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Hierarchy of Responsible Consumption: How Families can Inspire Members to Consume Responsibly

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Abstract

There is sufficient evidence that consumers' current consumption pattern is fast-degrading the environment on which their survival, as well as the survival of future generations depend. There is also empirical evidence that there is increased recognition of the need to consume responsibly but individuals are not taking required actions due to lack of practical support and advice. This paper recognises that the dispositions of all consumers towards responsible consumption are not the same due to differences in personality characteristics, background and experiences. Accordingly, the paper presented a 4-level hierarchy of responsible consumption, a practical framework that families, campaigners and the media can follow to mobilize responsible consumption among consumers. The Framework guides individuals to understand how consumers at each level can be inspired up to the highest level of responsibility and the roles that families can play in the process. It encourages families and organizations change their styles according to the level of the consumer.

Keywords: Responsible Consumption, Family, Consumer, Ignorant, Classical, Effective, Dependable.

Introduction

The need for consumers to adopt responsible consumption patterns is becoming an urgent one. Indeed, the decade of 2020 is estimated to be the last chance for consumers to make changes that will address sustainability challenges or begin to face more serious consequences of unsustainable consumption patterns. Studies conducted by the United Nations Intergovernmental Panel on Climate Change (IPCC) (2018) finds that global warming, which is increasing at between 0.1^{o}C and 0.3^{o}C per decade, may reach 1.5^{o}C in 2030. At 1.5^{o}C, the temperature will be higher, there will be drought and some ecosystems will be lost (IPCC, 2018). These consequences will get worse if global warming exceeds 1.5^{o}C in 2030 (IPCC, 2018; World Meteorological Organization [WMO], 2020). Also, Gonzalez (2019) notes that, by September 2019, consumption expenditure represented 60% of global GDP. Yet in every year, one-third (the equivalent of 1.3 billion tons worth $1trillion) of food produced is wasted, while almost 2 billion people go hungry or undernourished (United Nations Development Programme [UNDP], 2020). Besides food, this kind of worrisome statistics exists for water and energy categories (UNDP, 2020). The United Nations set a target to substantially reduce waste generation through prevention, reduction, recycling and reuse by 2030 as it estimates that if the global population reaches 9.6 billion by 2050, the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles.

Based on the foregoing, it is clear that the need for people to consume responsibly is real and pressing. Responsible consumption is consuming in manners that have a less negative impact or more positive impact on the environment, society, the self, and the other beings (Ulusoy, 2016). The concept is better promoted within the framework of the family because most consumers live in families. Moreover, the family is the basic consumption unit for consumer goods in the Nigerian society, hence major consumer items such as food, housing, furniture, automobiles and electrical appliances are consumed more by family units than by individuals.

A family is a group of persons united by ties of marriage, blood or adoption and often characterized by common residence and economic cooperation (Chandrasekar, 2013; Anyakoha, 2015). The family is the locus of relationships, meanings, and values (Stacey, 1990) and thus, has a strong influence on choices of what and how their members consume (Hawkins, Coney & Best, 1980; Chandrasekar, 2013; Jaime, do Prado & Malta, 2017). Indeed, the consumption patterns of individual family members are hardly independent of other family members (Hawkins, *et al*., 1980) because family consumption begins with consulting individual membersso that products that satisfy the common wants of all or several of its members can be obtained. The stages in the family consumption process include problem recognition, information acquisition, alternative evaluation, purchase, utilization, disposition and evaluation (Hawkins, *et al.,* 1980). The concept of family consumption, therefore, includes everything the family does to satisfy her needs and wants.

Meeting family needs and wants responsibly is basic to the sustainable survival of families and their environments. In this paper, sustainable family survival is construed as the continued existence of a family in a way that guarantees the continued existence of its coming generations. Consuming responsibly could help families meet their own needs, improve product quality, minimize waste and reserve some resources for her coming generations. However, studies have confirmed that individuals and families need to be supported with research-based practical advice to enable them to take required actions. Already, there are several technical reports on environmental sustainability (IPCC, 2018; WMO, 2020) as well as studies determining consumers' willingness to consume responsibly (Winston, 2011; IKEA, 2019). However, there is need for studies that yield more practical ways to promote responsible consumption. This gap is apparent as IKEA (2019) in a study of 31,000 consumers in 30 countries finds that while more people are recognizing the need to change their consumption patterns, action has stagnated due to perceived lack of support and practical advice. This paper provides a framework that could guide families in helping their members consume responsibly and motivate researchers to engage in a deeper investigation about the realities of promoting responsible consumption.

Concept of Responsible Consumption

From an economic perspective, consumption has been defined as the purchase and use of goods and services to satisfy needs and wants (Amer & Amer, 1977; Hill, 2003). Although some authors argue that consumption is theuse of goods and services by households and not about purchasing (Corporate Finance Institute, 2020;Carol, 2020).However, in the context of consumer responsibility, consumption is anextensive concept that begins even before an actual purchase is made and continues after the product is disposed of. It involves understanding, acknowledging and consenting to the product's behind-the-scenes practices; purchasing the products; using the products for their entire lifetime; eventually disposing of or transforming the products (Gonzalez, 2019) and giving feedback on the products.On the other hand, the term 'responsible' has multiple meanings but in the context of this paper, it is defined from three perspectives - good judgement, right act (Cambridge Dictionaries Online, 2020), and dependability (Hornby, 2015). Good judgement is a piece of evidence that points to the right choice (Likierman, 2020) while right and reliable behaviors are those that are consistently just and honourable.

Thus, responsible consumption is about consistentlychoosing, using and disposing of or transforming products in ways that are decent andfair to the self, other beings and the environment. Rationality and decencyareimportant components of discussions on responsible consumption as responsible consumptionhaslong been conceptualized as rational and efficient use of resources (Balderjahn, 1988; Hobson, 2002; Marchand and Walker, 2008; Ulusoy, 2016). Consistency in these behaviours is what brings about dependability.Describing these behaviours in specific terms, United Nations (2016) indicates that responsible consumers reduce waste; make informed purchases, choose sustainable options when possible and pressurise businesses to adopt sustainable practices. In addition, some countries have defined consumer responsibilities in line with the United Nations Guidelines for Consumer Protection.For example, the Federal Competition and Consumer Protection Commission in Nigeria (2020) and the Consumer Affairs Commission, Jamaica (2020) state that consumer responsibilities include: gathering information and facts about available products to make informed decisions; being alert to quality and safety of products; thinking independently;

speaking out; being ethical; complaining when necessary; sharing product experiences with other consumers; and respecting the environment.From the above, it is obvious that responsible consumption is not only about preserving the environment for future generations but also about enabling a better future for one's self, other consumers, companies, ecological systems, economy and the society at large.Indeed, responsible consumption is a broad concept that includes various kinds of consumption practices such as sustainable consumption, ethical consumption, socially responsible consumption, consumer citizenship and green consumption (Ulusoy, 2016).

Based on the foregoing, this paper identifies three major responsible actsthat can deliver the benefits of responsible consumption:1)Obtain information about available products, analysethem and use the result to choose sustainable alternatives.2) Communicating with others, sharing needs, expectations and experiences of products with relevant people including other consumers, companies, regulators; and 3) Adopting environmental sustainability practices- avoiding waste,littering and pollution by preventing, reducing, reusing and recycling and disposing appropriately.

Hierarchy of Responsible Consumption

A 4-level hierarchy of responsible consumption is presented in this section. The framework was developed based on three factors – 1) insights from reviewing research in consumer behaviour, social psychology and environmental sustainability; 2) theories in psychology and marketing; and 3) the expectations of a responsible consumer based on United Nations guideline for consumer protection. Synthesising the insights, four levels of consumer responsibility were identified namely: ignorant consumer, classical consumer, effective consumer and dependable consumer.

Figure 1: Hierarchy of Responsible Consumption

At the top of the hierarchy is the level 4 – the dependable consumer. The three categories beneath level 4 were arranged based on ease of moving from the current level to the topmost. Consumers do not need to proceed sequentially through each level of the hierarchy to reach level 4. However, level 4 reflects wholistic responsibility, where a consumer is not interested in specific dimensions of responsible consumption but in all. Thus, level 4 possesses the responsible behaviours of consumers at the lower levels plus the special characteristics of level 4 – earth and future mindedness that is driven by selflessness and self-control. The framework can be used by individuals to inspire themselves to the highest level of responsibility. It can also be used by families and organisations that wish to promote responsible consumption to understand why consumers are where they are and what can be done to help them reach the highest level of responsibility. The framework is described more elaborately.

Level 1: The Ignorant Consumer

Consumers at this level are unaware of most or all of their rights and responsibilities. They do not have adequate information and knowledge about safety and quality of products that are available in the market either because they are unable to gather and process the information due to lack of resources, skill and/or time or because they do not care to do so. An ignorant consumer's purchase decision is easily influenced by other people as they can take instructions or advise to consume without asking necessary questions and without much thoughts.

The term ignorance refers to lack of understanding, knowledge and information about something (Widdows, 1986; Scott and Plickert, 2008; Nikolaj, 2015) or intentional disregard of important information and facts. Three types of ignorance, according to Nikolaj (2015) are factual ignorance (absence of knowledge of some facts); object ignorance (unacquaintance with some objects); and technical ignorance (absence of knowledge of how to do something). These three types of ignorance are applicable in the context of responsible consumption. They reflect, for example, in situations when people do not know their consumer rights and responsibilities and when they have limited or no information on sustainability issues such as climate change; when people have never been exposed to any discussion about climate change; and when they do not know how to take required actions such as information gathering and analysis. Ignorant consumers experience losses in transactions due to lack of knowledge and conduct themselves carelessly in the marketplace (Preston, 1973). Their consumption patterns sometimes reflect what Featherstone (1995) describedas the old meaning of consumption that is about destroying, spending and/or wasting resources. Although unintentional, sometimes, the foolishness of the behaviours of ignorant consumers leave negative footprints on the planet.

Inspiring ignorant consumers towards a more responsible consumption pattern

Given that ignorance is a state of lack of knowledge and information, helping ignorant people consume responsibly requires that they receive comprehensive consumer education that equips them with knowledge about responsible consumption as well as the skill to continue to learn about the changing nature of products. Consumer education needs to be both inclusive and extensive so that relevant educational contents can be accessible to various categories of consumers. Even though there is an overwhelming volume of information about products and companies in this 21st century,many consumers are unable to gather the data/information, process them and use the outcomes to support decision making for several reasons including inadequate or lack of money, time and skill to search. Studies such as Ozkan and Tolon (2015) confirm that information overload can lead to confusion and render the consumer even more ignorant.

The role of the family

The family can play important roles in eliminating ignorance in family members. Parents or children who are capable should:

1. teach family members about their consumer rights and responsibilities as well as how best to exercise them.
2. educate family members on the need to obtain and process important information such as information about product quality and safety - contents, expiry, guarantees, warranties, packaging, durability, reliability and serviceability - as well as the practical skills of gathering information, analyzing them and using the results to support consumption choices.
3. assign information gathering roles to members who are more ignorant to enable them to learn by doing.
4. provide resources (money and time) for information search.

Level 2: The Classical Consumer

Consumers in this category have a conservative personality, with a strong preference for long-established and well-known products. They usually purchase durable products which they continue to reuse and repair. Classical consumers may know their rights and responsibilities and have some information about the products they consume. However, they do not know (and may not be willing to know) about other available options that are not of interest to them. These consumers find it difficult to switch from an existing brand that they are fond of to new and innovative brands as they generally avoid change due to their intolerance for uncertainty, ambiguity and chaos. Thus, classical consumers can be loyal to brands for a long time. They usually do not spend money on non-essential items and do not like to engage in conspicuous consumption. Classical consumers do not easily communicate their needs, expectations (if they have) and experiences.

To explain the reason classical consumers, behave the way they do, the seminal works of Wilson (1973) as well the works of Edelman and Crandall (2012), Duhacheck, Dahee and Tomala

(2014) and Van Tonder (2017) among others on conservative behaviour were consulted. These experts agreed that conservative people prefer the status quo and are not comfortable with ambiguity, uncertainty and chaos. They also agreed that conservative people adhere to established ways of doing things and therefore, prefer their safe and secure environment of tradition and order. Conservativeness impacts consumer behavour (Duhacheck *et al.* 2014). For example, conservative consumers tend to be close-minded and will not engage in new product evaluations, but would rather remain loyal to a well-known brand to benefit from cognitive closure and greater certainty (Van Tonder, 2017). Also, Zhou, Wang, Zang&Mou (2013) suggest that conservative people may, due to their preference for long-established traditional order and their intolerance for uncertainty, prefer nostalgic products (i.e. products that have been long in existence). Patronizing long-established products provides a sense of order and security and makes conservative people feel less vulnerable (Zhou *et al.,* 2013). Davis (1979) finds that participants associated words such as "yearning," "old times," and "childhood," with nostalgia. Further, Van Tonder (2017)states that conservative consumers may prefer native products that contribute to job creation, the economy and the general welfare of the citizens of their home country to imported products which they perceive as inferior and may also be reluctant to purchase products for pure hedonic pleasure. Hedonic goods are consumed for experiential pleasure, which implies that the sought-after consumption benefits occur more or less simultaneously with the act of consumption (Khan &Uzman, 2004). Thus, hedonic consumption involves the consumption of products that are entertaining, pleasant, exciting, spontaneous, and amusing (Teller, Reutterer, &Schnedlitz, 2008; Do Vale and Duarte 2013).

Inspiring classical consumers towards a more responsible consumption pattern

Since classical consumers have very little tolerance for uncertainties, ambiguity and chaos, inspiring them to become more responsible require making consumer information unambiguous - clear, concise and orderly. In a series of lab and field studies, Fennis and Wiebenger (2015) foundthat when people have a chronic need for order, they are more attracted to clear, well-defined goals and motivated to attain them. Burdner(as cited in Van Tonder, 2017) argues that ambiguity is caused by novelty, complexity and insolubility and could make a classical consumer shun important information. Some information that scientists present about climate change are complex and, with a lot of scientific jargons, they could be insoluble to some consumers. It is important to understand that, although climate change is a scientific matter, it is everybody's business given that its solution requires everyone to take specific actions.

