substantial editing will be returned to the author. Paper length should not exceed 8000 words.

Please spellcheck using a consistent dictionary (i.e., Australian, UK, USA). All pages should be numbered. Contributors should be aware that they are addressing an international audience. Jargon should be avoided and local terminology clarified for an international audience. Authors should use non-discriminatory language. Measurements should be in metric units. Articles should be original work and, where appropriate, should acknowledge any significant contribution by others.

Tables, figures and illustrations

Figures, diagrams and images must be cited in text and captions provided. Figures should be at a professional standard and supplied as separate electronic files (e.g., TIF, JPG, GIF). Tables must be cited in text and captions provided. Include all tables, figures and illustrations in the correct location in the manuscript. All tables should be in text, not provided as an image.

References

References should follow the American Psychological Association system (APA Publications Manual, 7th Edition).

Copyright

Manuscripts submitted for publication must not have been previously submitted or published. Accepted papers become the permanent property of IJHE. By submitting a manuscript, the author(s) agree that copyright for their articles are automatically transferred to the IJHE, if and when articles are accepted for publication. The copyright gives IJHE the exclusive rights to reproduce and distribute the article. The copyright form is contained in the IJHE Manuscript submission form.

Proofs

Proofs will be sent electronically to the corresponding author for return within 72 hours. It is the author's responsibility to ensure the accuracy of these proofs. Correction other than printing errors should be kept to a bare minimum.

If you have any questions, please email Professor Donna Pendergast (Editor) at this email address: intjournalhomeeconomics@gmail.com


IJHE