Besides, even though conservative consumers do not like change, they can change if the change process is strategically structured for them. First, the change process should not be too complex and stressful. Ease, simplicity and clarity are key considerations in designing change for classical consumers due to their intolerance for ambiguity and stress. Furnham and Richester (1995) and Van Tonder (2017) discover that when individuals who have intolerance for ambiguity encounter stressful situations, they adopt readily available beliefs and take decisions without further investigation or search for an alternative. This behaviour is described as a need for cognitive closure (Kruglanski, Webster &Klem, 1993). Second, linking the change (desired behaviour) to an established traditional order which classical consumers feel safe with could make it easier for them to change since they do not want to deviate from tradition. The change process designed for classical consumers needs to be gradual because fast change may make the deviation from tradition obvious, chaotic and stressful. Messages that can reduce or eliminate classical consumers' feelings of uncertainty and insecurity towards the new behaviour should be embedded in the change process. It is the feeling of uncertainty and insecurity that make conservative people long for the status quo (Pickering &Keightley, 2006).

The role of the family

Families can do the following to inspire members who are classical to consume more responsibly.

1. Parents or any capable member could improve a classical member's ability and willingness to search for and analyse information about innovative products by assigning information-related roles to this member and encouraging the person to perform the role. For example, such a member could be asked to search for information about alternatives to support family purchase decision or asked to share the family's experiences of products.
2. As children grow into adulthood, they should gradually and respectfully resist the pressure from parents to stick to traditions that do not embed sustainability. The children could make efforts to change their parents' consumption pattern as well as coach their siblings to embrace sustainability.
3. Parents should establish a sustainable consumption pattern as the family culture so that members can grow with it. The family also needs to ensure that members understand the idea that responsible consumption is a lifelong responsibility and that the family needs to continue to learn about the changing nature of the products and environment in order to keep making necessary changes.

Level 3: The Effective Consumer

Effective consumers are exploratory and goal-focused. They know their rights and responsibilities and have a lot of knowledge about products that are available in the market. Effective consumers usually like to learn of new offerings; try new products; compare quality and prices of options as well as read and share product experiences with others including consumers, companies and regulators. These consumers are likely to be loyal to businesses that are innovative, responsive and trendy. They embrace environmental sustainability sometimes when it is in line with their consumption goals. This is not strange as studies have confirmed that people embrace sustainability because of perceived personal factors or benefits (Marchand & Walker, 2008). However, it is this selfish approach to sustainability that differentiates effective consumers from dependable consumers.

Across decades, consumer behaviour researchers including Nunnally and Lemond (1974) Raju (1980); Hirschman (1980) McAlister and Pessemier (1982); Baumgartner and Steenkamp (1996); and Dastidar (2016) commonly agree that the behaviours that have strong exploratory components are taking risks, being innovative, switching brands, information search, shopping, and communicating about product experiences among others. Some researchers argue that most times, consumers exhibit exploratory behaviours to gain satisfaction from the activity itself and not in any eventual outcome (Nunally&Lemond, 1974; O'Neil & Drillings, 1994). However, the exploratory activities of effective consumers such as information search and innovativeness are goal-driven. Effective consumers perform the activities to achieve concrete goals such as the purchase of a brand and not just for the fun of performing the activities. Researchers such as Hirschman (1980); Steenkamp and Baumgartner (1992); Moe (2003); and Pfeiffer, Meibner, Prosiegel and Pfeiffer (2014) suggest that two broad motives underlie information seeking. According to the authors, the information could be sought as a means to some further end and information could also be sought out of curiosity, just to learn more about something. In the latter case, the acquisition of information is an end in itself. Steenkamp and Baumgartner (1992), based on their findings, stated that it is difficult to separate true curiosity-driven information seeking from goal-directed information seeking. However, more recent studies indicate that there is a clear distinction between the two. Thus, research by Moe (2003) suggests that goal-directed search and curiosity-driven search situations are linked to very different consumer motivations. Pfeiffer et. al. (2014) explainthat in goal-directed situations, consumers need specific information such as product alternatives to find the alternative that best matches their individual preferences while in a curiosity-driven situation, a consumer will be primarily scanning and gathering general information about the available products.

Inspiring effective consumers towards a more responsible consumption pattern

Nudging effective consumers to reach the highest level of responsible consumption involves positioning responsible consumption as a goal that is worth pursuing. Goals can be motivated by internal or external factors (Austin & Vancouver,1996) but what is important is that the individual makes a personal decision to pursue the goals. Hence, consumers can be led through a deliberate goal-setting process by helping them understand the 'what', 'why', and 'how' of responsible consumption. That is, what responsible consumption is about, why they should consume responsibly and how they can consume responsibly. The 'what' and 'why' need to be convincing and the 'how' needs to be feasible for the consumer to see responsible consumption as desirable and feasible. If the 'what' and 'why' presented are not compelling enough, responsible consumption will remain mere wish or fantasy. Similarly, if the 'how' does not seem feasible, the consumer may not pursue the goal. Thus, according to Pieter and Baumgartner (2014), the general principle of expectancy-value theories is that the more desirable and feasible the goal, the higher the likelihood that it will be pursued. It is important to ensure that the goals are personally meaningful and valuable (Pfeiffer *et al*., 2014)as well as attractive (Winell, 1987)to the pursuer.

In addition, making consumer information about responsible consumption, climate change and sustainable products more visible and easily accessible is important so that consumers can get the information anduse them in decision making. It requires making such information available and accessible from multiple sources, including sources where consumers can easily access them with little or no charges. It is also important to make them comprehensible so that consumers can understand and use them without special language or data analysis and interpretation skills. Also, several studies have revealed that consumers usually perceive sustainable options as inferior, less aesthetically pleasing, and more expensive (Bonini&Openheim, 2008; White et al., 2019). These conditions need to change for effective consumers who generally appreciate innovations to find sustainable products attractive.

The role of the family

The family can help members who are effective consumers by doing the following:

1. Discuss responsible consumption at home with an emphasis on why the family should consume responsibly and how the family can consume responsibly so that family members could form goal intentions around responsible consumption
2. Parents or any capable member of the family could lead members through a goal-setting session by first thinking about the what, why and how and putting them in ways that will appeal to the different family members.The goals should be linked to domains and values that the family member(s) appreciate the most.
3. Parents should monitor the kind of products that interest their children and work with them towards a more responsible consumption pattern. Effective consumers in families could be assigned to search for information on sustainable product alternatives and choose sustainable options for the family.

Level 4: The Dependable Consumer

Dependable consumers know and exercise their rights and responsibilities. They gather, process and use information about products to support decision making. They communicate their needs, expectations and experiences with other consumers, companies and regulators. Thus, dependable consumers possess the communication skills of effective consumers but are different when it comes to environmental sustainability. Unlike effective consumers who embrace sustainability only when it is the best means to their goals, dependable consumers consistently set and pursue consumption goals that sustain them and others.Their choices of what and how to consume is not just influenced by the need to meet their own goals but also by the need not to prevent other beings from meeting their own goals. Thus, dependable consumers are selfless people who subjugate their own selfish goals to a greater ambition of a better world and better future for coming generations. Indeed, selflessness is a prominent characteristic of responsible consumers (Marchand & Walker, 2008; 2010; Ulusoy, 2016) and because they are consistently selfless, other consumers, companies, regulators, eco-systems and future generations can depend on the level 4 consumer for constructive communicationsand consumption behaviours that support their sustainable survival.

Level 4 consumers manifest strong loyalty for brands that embed sustainability. They nudge companies to adopt sustainability practices byconsistently patronising sustainable products; giving constructive feedback to companies and sharing product experiences with other consumers. Research shows that level 4 consumers are statistically rare (White, Hardisty& Habib, 2019;IKEA, 2019).People who are selfless and disciplined in thoughts and actions can reach level 4 easily but those who are selfish and lack self-control will have difficulty reaching level 4.The family is responsible for planting the seeds of level 4 (selflessness and self-control) in their members and coming generations.

Conclusion

Responsible consumption can help families enhance the quality of their lives and the lives of others as well as minimize waste and reserve some resources for coming generations. This paper provides a framework for understanding different kinds of consumers and how families can help each member consume responsibly.

Recommendation

1. The framework may be used in future sustainable consumption campaigns, education, consultation and research.
2. More research is required to comprehend consumer behaviour relating to responsible consumption.
3. There is a Empirically test of the theoretical assumptions made in this article.
4. Explorationb of how the change to more sustainable consumption patterns in families can be influenced from bottom-up.

5. Evoling practical ways children can influence parents to make the change that is required, especially children with conservative parents who have irresponsible consumption traditions. It is expected that knowledge of these issues raised in this paper may lead to a deeper understanding and more successful promotion of responsible consumption for sustainable family survival.

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Prevalence, Benefits and Challenges of Commuter Marriage among Married Staff Members of Universities in South-East Nigeria

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Abstract

This study focused on commuter marriage. Specifically, it determined the prevalence of commuter marriage, its benefits and challenges among married members of staff of Universities in South-East Nigeria. Cross-sectional survey design was used for the study. Population was made up of 25,334 married members of staff of universities in South-East, Nigeria. Stratified random sample of 2310 was drawn from the population. Questionnaire was used for data collection. Internal consistency of the instrument was 0.82. Data were analyzed using means, standard deviation, frequencies and percentages. Findings show that there was a high prevalence (41.5%) of commuter marriage in universities in South-East, Nigeria. Seven benefits of commuter marriage were identified. These include building trust and commitment, feelings of independence and personal fulfillment; with mean ($\overline{X}$) values of 3.09, 2.96 and 2.60 respectively. Nine challenges in commuter marriage include, financial burden of maintaining two homes, impatience and trust issues as well as difficulties in maintaining job and life with mean ($\overline{X}$) values of 3.45, 3.09 and 2.71 respectively. Commuter marriage has variables that can affect family stability such as finances and sexual intimacy; therefore, couples should be aware of the benefits and challenges of commuter marriage and be mentally prepared before they decide to embark on commuter marriage.

Keywords: Marriage, Commuter, Prevalence, Benefits, Challenges, Spouse.

Introduction

Marriage is the union of a man and a woman, who make a permanent and exclusive commitment to each other which is naturally fulfilled by bearing and raising children together (Girgis, George & Anderson, 2011). It is a union of a man and a woman to become husband and wife. For a marriage to be statutory in Nigeria, it must be permitted or recognized by law, it must be with the consent of both parents and the parties involved, and it must adhere to a prohibited degree of consanguinity and affinity (Kalau, 2018). Individuals get married for different reasons such as for companionship, emotional support, sexual fulfilment and childbearing, financial purposes, to acquire status in the society as well as proof of adherent to societal norms (Kariuki, 2014). According to Kalau (2018), there are different types of marriage in Nigeria today and they include customary marriage, traditional marriage, religious marriage, and civil marriage also known as court marriage.

Ideally, in marriages, couples live together geographically and emotionally and settle down to childbearing and parenting while still progressing with their careers. However, married couples have not always lived together. Spouses have lived separately for a variety of reasons, including war, military service, immigration, the demands of traveling occupations (such as sales work, seasonal labor, and construction work), incarceration, institutionalization, and marital discord. One type of relationship between husband and wife that has emerged since the 1970s involves relatively well-educated professionals who live apart in service to their careers (Lindermann, 2017; Oakes & Brown, 2016). This type of marital relationship is referred to as commuter marriage.

Commuter marriage is a marriage which occurs when two spouses in a committed marriage live in separate houses but travel to be together when possible (Oakes & Brown, 2016). It is a type of marital lifestyle in which married couples decide voluntarily not stay together with each other, and is separated by a certain distance in order to meet the demands of their work or profession (Nastiti&Wismanto, 2017). The couples voluntarily establish a second household and spend at least three nights each week in different residences. This type of marriage are usually characterized by one spouse being resident in the family home, often with work and child-care responsibilities, while the other spouse works and lives away from home for extended periods (Glotzer&Federlien, 2007; Nastiti&Wismanto, 2017).

The trend of commuter marriage in the whole world and especially in Nigeria showed that the incidence of commuter families is becoming more common. It is difficult to estimate the number of commuter families in Nigeria because there are no official figures available and the research in this area is scarce in Nigeria (Ortega, Abdulla &Roslan, 2014). International data available reveal that since 1999, the number of commuter couples in the United States has increased from 700,000 to over a million (Jackson, Brown& Patterson-Stewart, 2000); and about a million married couples have opted to become commuter families (Magnuson &Norem, 1999) and these figure increases every year.According to Glotzer and Federlein (2007), the lack in data on commuters has made them an invisible group despite the increase in the numbers of commuters and commuter families. As a result, commuters and their families are still not regarded as distinct group in many countries.

Nigeria is a country with an estimated population of 182 million (National Population Commission (NPC) of Nigeria, 2011).Nigeria is currently undergoing broad economic changes. With increased industrialization, that began to occur on a large scale in the 1960s, many people have moved to larger citiesin search of employment and have established a migrant work pattern—where the man will leave his family for a period of time to search for employment, and the woman will stay in the family home and attend to child-care responsibilities (Schvaneveldt, Young &Schvaneveldt, 2001). South-East is one of the six geo-political zones in Nigeria comprising of Abia, Anambra, Ebonyi, Enugu and Imo states (Ibenegbu, 2018). It is one of the educationally advanced areas in Nigeria and a home to many educational institutions including universities (Nwankanma, 2010; Ibenegbu, 2018).These institutions constantly create employment opportunities for individual in their environs. For this reason, there is a rapid influx of women in the workforce in South-East Nigeria (Perry, 2015).

Traditionally in the SouthEastern states of Nigeria, once a woman is married and has children, the expectation is that she stays at home and takes care of the children. This attitude is changing, however, because some women are involved in professional occupations and also choose to marry, have children, and maintain a career (Kumswa, 2018). Kumswa further noted that more often than not, the geographical locations of the wok of these women do not coincide with that of their spouses. One spouse may be required to work in a city many miles from where the other spouse is required to work. Given the perceived benefits of such anemployment, some couples decide to have two separate living residences in order to maintain their careers and continue their marital relationship as well.

Studies have shown that there are many motivations and benefits for engaging in commuter marital relationships such as increased autonomy, career and educational achievement, less overall role strain, enhanced self-esteem and confidence, opportunities to develop self-identity and increase self-gratification (Anderson & Spruill, 1993; Bunker, *et al.,* 1992; Fulman, 1993; Jackson *et al.,* 2000; Magnuson and Norem, 1999; Rhodes, 2002). Other literatures on commuter marriage observed that commuter marriage affects the couples' quality of relationships among family member (Glotzer and Federlein 2007; Häfner 2011; Sahlstein 2006; Tarmuji *et. al.,* 2016). This is because a family function is built to get happiness, peace, sharing the joys and sorrows, to help and complement each other. Unfortunately, some young couples have been compelled to live apart from the onset of marriage when they are expected to live together, share intimacy and building strong families. Thus, many people are married but remain strangers to each other. This is a serious threat to beginning families and family survival in many dimensions.

The drawbacks of living separately as a married couple as reported by researchers include feelings of loneliness and isolation, feelings of abandonment and guilt (especially parents), overall less satisfaction with life probably due to less emotional support on a day-to-day basis, and less satisfaction with partner and family relationships compared to non-commuter couples (Jackson et. al., 2000; Landesman, 2013; Tarmuji *et. al.,* 2016; Lee, 2018).

The trend of commuter marriage is now on the increase and has led to great concerns in relation to family stability. If this is allowed to progress, it is possible to experience more instability in families in the future. This is a challenge and there is need to remedy the situation or come up with coping strategies. This study therefore tries to ascertain the prevalence of commuter marriages in South-East Nigeria and identify the issues and challenges facing commuter couples with a view to finding solution to more stable and happier relationships in marriages.

Purpose of the Study

The major purpose of the study was to ascertain prevalence, benefits and challenges of commuter marriage among married staff in universities in South-East Nigeria. Specifically, the study determined:

1. prevalence of commuter marriage among married staff in universities in South-East Nigeria;
2. benefits derived by couples practicing commuter marriages in universities South-East Nigeria and;
3. challenges encountered by couples practicing commuter marriages in universities in South-East Nigeria.

Research Questions

The study was guided by the following research questions:

1. What is the prevalence of commuter marriage among married staff in universities in South-East Nigeria?
2. What are the benefits derived by couples practicing commuter marriages in universities South-East Nigeria?
3. What are the challenges encountered by couples practicing commuter marriages in universities in South-East Nigeria?

Methodology

Design of the Study**:** The descriptive survey research design was adopted for this study.

Area of the Study**:** This study was carried out in the South Eastern zone of Nigeria. South-East Nigeria is made up of five states namely: Abia, Anambra, Ebonyi, Enugu, and Imo states. The study was specifically carried out in the universities of South-East Nigeria. There are seventeen universities in South-East Nigeria made up of five federal universities, six state universities and six private universities.

Population of the Study**:** The population was made up of 25,334 married staff of universities in South East Nigeria. The distribution of the population is as follows: federal universities- 17,820, state universities- 6,360 and private universities- 1,154

Sample for the study**:** The sample size used for this study was 2,310 married staff of universities in South-East Nigeria. This was calculated using the formula by Daniel (1999). Simple random sampling technique and stratified random sampling technique were used for this study. The universities were stratified into Federal, State and Private universities. A total of six universities were selected from the strata for the study using simple random sampling (ballot without replacement), selecting two universities from federal, state and private universities. Sample size was drawn for each stratum using stratified sampling technique. Thus, sample size of 1,635; 375 and 300 was drawn from federal, state and private universities respectively, making a total of 2,310 respondents for the study.

***Instrument for Data Collection*:** questionnaire was used for data collection. It was designed to obtain quantitative data for the study. It was developed based on literature review and the research questions. It was validated by three University lecturers who are experts in Family Living. Cronbach's Alpha Reliability Coefficient index was used to determine the internal consistency of the instrument. This result yielded a reliability coefficient of 0.85.

***Method of Data Collection*:** A total of 2,310 copies of the questionnaire were distributed by hand to the respondents, with the help of research assistants. Only 2,218copies were properly completed and returned. This represents 96.0% return.

***Method of Data Analysis*:** Data on prevalence of commuter marriage (specific purpose 1) were analyzed using frequencies and percentages. Data on benefits and challenges of commuter marriage (specific purpose 2 and 3) were analyzed using means and standard deviation. Any item with a mean equal to 2.50 and above were accepted as agreed while means below 2.50 were regarded as disagreed based on the four-point rating scale.

Results

Prevalence of commuter marriage among married members of staff of universities in South-East Nigeria

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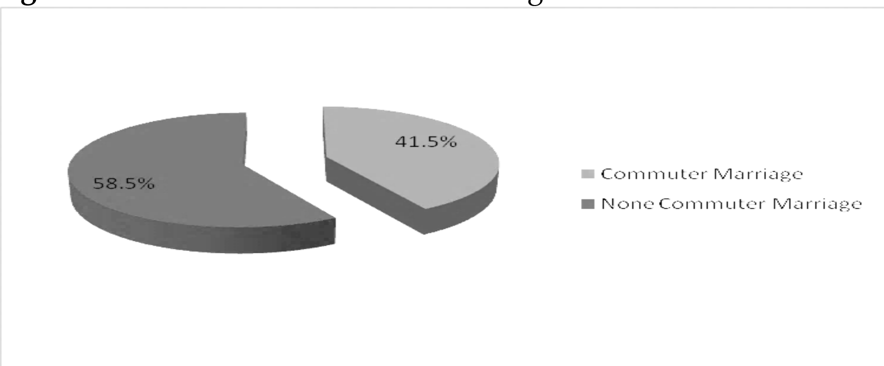
Figure 1: Prevalence of commuter marriage in universities in South-East Nigeria.



Data analysis shows a prevalence of 41.5 percent of married members of university staff in South-East Nigeria were in commuter marriage.

Benefits derived by couples practicing commuter marriages

Table 1: The Benefits Derivedby Couples Practicing Commuter Marriage.

Benefits of Commuter Marriage	$\bar{X}$	S. D	Remark
1. I feel independent	3.0	0.74	Agree
2. Enhances communication skill	2.3	0.61	Disagree
3. Enhanced self-esteem and confidence	2.4	0.89	Disagree
4. Improved relationship with children	2.7	0.86	Agree
5. Good financial stability	2.6	0.62	Agree
6. Personal fulfillment	2.6	0.61	Agree
7. Intense emotional intimacy	2.6	0.57	Agree
8. Lower anxiety and depression	2.4	0.57	Disagree
9. Building trust and commitment	3.0	0.72	Agree
10. Valuing our time together more	2.8	0.86	Agree

$\bar{X}$ = Mean; S.D. = Standard deviation

Table 1 shows the mean ratings of the responses of married staff on the benefits they derive from practicing commuter marriage. items 1, 4, 5, 6, 7, 9 and 10 were rated above the cut-off point value of 2.50 on a four-point rating scale while item 2, 3, 8 were rated below the cut-off value. This indicates that most married staff agree that there are some benefits which they derive from commuter marriage and they include feelings of independent (3.0), building trust and commitment (3.0) valuing time spent together (2.8), improved relationship with children (2.7), personal fulfilment (2.6), good financial stability (2.6) and intense emotional intimacy (2.6). Generally, these respondents agree that there are benefits gotten from practicing commuter marriage (2.6).

Challenges encountered by couples practicing commuter marriages

Table 2: The Challenges Couples Running Commuter Marriage Encountered in South-East Nigeria.

S/N	Challenges of Commuter Marriage	$\bar{X}$	S. D	Remark
1.	Decreased sexual intimacy	2.8	1.21	Agree
2.	Impatience and trust issues	3.1	0.86	Agree
3.	Increased financial burden of maintaining two homes	3.4	0.57	Agree
4.	Increased anxiety and depression	3.0	1.16	Agree
5.	Loneliness and fear of growing apart	2.9	0.57	Agree
6.	Non-involvement in children's lives	2.5	0.92	Agree
7.	Stress from daily decision making	2.5	0.91	Agree
8.	Difficulties in maintaining family and job life	2.7	0.94	Agree
9.	Lack of communication	2.6	0.63	Agree
10.	Frequent conflict	2.1	0.86	Disagree

$\bar{X}$ = Mean; S.D. = Standard deviation

Table 2shows the mean ratings of responses on the challenges facing commuter couples in universities. The result shows that the challenges faced by couples practicing commuter marriage include financial burden of maintaining two homes ($\bar{x}$ = 3.4), impatience and trust issues ($\bar{x}$ = 3.1), increased anxiety and depression ($\bar{x}$ = 3.0), loneliness and fear of growing apart ($\bar{x}$ = 2.9) and decreased sexual intimacy ($\bar{x}$ = 2.8) amongst others.

Discussion

The results of this study revealed a 41.5% prevalence of commuter marriage among the respondents. This is considered a high prevalence and could be attributed to the increased number of dual earner couples in the modern society. This finding is similar to the findings of Schvanevedlt *et. al*. (2001) who reported that 41% of married couples in Thailand were in commuter marriage. Jackson *et. al.* (2000), reported that the prevalence of commuter marriages in United States increased form 39% in 1970 to 61% 1993 and attributed it to the increase in the proportion of women in the workforce. This suggests that the number of couples living apart for the sake of their jobs is expected to be on a steady rise as more women join the workforce and earn a living.

This study has identified several benefits commuter couples derive while in commuter marriage. The identified benefits include feelings of independence, personal fulfillment, good financial stability, intense emotional intimacy as well as building trust and commitment. These items identified are in line with reports by Jackson et al., (2000), Oakes and Brown (2016) and Ortega et. al. (2014). These authors agree that through personal fulfillment, an essential part of the commuter couples were been expressed. The significant factor in experiencing greater personal fulfillment was furthering one's education and obtaining a position that matched the individual's knowledge and skill. Thus, prospects in employment required some individuals to commute to obtain the personal fulfilment that they desired.

Furthermore, in line with Ortega *et. al*., (2014) and Oakes and Brown (2016), couples more intentionally engage in activities and behaviors that demonstrated love, respect, trust and appreciation for each other. Respondents also noted that time spent with each other had increased in its purposefulness and importance due to the limited time they had with each other. Couples who had lived the commuter lifestyle longer believed that their appreciation of each other had grown stronger over the years and have the impression that commuting helped in this growth.

The challenges faced by commuter couples include difficulty in maintaining family and job life, loneliness and fear of growing apart, increased financial burden of maintaining two homes, increased anxiety and depression as well as impatience and trust issues. These challenges have contributed to the negative perception of this lifestyle. Wismanto and Nastiti (2017) stated that commuter couples face difficulties in bearing the family alone, suffer stress from daily decision making and have difficulties in maintaining family and job life. This is because roles and responsibilities are much heavier in commuter marriages and couples do not face these together unlike couples who live together. Again, Jackson et. al. (2000), in line with the findings of the study, revealed that the feelings of loneliness and fear of growing apart manifests during the absence of the commuter partner whenever the family needs them and they are not there. Thus, husbands and wives have come to experience the other's presence as anomalous. Swastiningsih (2014) also reported that loneliness opens the possibility for interest in people other than their partners. Furthermore, researches by Glotzer and Federlein (2007) and Tarmuji *et. al.* (2016) supports the findings of this study as they reveal that commuter couples are weighed down by the financial cost of maintaining two homes. This is because the employers of these couples do not support everything they spend to live away from home. These couples spend monthly earning on cost of living, travel, utility, maintenance of two residences and other miscellaneous expenses. This however tends to defeat the aim of being financially stable which is one of the reasons stated in this study for embarking on commuter marriage.

In addition, Rhodes (2002), in line with the findings of this study, reported that commuter marriage increases anxiety, depression, and impatience and mistrust in marital relationship. This is because when couple maintains a schedule that keeps them apart for more than a month at intervals, they begin to develop separate worlds, fall out of touch with each other and their relationship might no longer provide security and stability for their lives. The couples are also more likely to imagine unrealistic expectations and fantasies about their time together. These expectations results in disappointment, frustration and resentment. These issues have a negative effect on the relationship between the husband and wife in commuter marriage and thus increase the risk of separation and divorce in the society.

Conclusion

Commuter marriage seems to be a common phenomenon in universities in South-East Nigeria due to work obligations which force the couple to be away from each other for weeks. From this study, it can be concluded that there is a high prevalence of commuter marriage among staff of universities in South-East Nigeria and the trend is expected to continue to be on the increase. The marital life style comes with various benefits which include feelings of independence, personal fulfillment, building trust and commitment as well as intense sexual intimacy. It is also associated with various challenges which could thwart the purpose of marriage if not properly handled.

Recommendations

Following the findings of this study, it is recommended that:

- Couples should be aware of the benefits and challenges of commuter marriage and be mentally prepared before they decide to embark on commuter marriage. This is to ensure that the couples enjoy their marriage and have a better quality of life with their family.

- Further research is recommended to determine the impact of commuter marriage on marital satisfaction as well as on family relationships in Nigeria by comparing the lives of commuter couples with that of non-commuter couples.

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Food Hygiene Practices among Food Vendors in Ikorodu Local Government Area of Lagos State

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Abstract

This study was to investigate hygiene practices among food vendors in Ikorodu Local Government Area of Lagos State. Three research questions were answered. Survey research design was employed. The population for the study was made up of all the 302 registered food vendors in Ikorodu LGA who have permanent locations. The sample consisted of 150 food vendors. .Questionnaire was used for data collection. It was validated by three experts in Home Economics. Data were analysed using mean and standard deviation. Mean rating from 1.50 and above (>1.50) were considered as "agreed" while any mean less than (<1.50) was considered "disagreed". Results show that 100% of the food vendors are aware of food hygiene practices, 100% claimed they adopt food hygiene practices and 100% also claimed they usually adopt basic environmental food hygiene practices in Ikorodu Local Government Area in Lagos State. Based on the findings, it was recommended, among others, that food vendors must be monitored frequently to ensure proper handling of food and sustain environmental cleanliness.

Keywords: Food, Hygiene, Knowledge, Awareness, Vendors, Practices, Environment.

Introduction

Food hygiene deals with the prevention of contamination of food stuffs at all stages of production, collection, transportation, storage, preparation, sales and consumption. Food hygiene practice is a broad term used to describe the preservation and preparation of foods in a manner that ensures the food is safe for human consumption Soon *et.al,* (2011). Food handlers are persons who directly handle packaged or unpackaged food, food equipment and utensils or food contact surfaces and are therefore expected to comply with food hygiene requirements Rosmawati, (2014).

The establishment and proliferation of fast food industries, food vendors and local eateries in nooks and crannies of Lagos state, has been recognized as one of the forces that boosted the economy of the state,(Bamidele, 2015). Westernization, urbanization and the need to struggle for daily survival has made many Nigerians especially in Lagos to abandon the culture of cooking at home. Foods at these eateries are available, accessible and sometimes affordable (Soon *et al*, 2011). These food premises also employ a significant number of staff who handles food items from the stage of processing to marketing. Food handlers in these food premises are responsible for food safety throughout the chain of producing, processing, storage and preparation (Chukwuocha*et al.,* 2009). Mishandling and disregard for hygiene measures on the part of these food handlers may result in food contamination and its attendant consequences including food poisoning and spread of diseases with resultant morbidity and occasional mortality (Bamidele*et al*., 2015).

As a matter of public health importance, food hygiene practices employed in this food marketing sector would play an important function in ensuring that safe food is available for consumption (Majara, 2010). Safe foods ensure minimal risks and hazards to human health through protecting and preventing edible substances from becoming hazardous in the presence of chemical, physical and biological contaminants that deteriorate or spoil the food. Contaminated food represents one of the greatest health risks in a population and a leading cause of disease outbreaks and transmission. Factors contributing to poor food hygiene practices among food handlers include ranging ignorance, uncaring and poor attitude to personal hygiene, lack of basic hygiene infrastructure and sanitary facilities such as water, soap and toilets and lack of appropriate food storage and preservation facilities. Unavailability of trained staff has also been identified as one of the barriers to effective practice of food hygiene. Many food handlers ignorantly believed that their products were of relatively low risk to the consumers (Bamidele*et al*., 2015).

A study carried out among food handlers in a Nigerian community showed a predominantly poor level of food hygiene knowledge, very low frequency of hand washing practices and low level of personal hygiene generally (Ekanem, 1998). Unfortunately, the agency of government saddled with the responsibility of regulating food sale and marketing, National Agency for Food and Drug Administration and Control (NAFDAC) acts centrally, and little or no emphasis is placed on such regulation at state and local council levels. Past epidemics of food borne diseases outbreak in the region usually do not focus on food handlers in local eateries despite common knowledge that they may be carriers of infectious diseases. In 2008, NAFDAC commenced nationwide crackdown on fast food outlets following an outbreak of food poisoning in Nigeria and consequently the closure of some popular eateries (Bamidele*et al*., 2015).

Environment has a significant role to play in food safety and hygiene practices. Environmental health has been defined by World Health Organization (WHO) as cited by Carvalan, (2000), as the control of all those factors in the physical environment that exercise or may exercise deleterious (harmful) effects on the physical development, health and survival of man. In like manner, Ademuwagun and Oduntan (1986) defined environmental health as the provision and control of all those factors in people's physical surrounding which can affect their health. Following the establishment of the Environmental Health officers' Registration Council of Nigeria in 2007, efforts have been made to raise the level of environmental health practices in the country. Environmental health policies and programmes play major role in disease prevention, control and the sustenance of environmental health integrity worldwide, Muyanja et,al (2011). The reality as agreed by experts is that, over 70% of diseases causing the highest morbidity and mortality in the country are environment related, thus, making the control of environmental health practices crucial in the efforts of government to alleviate poverty and achievement of the Millennium Development Goals (MDGs).

Food vending has become a common feature of most cities and towns in Nigeria (Ekanem, 1998). The phenomenal increase in the patronage of food vendors is due to the growth industrialization and urbanisation which is forcing many city dwellers to eat their major daily meals out of home (Alimi*et al*., 2014). In addition to the pressure of urban life, most urban dwellers patronises food vendors because of the relative cheapness of ready-made instant meals and their gustatory attributes, these attributes are linked to the culinary prowess of the vendors (Dimelu2019).

The economic importance of the activities of food vendors are not well appreciated due to the informal nature of the enterprise and lack of official data on volume of trade involved (Alimi, 2016).Alimi (2016) reported the significant contribution of restaurants to nutrition and food security for millions of practitioners along the food chain. Draper (1996) also identified them as potential vehicles for micronutrient fortification. Food vendors, sometimes referred to as Street Food Sellers in Ikorodu, makes up a significant proportion of informal sector of the economy of Lagos state and most developing countries. Food vendors play major role in ensuring food safety throughout the chain of production, processing, storage and preparation of food, Olutayo (2009). Mishandling and disregard for food hygiene measures on their part may result to food contamination and its attendant consequences (Akinbode *et' al*, 2011).

Most of the food vendors in Ikorodu are not only appreciated for their unique flavours, convenience and tasty food out they have also become important and essential for maintaining regular, affordable and traditional dishes to the majority of people especially the low-income group. Urbanization has changed the pattern of living and eating in Ikorodu. Most working class people leave home very early and come back late at night, (Madah 2016). The easy availability of foods in the streets of Ikorodu has helped many workers, students and other people to cope with long periods of absence from home. Increase in the numbers of meals eaten outside the home has led to a large growth of the food service industries particularly in Ikorodu area.

Ikorodu local government area is one of the fast growing densely populated area in Lagos State. Lagos State polytechnic as well as a private university, two General Hospital and a lot of privates hospitals, a number of public and private high schools, primary schools, estates of various company, textiles and other foreign factories with many other industries that bring people into Ikorodu from far and near. In view of this, there is a rise in students and workers population and this has created the need for more food services which in tune led to increase in food vending. Though the environment in which the food is vended physically look clean, there is still a need to investigate the hygiene practices adopted by these food vendors.

Purpose of Study

The main purpose of the study was to investigate the hygiene practices adopted by food vendors in Ikorodu Local Government Area of Lagos State. Specifically, the study determined the extent to which food vendors:

1. are aware of food hygiene practices in Ikorodu Local Government Area.
2. adopt food hygiene practices in Ikorodu Local Government Area.
3. Adopt environmental food hygiene practices in Ikorodu Local Government Area.

Research Questions

The following research questions guided the study:

1. What is the extent of awareness of food hygiene practices by food vendors in Ikorodu local government area?
2. What is the extent of adoption of food hygiene practices by food vendors in Ikorodu local government area?
3. What is the extent of adoption of environmental food hygiene practices by food vendors in Ikorodu local government area?

Methodology

Design of the Study: Cross-sectional survey research design was employed in the study to gather data on the population. Cross-sectional surveys are studied aimed at determining the frequency of a particular attribute in a defined population at a particular point in time.

Area of the study**:** The area of the study was Ikorodu Local Government Area which is situated in the north-east of Lagos State. It is located along the Lagos Lagoon and share boundary with Ogun state. It is a city with fast growing population being a sub-burb in Lagos metropolis. There are five (5) Local council development area in Ikorodu. They are: Ikorodu North, Ikorodu West, Imota, Ijede, and Igbogbo-Bayeku. Ikorodu is inhabited by different religious and ethnic groups. Highly industrialized with a lot of foreign industries, institutions and factories which include: textile factory, production industries, PZ industries, housing estates, general/public and private hospitals, public and private schools, Lagos state polytechnics and private university. Ikorodu is the largest terminal of Lagos popular Bus Rapid Transport (BRT) station. With the increase rise of populace migrating from the Island and Mainland in Lagos to Ikorodu, people working at the Island leave their homes very early to beat the traffic and come back late. This situation gives room to high patronage of food vendors in Ikorodu.

***Population of the Study*:** The population of the study was made up of all the registered food vendors in Ikorodu LGA who have permanent locations. The total number of registered food vendors in Ikorodu LGA is 302 (Ikorodu Revenue office, 2017).

***Sample for the study*:** The sample size for the study consisted of 150 food vendors which made up 50% of the population. Multistage sampling procedure was used. First step involved purposive random selection of six (6) food vendor outlet with up to five (5) workers and above from each of the five (5) local council developments. That is, 5 from Ikorodu North,5 from Ikorodu West,5 from Ijede,5 from Imota and 5 from Igbogbo-Bayeku. Making a total of 30 food vendors' outlets. The second step involved random selection of five (5) regular staff from the 30 selected food vendors outlets in the 5 local council development in Ikorodu Local government Area; this making a total 150 respondents who constituted the sample for the study.

***Instruments for Data Collection*:** Questionnaire was used for data collection. The questionnaire was divided into four (4) sections: Section A, B, C and D, covering demographic variables, awareness of food hygiene practices, adoption of food and environmental hygiene practices. The instrument was validated by three (3) experts in Home Economics. Their suggestions were used to modify and improve the instrument. It was pilot tested on 20 food vendors from Ogun State for reliability. Internal consistency was determined. Cronbach alpha reliability coefficient of 0.89 was also obtained.

***Data collection Method*:** the researcher and two (2) research assistants distributed 150 copies of the questionnaire at designated food vendor's outlets by hand. The 150 copies of the questionnaire were duly filled and returned representing 100% return rate.

***Methods of Data Analysis*:** Data collected for the study were analyzed using mean and standard deviation. Mean rating from 1.50 and above were considered agreed while any mean less than 1.50 was considered disagreed.

Findings of the study

Research Questions 1: What is the extent of awareness of food hygiene practices by food vendors in Ikorodu local government area?

Research Questions 2: What is the extent of adoption of food hygiene practices by food vendors in Ikorodu local government area?

Table 1: Mean responses and Standard Deviation on the extent Awareness (aw) and Adoption (ad) of food hygiene among food vendors in Ikorodu Local Government Area of Lagos State.

S/N	Indicators of awareness of food hyg practices;	$\overline{X}aw$	SDaw	$\overline{X}ad$	SDad	Remark
	I am aware that:					
1.	Proper washing of hands before handling of food items is necessary.	2.65	0.33	2.72	0.30	Agreed
2.	Proper washing of food items before cooking is necessary.	2.41	0.50	2.40	0.48	Agreed
3	Proper washing of plates before and after serving of food to customers is necessary.	2.64	0.32	2.22	0.59	Agreed
4	Washing of hands and wearing of apron while preparing and serving food is necessary.	2.46	0.42	2.36	0.49	Agreed
5	Covering of food in warm up stainless plate before serving to customers is necessary.	2.25	0.64	2.12	0.53	Agreed
6	Preservation of food in fridge before use is necessary.	2.20	0.72	2.52	0.39	Agreed
7	Proper bath or shower daily before attending to customers is very necessary.	2.39	0.46	2.45	0.65	Agreed
8	Reheating of the food before serving to customers is necessary.	2.34	0.60	2.21	0.61	Agreed
9	Retraining staff on food hygiene is necessary.	2.32	0.43	2.24	0.52	Agreed
10.	I always cover my hair when cooking	2.34	0.56	2.41	0.46	Agreed
11.	Plates are properly washed and dried up for service immediately after usage	2.34	0.56	2.00	0.50	Agreed
12.	Anyone with wounds or sore is not allowed to cook or serve food.	2.35	0.57	2.56	0.44	Agreed
13.	Leftover foods are not to be served to customers	2.48	0.61	2.4 4	0.38	Agreed

$\overline{X}aw$; mean (awareness), SDaw; standard deviation(awareness); $\overline{X}ad$; mean(adoption); SDad; standard deviation (adoption)

Table 1 shows that all respondents agreed to all items on the table indicating ranged between mean 2.20 to 2.65 which is greater than 1.50 as the cut-off point. This showed that Ikorodu food vendors are aware of all the personal hygiene practices they are to observe. Table 1 also showed the responses of the food vendors on the adoption of the identified hygiene practices. They all agreed to items 1 to 13 with a mean ranging between 2.00 to 2.72 which is greater than the cut-off point of 1.50. This also showed that Ikorodu food vendors are not only aware of proper hygiene practices but they also adopt these practices.

Research Questions 3: What is the extent of adoption of environmental food hygiene practices by food vendors in Ikorodu local government area?

Table 2: Mean and SD of Respondents on the extent of adoption ofenvironmental foodhygiene practices among food vendors in Ikorodu Local Government Area of Lagos State.

S/N	Environmental Food Hygiene Practices	$\overline{X}$	SD	Remark
1.	Regular fumigation and application of disinfectants in area where food is prepared	2.18	0.61	Agreed
2.	Regular washing of gutters and disposition of waste bins and stagnant waters	2.33	0.46	Agreed
3.	Regular mopping of floors and surrounding where food is served to customers	2.26	0.58	Agreed
4.	Wearing of white apron to maintain the highest level of cleanness while attending to customers	2.66	0.32	Agreed
5.	Ensuring that food items are properly covered and protected against contamination	2.58	0.39	Agreed
6.	All cooking and eating utensils must be washed daily	2.52	0.37	Agreed
7.	Good branded hygienic drinking water must be maintained.	2.74	0.82	Agreed
8.	Proper storage of drinking water is very important	1.82	0.38	Agreed
9.	The Environment where the food is prepared and served must be clean and properly ventilated without pests	2.37	0.53	Agreed
10.	Used item are disposed properly after usage	2.39	0.60	Agreed
11.	Education or sensitization is regularly carried out on food hygiene and safety by government authorities	2.21	0.71	Agreed
12	Proper storage facilities must be put in place for perishable and non-perishable food items	2.52	0.35	Agreed
13	Cleaning of the environments and store is necessary.	2.40	0.51	Agreed

$\overline{X}$; mean; SD; standard deviation

The data presented in Table 2 indicates that all the mean scores for the variables measured are greater than the cut-off score of 1.50. The implication as evidently shown from the means score of 1.82 to 2.74 that, food vendors in Ikorodu adopted all the basic environmental food hygiene practices itemised on the table above.

Discussion of Findings

The findings in Table 1 show that the respondents agreed to all the awareness items on the awareness and adoption of food hygiene practices among food vendors in Ikorodu. These items includes: proper washing of hands before and after handling foods, wearing aprons, preservation of food in freezer/ refrigerators, proper personal hygiene among others. They all obtained mean scores above 1.50 which is the cut-off point. This implies that, the food vendors in Ikorodu local government area agreed that they are aware of food hygiene practices and they also adopt all these practices in their various food vending outlets. This findings contradicts the findings of Madah (2016) who reported that most street vended foods, especially in densely populated poor areas have been reported to harbour a huge range of bacteria due to their unhygienic practices. The findings however was in line with the finding of Chukwuocha (2009) who reported that food vendors in urban areas of Anambra state want to keep to proper hygienic practices to avoid being closed down by the government officials. Items 1 to 7 which was on personal hygiene were rated high by the respondents, Ihensekhian et,al (2019) corroborated to the findings of this study when they stated that food handlers are expected to maintain good personal hygiene in other to prevent the outbreak of food borne diseases. Poor personal hygiene, primarily improper hand washing has been recognized as a significant risk factor of food contamination that leads to food poisoning. Hand washing is the most basic yet critical criterion for ensuring safe food handling by food handlers. Hand hygiene could also serve as an indicator of food vendor's adherence to safe food practices during food preparation. These are in agreement with Anyakoha (2015) who recommended that in order to avoid food being contaminated by disease causing bacteria, food handlers and vendors must observe personal and kitchen hygiene.

The findings in Table 2 show that the respondents agreed to all the items from No 1to 12 as environmental hygiene practices they adopt in the course of their food vending. This implies that the environment most of the food vendors operate are regularly fumigated, gutters are washed, the floors and surrounding where food is being served are always mopped. Anyakoha (2015) supported this by stating that adequate environmental hygiene is important to prevent an outbreak of food poisoning. In addition, Hiemstra *et' al* (2006) reported that street food vending is a common income generating venture that should be practiced in an environment that is clean and litter free to safeguard public health which in turn will make the environment attractive to more customers. No wonder Dimelu (2019) opined that food vending or catering is an enterprise done in a safe disease free environment that provides member with business skills in cooking for sustainable family income. For food vending business to survive, clean and disease free environment is one of the most important criteria.

In item-12 of Table 2, which was on storage facilities was also agreed to with a mean response of 2.52 which is greater than 1.50. Good food storage facility according to Anyankoha,(2015) is to ensure safety and quality of food. Proper food storage requires the use of good storage facilities which include plastic containers, food cupboard, refrigerators and deep freezers. No wander, Medah (2019) noted that an outbreak of food poisoning is likely to occur in canteens and other public eating places where foods are cooked and stored under poor conditions which allows pathogens to multiply, this is because, poor storage facilities can easily lead to food poisoning .

Conclusion

Food vending has become a norm in every nook and cranny of Ikorodu Local Government Area in Lagos state because of the abilities in meeting food demands of every busy person who leaves home early and get home late. The study investigated hygiene practices adopted by food vendors in Ikorodu Local Government Area of Lagos state. The study determined the awareness, adoption and environmental food hygiene practices by food vendors in Ikorodu. The findings of the study revealed that registered food vendors in Ikorodu are aware of food hygiene practices, adopt food hygiene practices and as well as environmental food hygiene. However, it is necessary to regularly train and retrain food vendors and to ensure compliance to relevant food hygiene and environmental health laws and regulations without compromise.

Recommendations

The following recommendations are made:

- ❖ The food and environmental health regulatory agency should ensure only trained and certificated food handlers are registered to engage in food vending ventures.
- ❖ Every fast food industry should be registered with government and environmental health department. Regular check by environmental health officers should be sustained.
- ❖ The law enforcement agencies should ensure compliance with relevant food hygiene and environmental health laws and regulations without compromise.

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Homemakers' Awareness of Consumer Information Needed for Selection of Household Goods and Services in South-East, Nigeria

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Abstract

The objective of the study was to determine the homemakers' level of awareness of consumer information for selection of goods and services. The study was carried out in South-East of Nigeria. Homemakers working in twelve Federal Government Colleges in the five states of South-East were the respondents. The population of the study was 1031 homemakers working in the twelve Federal Government Colleges which was also the sample size for the study. The study used descriptive survey design. A questionnaire was used for data collection in this study. Data was analyzed using mean, standard deviation, and simple linear regression at $p<0.05$ significance level. The results reveal an overall mean of 3.26 signifying that levels of awareness of consumer information had significant influence on homemakers' selection of family goods and services (R^2=.092,Adjusted R^2=.074,$p<0.05$). It was therefore recommended among others, that consumer education training and retraining should be carried out through seminars and workshops, curriculum planners should include consumer education in all levels of education in Nigeria and National Agency for food and Drugs Administration and Control (NAFDAC) should publish information about new products promptly.

Keywords: Homemakers, Awareness, Consumer Information, Selection, Goods and Services.

Introduction

Consumer information are those vital pieces of information that are provided for consumers, to help them be aware of existing goods and services and enable them to assess their values, qualities and quantities for maximum satisfaction. Consumer information includes rights and responsibilities of consumers in the market place. All efforts to transmit knowledge to consumers for individual use, as undertaken by government agencies, consumer associations, manufacturers, private intermediaries and consumers themselves are referred to as consumer information (European Commission Staff Working Committee, 2012). According to Fair and Accurate Credit Transactions Act (2010), consumer information is any record whether in paper, electronics or other form that is derived from consumer report.

Nwabah, (2009) explained consumer awareness as the abilities and skills needed by individuals, families and corporate bodies to become competent consumers in the world that is constantly changing. She further stated that consumer awareness involves asking questions and making decisions that exposes ways of minimizing wastes and maximizing opportunities for purchasing and utilizing goods and services. According to Longman English Dictionary, consumer awareness is a term used to describe the awareness of a potential or current buyer about a particular product or company. Consumer awareness can be as simple as a shopper remembering a television commercial advertisement or as specific as a consumer delving into the manufacturing origin of a specific product (Consumer Awareness e how.html).

In line with what is obtainable in other developed countries, National Agency for Food and Drug Administration and Control (NAFDAC) is authorized to set up minimum requirements for both imported and locally manufactured regulated products for the purpose of accurate information, health and safety of consumers (NAFDAC, 2003). Thus, manufacturers and retailers inform consumers about their products through advertising, packaging, labelling and other accompanying documentations, such as instruction manuals or leaflets before or at the time of purchase as contract.

Olabisi (2003) observed that manufacturers of goods and services advertise their products in different exciting ways which may at times deceive the consumers. In support of the above, Nwabah (2009)indicated that knowledge enables consumers to eliminate waste in consumption, safeguard consumers from dangerous and inferior goods and services and other unfair selling practices of business people. Consumer awareness also involves knowing how traders react to consumers in the market place. Experience has shown that some traders exhibit one kind of reaction to intimidate the customer. If somebody priced an item and the seller starts talking to him/her angrily indicating that the person priced it too low, it is just a disguise to intimidate that person. An experience consumer will move away from that trader and go to another person. This type of behaviour is very common in the South-East. Somebody that does not know his/her right as a consumer or a visitor will become afraid to price, thereby accepting any price they offer. Homemakers need to be trained and equipped with knowledge of consumer information.

Though few researchers like (Green,1985; Bran,2001and Lachance and Nadia,2012) perceived consumer knowledge, awareness and education to be different, majority of others used them interchangeably .Competent, skilled and confident consumers capable of forestalling individual and public problems emerge when consumers are adequately advised, informed and educated (Dittmar, 2010). Gwantwa (2012) study on consumer information awareness in Dar Es Salam and Oguche and Sani (2013) study on awareness of consume information in Kogi State confirmed that educated homemakers were more aware of consumer information. This suggests that a knowledgeable or competent consumer can only be made through effective education.

Generally, a homemaker is a gender-neutral term for a housewife or a husband who is responsible for domestic activities in the family, but in the context of this study only female homemakers were used. In the olden days, homemakers as consumers did not require information in selecting goods and services because they were produced within the families. In recent times, due to advancement in technology better products are being produced. People now purchase goods instead of producing articles for their own needs and desires. This development makes it essential to provide homemakers with the information that will help them in selection of goods and services.

Anyakoha (2015) pointed out some reasons why homemakers should be equipped with knowledge of consumer information. It helps the consumers buy goods and services that are worth the price .With knowledge of consumer information, the consumer will be aware of the product he or she is buying, whether it will be durable, serviceable and easy to care for or too expensive. Nwankwo (2004) also indicated that knowledge of consumer information enables the consumer in selecting how and where to buy the goods and services needed and obtain the best value for her money.

Skilled consumers should be able to use information and advice, know how to access them; as well as know their rights and responsibilities and be able to exercise them (Lachance and Nadia, 2012). Consumer information awareness is proactive and pre-emptive and as such makes consumers to know their rights and responsibilities as well as understand information in a way that enables them to see the wider consequences of their decision making (Grohoji,2004).It enables consumers to make right decisions about food, clothing, financial security, education and healthcare (Asogwa and Igbokwe,2010). According to Tanko (2012), awareness of information influences consumers to raise their voices to modify the policies of business and government that affect the workings of the market place. This means voicing a complaint and seeking remedies when displeased with a product, a service or a business practice. Awareness of consumer information helps consumers exercise their rights when need arises.

Consumer satisfaction should be the point of focus of all manufacturers and sellers of goods and services when performing business activities. On the contrary, homemakers have long been exploited in their exchange relations with business people. This exploitation has remained unabated due to illiteracy, ignorance and poverty. Government efforts to protect these homemakers as consumers have not yielded the desired result. For instance, in July, 2016, a homemaker bought one blender from Umuahia main market, when she plugged it on electricity to use, the blender did not work. Due to fear of unknown problem and ignorance, she did not return the product to the seller. In affirmation, Mukhtar (2012) reported about somebody that made on-line purchase of lap top and what he received was not what he bargained for. Due to the money and time involve in pursuing his right, he decided to bear the loss. Nigerian consumers are exploited on daily basis and their rights abused, in most cases without the exploited consumers seeking redress.

The Federal Government of Nigeria has created awareness of consumer information for consumers. It is therefore necessary to examine the influence of consumer information awareness on homemakers' selection of family goods and services in Nigeria.

Objective of the study

The major objective of this study was to investigate the influence of homemakers'awareness of consumer information needed for selection of family goods and services. Specifically, the study:

(1) determined homemakers 'level of awareness of consumer information needed for selection of family goods and services.

Research question

(1)What are the homemakers' level of awareness of consumer information needed for selection of family goods and services?

Null Hypothesis

H_{01} There is no significant influence of levels of awareness of consumer information of homemakers on selection of goods and services.

Methodology

***Area of the Study*:** The study was focused on homemakers' awareness of consumer information for selection of family goods and services in the South-East of Nigeria. South-East is one of the six Geopolitical Zones in Nigeria. South-East is made up of five States which are Abia, Anambra, Ebonyi, Enugu and Imo. The emphasis on women is based on the fact that decisions for purchasing family goods rests more on homemakers in Nigerian culture. Women are responsible for management of home activities as well as purchasing of family goods and services. Anywhere men carry out these responsibilities, they do them on skeletal basis or part-time.

***Design of the study*:** The survey research design was adopted for this study.

***Population for the Study*:** The population was made up of homemakers working in twelve Federal Government Colleges in the five States of South-East. The Federal Government Colleges and the homemakers working in them are located in the States as follows:-Abia State: Federal

Government Girls College Umuahia (97 homemakers), Federal Government College Ohafia(78 homemakers) and Federal Government Technical College Ohanso (50 homemakers). Anambra State: Federal Government Girls College Onitsha (156 homemakers), Federal Government College Awka(71 homemakers) and Federal Science School Nise (65 homemakers). Ebonyi State: Federal Government Girls College Izamgbo(70 homemakers) and Federal Government College Okposi (69 homemakers). Enugu State: Federal Government College Enugu (108 homemakers) and Federal Government Girls College Lega (68 homemakers). Imo State: Federal Government Girls College Owerri(121 homemakers) and Federal Government College Okigwe (78 homemakers).

The homemakers used in the study are both teaching and non-teaching staff. Homemakers working in Federal Government Colleges were used because their employment is based on Federal Character Commission. Therefore, they are from different parts of Nigeria and are directly responsible for decision making in purchasing family goods and services. The population was obtained by addition of all the homemakers in the twelve federal government colleges which gave the total of 1031.

Sample for the Study**:** The sample size was the whole population of 1031 homemakers since it is a survey research. Saltkind (1997) also recommended increase of sample size in survey research to account for the lost questionnaire and those that will not be correctly filled. Therefore, the whole population of homemakers drawn from the twelve federal secondary schools in the five states was used as sample for this study.

Instrument for Data Collection**:** A structured questionnaire developed by the researcher was used to collect data from the respondents. A four- point scale was used to measure homemakers' levels of awareness of consumer information as follows: High Awareness = 4, Moderate Awareness = 3, Low Awareness = 2, No Awareness = 1.The instrument was validated by three experts in the field of Home Economics Education and two other experts in Measurements and Evaluation in Faculty of Education, Ahmadu Bello University Zaria. The reliability of the instrument was ascertained using Cranbach's alpha coefficient through pilot study. A total of 30 copies of questionnaire was distributed to homemakers in Federal Government Girls' College Asaba, Delta State, which has similar characteristics with the study area. Cronbach's alpha method was used to analyze the data collected and the result was 0.758. This reliability result was considered adequate for the instrument according to Spiegel (1992) and Stevens (1996).

Data Collection Method**:** Five research assistants were selected and instructed on how to fill the questionnaire who helped the researcher to administer and collect the questionnaire .One research assistant was selected from each of the five States. One thousand and thirty-one (1031) copies of the questionnaire were distributed. The number of copies duly filled and collected were eight hundred and ninety-six (896) copies, which represented 86.9% returned. This was used for the analysis.

Data Analysis Techniques: Four point scales were assigned as follows: High Awareness = 4, Moderate Awareness = 3, Low Awareness = 2, No Awareness = 1.Mean and Standard deviation were used to compute data generated from the research question. Any item with 2.5 and above was accepted as aware. The null hypothesis was analyzed using simple linear regression statistical analysis and tested at 0.05 significant levels.

Findings of the Study

Homemakers' Level of Awareness of Consumer Information for Selecting Family Goods and Services

Table 1: Means Responses and Standard Deviations on Levels of Awareness of Consumer Information Needed for homemakers' Selection of Goods and Services

	Item	N	Mean	SD	Remark
1	Consumers have right to be informed about the items they purchase	896	3.59	0.73	Aware
2	Fake items purchased should be returned and ask for refund	896	3.23	0.94	Aware
3	Consumer has right for safe environments	896	3.40	0.88	Aware
4	Consumer should protest against deceitful packaging	896	3.23	0.92	Aware
5	Consumer should redress against deceitful product	896	3.13	0.94	Aware
6	Consumer should be compensated for insult received from trader	896	3.01	1.02	Aware
7	Consumer has right to basic needs of life e.g. House, water, food, road etc.	896	3.38	0.90	Aware
8	Consumer has right to choose	896	3.45	0.79	Aware
9	Consumer should have indication on product use	896	3.24	0.88	Aware
10	NAFDAC number is approval of quality product	896	3.20	0.96	Aware
11	Brand name should be boldly written on product	896	3.48	0.79	Aware
12	Ordered goods should be received as stated in agreement	896	3.44	0.81	Aware
13	Instruction booklet or leaflet	896	3.30	0.91	Aware
14	Consumers should report any fake product brought to market for sale	896	3.25	0.98	Aware
15	A product can still be used after the date "Best Before" but it has lost some quality	896	3.11	1.06	Aware
16	Canned food products with dents should not be purchased	896	3.06	1.04	Aware
17	NIS (Nigerian Industrial Standard) is approval of quality given by SON	896	2.94	0.94	Aware
	Overall mean		**3.26**	**0.91**	Aware

Table 1 shows the mean responses of homemakers on their levels of awareness of consumer information for selection of goods and services for their families. The table reveals an overall mean of 3.26. This shows that all the items on the levels of awareness of consumer information can influence homemakers' selection of goods and services. That is, the overall mean of 3.26 is above the decision mean of 2.50. Therefore, the results of the finding signify that the levels of awareness of consumer information available can influence homemakers' selection of goods and services.

Null Hypothesis 1

There is no significant influence of levels of awareness of consumer information on homemakers' selection of family goods and services.

Table 2: Regression analysis showing Levels of awareness of consumer information available for homemakers' selection of goods and services

Consumer Information Needed	Coefficients	SE	t	Sig.
Constant	285.003	64.794	4.399	.000
Consumers have right to be informed about the items they purchase	11.278	15.353	.735	.463
Fake items purchased should be returned and ask for refund	-2.909	13.313	-.219	.827
Consumer has right for safe environments	-22.081	12.486	-1.768	.077
Consumer should protest against deceitful packaging	-29.754	15.535	-1.915	.056
Consumer should redress against deceitful product	53.121	14.430	3.681	.000
Consumer should be compensated for insult received from trader	-2.721	11.634	-.234	.815
Consumer has right to basic needs of life e.g. House, water, food, road e.t.c.	-29.311	13.861	-2.11	.035
Consumer has right to choose	7.832	14.240	.550	.582
Consumer should have indication on product use	9.510	12.740	.747	.456
NAFDAC number is approval of quality product	27.139	10.692	2.538	.011
Brand name should be boldly written on product	-15.442	13.615	-1.134	.257
Ordered goods should be received as stated in agreement	-1.217	13.320	-.091	.927
Instruction booklet or leaflet	-19.284	12.247	-1.575	.116
Consumers should report any fake product brought to market for sale	-.595	12.113	-.049	.961
A product can still be used after the date "Best Before" but it has lost some quality	64.505	10.845	5.948	.000
Canned food products with dents should not be purchased	.997	10.667	.094	.926
NIS (Nigerian Industrial Standard) is approval of quality given by SON	6.748	10.948	.616	.538

R^2 = .092, Adjusted R^2 = .074

Table2 shows Regression analysis. The table shows that the R^2 of 9.2 percent and the adjusted R^2 of 7.4 percent explains the total levels of awareness of consumer information available (independent variable) on the homemakers' selection of goods and services (dependent variable). Of the total number of the variables studied, the coefficients shows the percentage contribution of each independent variable, which revealed that, Consumers have right to be informed about the items they purchase (11.278, p= .463), Consumer should redress against deceitful product (53.121, p= .000), Consumer has right to choose (7.832, p= .582), Consumer should have indication on product use (9.510, p= .456), NAFDAC number is approval of quality product (27.139, p= .011), A product can still be used after the date "Best Before" but it has lost some quality (64.505, p= .000, Canned food products with dents should not be purchased (0.997, p= .926), and NIS (Nigerian Industrial Standard) is approval of quality given by SON (6.748, p= .538) had positive influence on homemakers' selection of goods and services. That is, an increase in one level of awareness of consumer information available will increase homemakers' selection of goods and services. However, Fake items purchased should be returned and ask for refund (-2.909, p= .827, Consumer has right for safe environments (-22.081, p= .077), Consumer should protest against deceitful packaging (-29.754, p= .056), Consumer should be compensated for insult received from trader (-2.721, p= .815), Consumer has right to basic needs of life e.g. House, water, food, road e.t.c. (-29.311, p= .035), Brand name should be boldly written on product (-15.442, p= .257), Ordered goods should be received as stated in agreement (-1.217, p= .927), Instruction booklet or leaflet (-19.284, p= .116, and Consumers should report any fake product brought to market for sale (-.595, p= .961) has negative influence on homemakers' selection of goods and services. This implies that as the above sources with negative values increases, homemakers' selection of goods and services decreases. The overall finding of this study is that Levels of awareness of consumer information available significantly influence homemakers' selection of goods and services. Therefore, the null hypothesis which stated that levels of awareness of consumer information available do not significantly influence homemakers' selection of goods and services was rejected.

Discussion

The findings of the research question (Table 1) on homemakers' levels of awareness of consumer information revealed a total mean score of 3.26 signifying that most of the levels of awareness of consumer information can influence homemakers' selection of goods and services. The overall mean score of the variables was 3.26 which is above decision mean score of 2.50. All the levels of homemakers' awareness have made significant contributions on the items of consumer information available for selection of goods and services with the mean scores of 2.50 and above. Regression analysis in Table

2 shows that the R^2 of 9.2 percent and the adjusted R^2 of 7.4 percent explains the total levels of awareness of consumer information available (independent variable) on the homemakers' selection of goods and services (dependent variable). Of the total number of the variables studied, the coefficients showed the percentage contribution of each independent variable, which revealed that, Consumers have right to be informed about the items they purchase (11.278, p= .463), Consumer should redress against deceitful product (53.121, p= .000), Consumer has right to choose (7.832, p= .582), Consumer should have indication on product use (9.510, p= .456), NAFDAC number is approval of quality product (27.139, p= .011), A product can still be used after the date "Best Before" but it has lost some quality (64.505, p= .000, Canned food products with dents should not be purchased (0.997, p= .926), and NIS (Nigerian Industrial Standard) is approval of quality given by SON (6.748, p= .538) had positive influence on homemakers' selection of goods and services. That is, an increase in one level of awareness of consumer information available will increase homemakers' selection of goods and services. However, Fake items purchased should be returned and ask for refund (-2.909, p= .827, Consumer has right for safe environments (-22.081, p= .077), Consumer should protest against deceitful packaging (-29.754, p= .056), Consumer should be compensated for insult received from trader (-2.721, p= .815), Consumer has right to basic needs of life e.g. House, water, food, road e.t.c. (-29.311, p= .035), Brand name should be boldly written on product (-15.442, p= .257), Ordered goods should be received as stated in agreement (-1.217, p= .927), Instruction booklet or leaflet (-19.284, p= .116, and Consumers should report any fake product brought to market for sale (-.595, p= .961) has negative influence on homemakers' selection of goods and services. This implies that as the above sources with negative values increases, their influence on homemakers' selection of goods and services decreases. The overall finding of this study is that Levels of awareness of consumer information significantly influence homemakers' selection of goods and services.

It is not surprising that the homemakers' recorded more level of awareness of consumer information. The respondents of this study are those working in secondary schools who are educated at various levels. This agreed with Oguche and Sanni (2013) study on awareness and utilization of consumer information in Kogi state. They observed that educated homemakers' were more aware of consumer information. Gwantwa (2012) study on awareness of food labelling information in Dar Es Salam, confirmed that awareness of consumer information increased as level of education increased. Asogwa and Ibokwe (2010) perceived consumer information awareness of consumers as life skill necessary for general health and well-being in all areas of their lives. Tanko (2012) pointed out that awareness of consumer information influences consumers to raise their voices to modify policies of business that affect the workings of the market place. Nwankwo(2004) stated that knowledge of consumer information enables the consumer in selecting how and where to buy the goods and services needed and obtain the best value for her money. In summary of this result, awareness of consumer information does not occur by chance, it is through training and retraining of the consumers as emphasized by European Commission Staff Working Committee (2012).

Conclusion

Based on the findings of this study, it was concluded that awareness of consumer information has significant influence on homemakers' selection of goods and services. Availability of consumer information and education of homemakers are all imperative for awareness of consumer information.

Recommendations

- ❖ Consumer education training and retraining should be carried out through seminars and workshops by home economics teachers to enlighten homemakers. This can be done through seminars, workshops and women meetings.
- ❖ curriculum planners should include consumer education in all levels of education in Nigeria, let it be a compulsory subject at junior classes.
- ❖ National Agency for food and Drugs Administration and Control (NAFDAC) should publish information about new products promptly to enable consumers be informed.
- ❖ Home Economics extension workers should enlighten homemakers on how to exercise their rights as consumers in the market place.

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Proximate Analysis of Infant Complementary Food from Composite Flour of Corn, Groundnut and Soybean

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Abstract

This study analysed the proximate composition of the food of complementary weaning food developed from corn (Zea May L.), soyabean (Glycine max) and groundnut (Arachishypogaea). Specifically, the study determined the proximate composition of the gruel made from composite flours and the sensory characteristics of the sets of porridges. It was an experimental research. The raw materials were processed into flours using different methods. The flours were blended in ration to form composite flour which was used to prepare samples of gruel for infant complementary foods. The proximate compositions of the blends were analysed. Different flours of corn, groundnut and soya bean were blended in ration of 70:20:10.Sensory evaluation was carried out on the samples to determine the characteristics. The findings indicated adequate levels of moisture, protein, fat, ash, crude fibre, and carbohydrate and energy values. All the formulated complementary blended flour had high protein content. There were high levels of acceptability with no significant difference in the sensory characteristics of the three samples. Among the recommendations is that there should be awareness creation to the rural and poor urban mothers on the importance of local food items for complementary foods formulations which will go a long way to solve protein energy malnutrition in the home.

Keywords: Weaning, Corn, Soybean, Groundnut, Infant, Proximate

Introduction

The functions of food in the human body are immeasurable, especially for infants. Food performs the following functions in human life. It provides heat and energy to the body and materials that are used for growth, repair, and maintenance as well as for protection of the body from disease. Roughage in food helps bowl movement and prevents constipation. Food is necessary for good health and vitality (Nwankwo, 2010). The material in food that performs these functions are called nutrients. Nutrients are chemical substances that are used by the body for growth and health, and they are especially significant for infants' sustainable health (Judith, 2010).

According to the World Health Organization (WHO, 2013), an infant is a child younger than one year of age. Ngwu, (2005) defined infant as a child under one year of age, and is need of special nutrition attention. Infants have specific characteristics which include suckling and sucking reflexes, frequent feeding of 8-12 per 24hours and liquid is more tolerated. From one to three months one cannot separate movement of tongue from head movements. Head control emerges, smiles and laughs. An infant's volume of food increases up to 6-8oz per feeding so number of feedings per day drops to 4-8 per 24hour, suckling pattern allows thin liquid to be easily swallowed (Enyioha, 2005).

Infancy is a period of rapid transition from a meal of virtually nothing but milk (either breast milk or infant formula) to a varied diet from nearly all food groups being consumed on a daily basis (Grummer-Strawn, Seanlem& Fen 2008). During infancy, growth is rapid and nutrients need are high per unit body weight when compared with an adult. Infants gradually develop the ability to chew, swallow and digest the wide variety of foods available to adults. Between the ages of six months and two years, baby's nutritional needs are quite different from those of older children and adults. (United Nations of International Children's Emergency Fund (UNICEF, 2012). At this period of rapid growth and development, they need complementary weaning food rich in protein which is important for baby's brain development and general growth especially between six months and two years (Adeyemi, 2005). A deficiency of iron which is in protein during the early years may have a profound influence on learning later in life.

Infants also need calcium and vitamin D which are essential to build strong, healthy bones and teeth. Calcium helps in heart, nerves, muscles and other body systems to work properly. They also need food rich in vitamin A which helps to maintain a strong immune system and it is good for normal growth and development, specifically baby's eyes. It also helps maintain healthy skin, teeth and bones. Also vitamin C is needed to help the body to absorb iron from iron rich food. Zinc is also needed to boost immune system speed the healing of wounds. Nucleotides is needed to promote the growth of "friendly" bacteria in the gut. They may also reduce the risk of diarrhoea (Wyeth, 2010). These nutrients are naturally found in most of the locally prepared infant weaning food produced with indigenous crops than conventional ones.

Adequate feeding is important to ensure that a child gets the right nutrients required for survival, and to enhance proper growth and development. The local cereals, for instance corn, fortified with, other local products like soya bean, groundnut, banana, vegetable, avocado pear etc can help supply nursing mothers with enriched complementary foods for their babies, instead of depending mainly on commercial or artificial product. (Ramakrisha, Ihanes, Raris, &Kamakarishnarao, 2006). Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential. Poor nutrition increases the risk of illness, and is responsible, directly or indirectly, for one third of the estimated 9.5 million, deaths that occurred in 2006 amongst children less than five years of age (Nor, Ahlberg, Dohorty, Zembe, Jackson and Ekstrom, 2015). Inappropriate nutrition can also lead to childhood obesity, anaemia, marasmus, kwashiorkor which are increasing public health problems in many countries, (Kimanu-Muraye, Kahn, Pettiford, Tollman, Dunger, Gomez-Oliver, & Norris, 2010).

Quality nutrition is highly needed in the early years of a child's life. The first year of a child's life is particularly important, as child grows and develops rapidly. According to Adeyemi (2005) the period of birth to one year is a "critical window" for the promotion of optimal growth, health and behavioural development. Optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic disease and promotes better development overall. If the child is properly fed, he is expected to double his birth weight by the 6th month and triple it by the first birthday. The brain too requires a lot of nutrients to attain maximum growth during this period. In fact, optimal breast and complementary feeding are so critical that they could save about 222,000 lives per year (WHO, 2013; Beruk, Kebede&Esayas, 2016).

Complementary foods are adult foods other than breast milk given to infants that are modified in colour, texture and flavour, which contains the nutrients required of child (Felicity and Savage, 2000). Complementary feeding is the gradual introduction of adult foods in semi-solid form (like cereal gruel (*Pap*) mashed potatoes, beans, yam) and so on to babies without stopping breastfeeding (Enyioha, 2005). These complementary foods are easily reached and produced locally. No matter the economic status of a family, no nursing mother has any excuse of not producing adequate and nourishing complementary foods for her baby (Bender, 2019).There is need to use available local products like corn products fortified with soya bean, groundnut, fruits and vegetable puree for supply of required nutrients for her infant growth and development.

The high cost of fortified nutritious proprietary complementary foods is always unaffordable to most Nigerian families especially in the rural areas and amongst the low income families. Many families depend on inadequately processed traditional foods consisting mainly of un-supplemented cereals porridges made from corn, (*Zea May L*), sorghum, millet etc. Also the long process of using corn to produce starch gruel (pap) takes some few days for fermentation. There is also the problem of preservation, especially in the rural areas, where most women do not have refrigerator. Also, even the use of local way of descaling old water and putting new water every morning can be forgetful thereby affecting the flavour and taste of the gruel (pap). These have prompted the need to go into this work to produce infant food (consogran food) from corn (*Zea May L.)* in flour form fortified with soyabean (*Glycine max*) and groundnut (*Arachishypogaea*) flour using direct heat preparation. In the process of passing the food through heat directly, it is expected that flavour and taste will be improved, germs will be destroyed more effectively, making the food more safe and hygienic for infant consumption. Low-cost, nutritive complementary weaning foods using corn, soybean and groundnut flours were formulated to meet the nutritional needs of families with infants. This will help to enhance the nutritional intake of the infants, thereby reducing malnutrition and the rate of death amongst children under-five (5) years of age.

This study thus, utilized the corn (*Zea may L*), soya bean (*Glycine max*) and groundnuts (*Arachishypogaea*) which are among the easily found local stuffs in composite flour blend were used for the production of infant foods.

Purpose/Objectives

The main purpose of this study was to analyse the proximate composition of complementary weaning food developed from corn (*Zea May L.)*, soyabean (*Glycine max*) and groundnut (*Arachishypogaea*). Specifically, the study determined:

1. proximate composition of the gruel made from composite flours
2. sensory characteristics of the sets of porridges

Research Questions

The study was guided by the following research questions:

1. What are the proximate compositions of the gruel made from the composite flours?
2. What are the sensory characteristics of the sets of porridges?

Materials and Methods

Design of the Study: The design of the study was experimental research design.

Materials: The proximate evaluations were conducted in the food laboratory of Home Economics/Hospitality Management and Tourism Department, MichealOkpara University of Agriculture Umudike, Abia State.Corn (*zeamays)*, soybean (*ghycine max*) and groundnut (*arachishypogaealinnaeus)* raw seeds were bought from mile 1 market (Diobu), Port Harcourt, Rivers State.

Preparation of soybean flour: Defective grains (with holes), stones, dried pods and other debris were removed from the soyabeans.

- The beans were washed and soaked in water for a day. This was done to remove some of the anti-nutritive factors such as trypsin inhibitors and haemaglutinins present in the beans.
- The soaked beans were then placed in a nylon sieve and allowed to drain. It was lowered into a container containing already boiled water for about 20 minutes. This step is called blanching". This was done to make dehulling easier, and to inactivate enzymes activity.
- The water was drained off and discarded.
- The dehulled beans were oven dried at 60^0c for an hour using an electric oven, (Crompton, UK) to reduce anti-nutritive factors and improve upon the flavour of the final product. The roasted soybeans were milled into flour to obtain smooth

and consistent particle sizes and Kulkani's Flow Chart was used.

***Preparation of corn flour*:** Similar procedure was followed.

The corn was first sorted and washed. The grains afterwards were soaked for about a day to begin fermentation process.

- The soaked corn grains were washed and sieved to get rid of the water and foreign matter. It was allowed to drain off water, after which it was oven dried at 60^0c for an hour. The seed will be dry milled and sieved to obtain smooth and consistent particle sizes.

The Anigo's Flow Chart was adopted.

Preparation of groundnut flour:

- Defective grains (with holes), stones, dried pod and other debris were removed from the groundnut.
- The groundnut was roasted using an electric oven (Crompton, UK) for about 20 minutes. This was done for easy removal of groundnut haul and the anti-nutritive factors present in the groundnut.
- It was milled into paste and screw pressed using the manual screw plate press to reduce the oil content (detating) and also to obtain a groundnut cake. The groundnut cake was pulverized to smooth particle sizes, after which the groundnut flour will be oven dried at 60^0c for 20 minutes.

***Composite flour formulation*:** The three flours were properly mixed together to obtain a smooth composite flour. The flours were mixed to avoid lumps.

***Porridge Preparations*:** Composite flours were used to prepare three (3) samples of porridges. 100ml of clean cold water was poured in a saucepan and placed on fire after which 50g of each flour was mixed dry and gradually poured into the water with vigorous stirring using wooden spoon. As boiling was going on water was gradually added till desired colloidal solution is achieved. It was allowed to heat for about five to ten minutes, to really bring out the desired texture, and to make sure the starch grains are properly cooked. It was allowed to cool at room temperature, then infant milk was added to introduce animal protein into them.

Composite flour was formulated from the processed materials (corn, groundnut and soybean) seeds to contain the following percentages.

Sample No.	Blend	Ratio (w/w%)
CGS 1	Corn–groundnut-soybean	70:20:10
CGS 2	Corn –groundnut-soybean	70:10:20
CGS 3	Corn –groundnut-soybean	60:20:20

The samples were represented as CGS 1, CGS 2, CGS 3 and CGS 4.

Proximate Analysis: After the preparation of the porridges, the proximate composition, minerals, vitamins and functional properties of the formulated samples were determined to check their conformity with the standards.

***Moisture content analysis*:** The crucible used was washed and dried in the oven. The dried container was transferred to desicator and weighed. Then, 2g of each of the samples were weighed and dried in the oven at a temperature of 1050 C for 2hrs. The container and samples were reweighed, took back to the oven and dried, put in the desicator and weighed again. This process was continued until a consistent result was obtained for each of the samples.

***Ash Content Analysis*:** The temperature was regulated at 575 ± 250 C until it was carbonized, calcinated until black particles were no more. The crucible and content were placed in a desiccator and weighed.

***Crude fiber analysis*:** About 2g of each of the samples were weighed and placed in a hot 200ml of 1.25% H2SO4 and boiled for 30 mins.

Crude Fat:The defatted samples were carefully removed and the solvent recovered. Further, the flask and oil were oven dried until all the solvent was gone. The flask and the content were reweighed.

Crude Protein: Twenty grams (20g) of the samples were weighed and carefully transferred to a kjeldahl flask containing boiling chips. The same procedure also was carried out for the blank experiment. Titration was against standard 0.1N HCl.

Carbohydrate Analysis: The total carbohydrate content was determined by difference as described by Sarkiayaji and Agar (2010).

Sensory evaluation:

Selection of panel of judges: A panel of ten judges comprising the students and staff were randomly selected from the Department of Home Economics, Ignatius Ajuru University of Education, Port Harcourt.

Instrument for data collection: The 9-point hedonic scale was used to collect data from the judges.

Data collection method/procedure: Each of the ten judges was served with each of the samples and to taste and express their opinions on the 9-point hedonic scale ranging from 9 = like extremely to 1 = dislike extremely. They were also served a glass of water each to rinse their mouths before and after each tasting.

***Data Analysis Procedure*:** The results of the sensory evaluation were analysed using means and standard deviations. Analysis of variance (ANOVA) was used to analyse the null hypotheses at 0.05 level of significance to establish the significance of the difference among the multiple blends and control. At 5 points and above the mean was taken as (liked) accepted while at below 5 points, it was taken as (disliked) not accepted.

Findings/Results: The results were presented in the following tables.

Research Question 1: What are the proximate compositions of the gruel made from the composite flours?

Table 1: Proximate composition of the gruel made from the composite flours

Samples	Dry	Matter Moisture	Crude Protein	Fat	Crude Fibre	Ash	Carbohydrate	Energy
	%	%	%	%	%	%	%	%
CGS1	44.93^{d}±0.12	5.13^{b}±0.12	16.03^{d}±0.01	7.06^{d}±0.01	1.10^{d}±0.02	2.14^{e}±0.01	18.56^{a}±0.0720	1.83^{d}±0.45
CGS2	45.45^{c}±0.03	4.55^{c}±0.03	17.14^{c}±0.02	9.02^{c}±0.02	1.50c±0.00	2.64^{c}±0.02	15.14^{b}±0.03	210.33^{c}±0.13
CGS3	6.12^{b}±0.04	5.88^{d}±0.04	20.13^{a}±0.02	9.84^{a}±0.02	1.86^{a}±0.02	2.98^{a}±0.02	11.32^{c}±0.05	214.48^{b}±0.03

Values are means of data of triplicate determination. Values with the same column having the same super script are not significantly different (P>0.05)

Table 1 above shows that there is no significant difference in the scores of the three samples. The table shows that CGS3 had the highest content for dry matter (46.12^{b}±0.04), while CGS1 had the lowest at 44.93^{d}±0.12. The table also shows that CGS3 had the highest contents in moisture (5.88^{d}±0.04), crude protein (20.13^{a}±0.02), ash (9.84^{a}±0.02) and energy (214.48^{b}±0.03) respectively. CGS2 was highest in carbohydrate (15.14^{b}±0.03).

Research Question 2: What are the sensory characteristics of the sets of porridge?

Table 2: Summary of mean on sensory characteristics of the sets of porridges

Sample	Taste	Aroma	Texture	Appearance	Firmness Overall	Acceptability
CGS 1	6.6±0.01^{a}	6.6±0.01^{a}	5.8±0.10 ^{a}	6.6±0.04 ^{a}	6.4±0.06 ^{a}	6.5±0.10 ^{a}
CGS 2	6.4±0.02^{a}	6.7±0.03^{a}	6.1±0.02 ^{a}	6.6±0.04 ^{a}	6.6±0.01 ^{a}	6.5±0.04 ^{a}
CGS 3	6.2±0.04^{a}	6.4±0.02 ^{a}	6.0±0.00 ^{a}	6.2±0.02 ^{a}	6.2±0.02 ^{a}	6.2±0.03 ^{a}

Mean values with the same superscript down the column are not significantly different (p<0.05)

Table 2 above shows the mean scores on sensory characteristics of the sets of porridges. The table shows there is no significant difference in the sensory characteristics of the three samples. The CGS2 had the highest scores in aroma (6.7±0.03^{a}), texture (6.1±0.02 ^{a}) and firmness (6.6±0.01 ^{a}) respectively. CGS1 had the highest score for taste (6.6±0.01^{a}), while CGS1 and CGS2 were same for appearance (6.6±0.04 ^{a}).

Discussion of the Findings

The result for proximate content and energy value of the flour blends made from corn (C), groundnut (G), soybean (S) is presented in Table 1. The samples were formulated at the different ratio CGS1 (70C 20G 10S), CGS2 (70C 10G 20S), CGS3 (60C 20G 20S).The moisture content value of the formulated blends ranged from 4.55 to 5.88%. There was significant was no difference ($p>0.05$) in the formulated blend samples. The moisture value observed to be relatively the same in all the formulated blend samples. The moisture content value recorded in this study was slightly lower to the ranges of 6.24 to 8.06% and 6.28 to 7.14% reported by Okoye and Mazi (2011) and Nor et al. (2015) for complementary food blends of sorghum and African yam blends and complementary food from quality protein maize respectively. The low content observed in this study shows the storage stability of complementary foods and other flour based product (Adeyemi, 2005). This is particularly important for the preservation of the samples.

The crude protein value of the formulated blends samples ranged from 16.03 to 20.13%. The formulated blend samples had high protein content, this could be attributed to the fact that soybean was present in the mix. WHO (2013) reported that infant up to 1 year require the Recommended Dietary Allowance value ranges which ranges from 13 g/d; the formulated blends were all above this range. The result obtained in this study shows that crude protein was higher in the blend that had 20% soybean substitution indicating that the formulated blends samples will be a good source of protein for infants. Protein plays a vital role like tissue replacement; deposition of lean body mass, growth and in infancy rapid growth requires high protein per kilogram of weight than that of an older children (Nor, et al, 2015; Change, He& Chen, 2018).

In the ash content, there was no significant difference ($p<0.05$) in the formulated samples. The ash value of the samples and control ranged from 2.14 to 2.98% with CGS3 having the highest value. The data obtained in this study was slightly higher than the range of 1.03 to 2.69% reported by Judith (2010) and within the range of 1.44 to 3.46% reported by Okoye and Mazi (2011) for complementary food from sorghum and African yam bean flour. The ash content of the formulated samples increased as the groundnut and soybean substitution increased. The high ash content of the formulated samples and control indicates that they are good sources of mineral (Okoye and Mazi, 2016). Minerals are important to the proper functioning of many body processes. They are necessary players in nervous system functioning, other cellular processes, water balance, and structural (e.g. skeletal) systems (Okafor and Usman, 2015).

In terms of fat content, there was no significant difference ($p>0.05$). The fat content of the formulated samples ranged from 7.06 to 9.84%. The fat content increased as the substitution of groundnut and soybean increased in the formulated samples. Soybean is necessary in complementary foods because it adds fat and protein (Okafor and Usman, 2015). The fat content recorded in this study was higher than the range of 1.05 to 2.06% reported Enyioha (2005) for complementary food from malted cereals, soybean and groundnut but was within the range of 3.61 to 8.08% reported by Okafor and Usman (2015) for complementary food in south west Nigeria. Fat plays a vital role in the diet of infants and young children because it gives essential amino acids, aids absorption of fat soluble vitamins, increases dietary density and sensory qualities (Enyioha, 2005).

For crude fibre, there was no significant difference ($p<0.05$) in the formulated samples with the values ranging from 1.10 to 1.86%. The formulated blends were all low in crude fibre which will be to its advantage as these could help increase the nitrogen utilization and absorption of micronutrients. Foods used for complementary feeding should not contain much crude fibre generally as an adult meal, due to fibre can displace the energy rich foods that children under two years of age need for growth (Okafor and Usman, 2015; Ekeh, 2017).

Carbohydrate content was observed not to be significantly different ($p<0.05$) amongst the formulated samples. The carbohydrate content value ranged from 11.32 to 18.56%. The range obtained in this study was slightly similar to the range 14.10 to 13.18% of the reported by Adeyemi (2005) for complementary food in South west Nigeria. In the formulation of a complementary food for infants, the ratio of carbohydrate to fat and protein must be considered (Enyioha, 2005; Bender, 2019). The energy value of the formulated samples ranged from 201.83 to 214.48 kcal/100g. The energy value obtained in this study was lower than the range of 448.08 to 472.76 kcal/100g as reported by Okafor and Usman(2015) for complementary food from maize, soybean and peanut fortified with Moringa*oleifera* leaf powder. The differences in the energy value of the formulated samples could be attributed to the differences in their protein, fat and carbohydrate content (Okoye and Mazi, 2011). The formulated samples were all observed to be a good source of energy.

There was no significant difference ($P<0.05$) in any of the determined. CGS1sample was rated best (6.6) with respect to taste followed by CGS2 and CGS3 samples. Aroma and texture were scored best in CGS2 sample with respective scores of 6.7 and 6.1 respectively. CGS1 and CGS2 samples were rated same with respect to appearance while CGS3 had the lowest value. The firmness grades ranged from 6.2 to 6.6 in which CGS3 and CGS 2 samples were rated lowest and highest respectively. The results of the overall acceptability grouped CGS1 and CGS2 samples as the most acceptable. These results are similar with the reports of Adegbehingbe (2014) and Oyewole and Isah (2012) that locally produced foods have high level of acceptability because of the natural taste and high nutrient values. The acceptability rates of the tastes and texture imply that the flours were well-grounded and un-soured. The implication of these findings is that the samples will be ideal and acceptable to the infants.

Conclusion

This study has shown that the use of different ratio blends of corn (*zea may l*), groundnut (*arachishypogaea*)and soybean (*glycine max*) flours in formulating a complementary food has given a product with good nutritional, functional and organoleptic acceptance. Protein is a serious problem in Nigeria complementary food. The formulated blends had high protein content which will enable this problem of protein energy malnutrition in Nigeria to be resolved. Samples CGS3 had the highest. The formulated blends met the Recommended Dietary Allowance (RDA) for babies in their protein value. The moisture content of the formulated blends were lower than the recommended value for dry flour meaning that they will have good storing ability.

Recommendations

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

1. awareness to the rural and poor urban mothers should be created by educating them on utilizing our local food items such as combination of corn, groundnut and soybean flour as a complementary food will go a long way to solve protein energy malnutrition and will also help in feeding their babies with diverse meals.
2. formulated blends can also serve as breakfast meal for adult because it has good carbohydrate content for energy.
3. formulated complementary food samples should be enriched more with other mineral food sources to improve its contents.

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Child-Care Services adopted by Mothers in Banks (with Children Birth – 5years) in Nsukka Local Government Area, Enugu State

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Abstract

The study investigated the childcare services adopted by mothers in the banking sector in Nsukka local government area. Specifically, the study identified the childcare services available to mothers in the banking sector, the childcare services they adopt and the children related challenges they face. Cross-sectional survey research design was adopted. The population comprised of 41 mothers of children (birth-five years), who were working in the 19 Banks in Nsukka L.G.A. at the time of the study. Questionnaire was used for data collection. Data were analysed using mean and standard deviation. A mean level of 2.50 and above was taken as the acceptable value for agreed. Findings show that the major childcare services available to mothers were nanny (78.00%), mother's help (68.30%), relative care (78.00%), day care (85.30%) and taking a leave (82.90%).Findings also showed that the widely adopted child-care service was relative care(63.4%) followed by taking a leave (58.50%) and mother's help (53.60%).Not being able to practice exclusive breast feeding and ineffectiveness in playing their motherly role were some of the challenges faced by the mothers in the banks. It was recommended that policy makers work towards effective implementation of work-family balance initiatives in the context of the wider Nigerian working environment especially in the banking institutions.

Keywords: Child, Care, Services, Mothers, Banking, Children, Adoption

Introduction

The first five years of a child's life is viewed as a critical period during which important developmental trajectories are established (Belsky, 2011). That the early years are seen to be the formative of children's long-term prospects is one of the most ancient, enduring and influential themes shaping early childhood policy (Woodhead, 2006). This goes to say that quality care at early years of a child's life is of great value to the child since young children are actively dependent on adults for their care (Barnett, 2011). This is supported by Meyer and Jordan's research (2006) which emphasised that children represent the workforce of the future and their healthy early development is affected by the quality of child-care that they receive. Childcares defined by McCartney (2004) as care for young children of diverse ages by adults who are not their parents. Childcare has become an issue of public importance due to the influx of a large number of mothers into the workforce brought about by modernization and tough economic conditions (Sivard, 2009).

The idea that mothers are the "natural caregivers" of their children is rooted in the cultures of most of the present and past societies. Recently, this ideological construct has been downsized and women have been – at least partially – relieved by their irreplaceable role of caregiver within the family. Nevertheless, fathers and mothers are not appointed with the same expectations regarding their involvement and responsibilities in caring for their children, especially during the first five years. This is because, giving birth and childcare is still more female's than male's prerogatives. This happens despite the increased proportion of women – and mothers among them – participating in the paid labour force during the last decades (Luppi&Arpino, 2016).

In Africa, expanded income earning activities are requiring women to increase use of available child care options which range from sibling care to enrolment in child care centres (Huntsman, 2010; Onu,Obiozor&Agbo, 2011). Osia (2010) explained that without proper child care options, most working mothers may opt to reduce their income generating activities or make child care arrangements that may not be appealing to them in terms of their children's psychological development and health. Kumar and Sunday (2012) emphasized that with women getting engaged in both income earning activities and child care responsibilities, there is a great need to come up with child care services whereby working mothers are able to balance the two crucial roles without straining and at the same time achieving their set goals in both roles. The important role of child care for both maternal employment and human capital development gives some urgency to questions about how parents arrange child care and the role of local, state and national policies in shaping their child care options (Meyers & Jordan, 2006).

Working mothers constitute a relatively high majority of the employed in Nigeria. Given the particular nature of their positions as wives, mothers and workers, they are likely to face a very complex and demanding cluster of roles, and they consistently experience pressure from almost every sphere of their lives. There is a constant feeling of guilt that they are neglecting their families as they struggle to perform their duties at work effectively. In fact, in some cases, the women have to sacrifice success at work for peace at home, while some successful women have had to sacrifice their marital homes(Okafor &Amayo, 2006).Factors that may have contributed to this situation include social disapproval, the breaking down of the extended family system, the lack of co-operation from spouses and children, the inefficiency of alternative childcare arrangements, as well as the lack of understanding of employers. Current statistics, however, continue to point to the fact that Nigerian women face untold hardships, while gender inequality continues to be rooted in traditional practices, values and norms, exemplified in women's reproductive and productive factors especially those which underline the gender division of labour(Okafor &Amayo, 2006).

In the beginning, women were found in fields such as nursing, teaching, hotel and catering; which were seen as extensions of their traditional and domestic responsibilities. However, women nowadays are found in virtually all fields of endeavour including engineering, politics, military and banking. Women in the banking sector have been affected by diverse policies over the years (Sahay &Čihák, 2018). According to Talmund (2003); some of the policies are paid maternity benefits and flexi-schedule; which companies are oftentimes reluctant to hand out to working mothers. As a result, the absence of a mother at the child's formative years due to her employment demands has some measure of influence on a child's development. According to Ering, Akpan and Emma-Echiegu(2014), early involvement of children in alternative care is strongly associated with less harmonious mother-child relationships. The result of this is that children grow up to exhibit various forms of nonchalant behaviors that are highly detrimental to society(Ering, Akpan& Emma-Echiegu, 2014).This implies that the rise in the number of working mothers is not synonymous with the complete alleviation of the problems working mothers face both at home and at work. In fact, the problems of female workers, most especially bankers, remain largely unattended to in the Nigerian society. The reason for society's disapproval of mothers as bankers seems to be that a wife and mother who works long hours must be withdrawing the needed time and attention from the care of her home and children (Okafor &Osamudiame, 2006).Against this backdrop, the study sought to investigate the child care services adopted by mothers in the banking sector and the challenges these mothers face in their work place and at home.

Objectives of the Study

The general objective of this study was to investigate issues relating to childcare services adopted by mothers of children birth-5years working in banks in Nsukka local government area. Specifically, the study;

1. identified child care services available to mothers of children (birth-5years) who work in banks
2. identified those child care services adopted by mothers of children (birth-5years) who work in banks
3. determined childcare related challenges faced by mothers in banks(with children birth-5years)

Methodology

Design of the Study: The study adopted cross-sectional survey research design.

A cross-sectional study analyses data from a population, or a representative subset, at a specific point in time (Schmidt &Kohlmann, 2008).

***Area of the Study*:** The study was carried out in Nsukka Local Government Area, Enugu State. Nsukka L.G.A, has an area of 1,810km2 and a population of 306,633 at the 2006 census (Federal Republic of Nigeria official gazette, 2007). It is made up of 37 autonomous communities which is home for 19 commercial banks. These banks are majorly located in Nsukka town of the local government and the University of Nigeria community.

***Population for the Study*:** The population consisted of all the female bankers who had children between birth and five years of age, and worked in the 19 banks in Nsukka L.G.A.

***Sample for the study*:** There was no sampling. All the 41 mothers with children between (birth to five years) who work in the banks were used for the study.

***Instrument for Data Collection*:** Questionnaire was the instrument used for data collection. The instrument was used to elicit information on the type of child care practices available to mothers with children, birth to 5 years of age, challenges faced by the mothers and the child care services adopted by the mothers in the banking sectors. The instrument was validated by three experts in the area of family and child studies to establish contents, structure, language used and the relevance of the items to the study. Cronbach Alpha method was used to determine the reliability of the instrument at 0.83 coefficients.

***Data Collection Methods*:** Questionnaires were administered to the mothers with children (birth to 5 years) who worked in the banks in Nsukka L.G.A. All the 41 questionnaires administered were retrieved for analysis, this implies a 100% return rate.

***Data Analysis Techniques*:** Data were analysed using means and standard deviation. Means that are 2.50 and above were regarded as agreed while means below 2.50 were regarded as disagreed.

Findings of the Study:

The demographic data of the respondents showed that about 41.40% were aged between 31-35 years, 26.80% were aged between 26-30 years, while 7.30% were aged between 41-45 years. Majority of the respondents (56.10%) had B.Sc/B.Ed/B.A as their highest educational qualification, 31.70% had M.Sc/M.Ed/M.A as their highest educational qualification, while 7.30% had OND/NCE as their highest educational qualification. About 61.00% of the respondents earned between ₦80,000 - ₦120,000 as their monthly income,while 14.60% earned less than ₦80,000.

Table 1: Mean Responses on Child-Care services available to Mothers in the Banking Sector

S/N	Child-Care Services	Available F (%)	Not Available F (%)
1	Nanny Services	32 (78.00)	9 (22.00)
2	Mother's Help	28 (68.30)	13 (31.70)
3	Baby Sitting	26 (48.80)	15 (36.60)
4	Relative Care	32 (78.00)	9 (22.00)
5	Child-Care Swap	9 (22.00)	32 (78.00)
6	Play Groups	13 (31.70)	28 (68.30)
7	Work Place Crèches	9 (22.00)	32 (78.00)
8	Au Pair (foreign nanny)	2 (04.90)	39 (95.10)
9	Day-Care Centres	35 (85.30)	6 (14.60)
10	Leave	34 (82.90)	7 (17.10)
11	Part-timing	13 (31.70)	28 (68.30)

F = frequency, % = percentage

Table 1 shows that 86% of the respondents had day care available to them, 82.90% had the option of taking a leave available to them, 78.00% had nanny and relative care available to them. About 95.00%of the respondents do not have Au pair (foreign nanny) available to them, 78.00% do not have play groups available to them, 68.30% do not have child-care swap and part-timing available to them.

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Table 2: Child-Care services Adopted by Mothers in the Banking Sector in Nsukka LGA

S/N	Child-Care Services	Adopted F (%)	Not Adopted F (%)
1	Nanny Services	19 (46.30)	28(46.30)
2	Mother's Help	25(53.60)	16(39.00)
3	Baby Sitting	14(34.10)	27(65.80)
4	Relative Care	26(63.40)	15(36.60)
5	Child-Care Swap	2(04.90)	39(95.10)
6	Play Groups	10(24.40)	31(75.60)
7	Work Place Crèches	4(09.80)	37(90.20)
8	Au Pair (foreign nanny)	0 (00.00)	41(100.0)
9	Day-Care Centres	16(39.00)	25(60.90)
10	Leave	24(58.50)	17(41.50)
11	Part-timing	11(26.80)	30(73.10)

F = frequency, % = percentage

Table 2 shows that 63.40% of the respondents adopted relative care, 58.50% of the respondents took leave, 53.60% adopted mother's helper, and 46.30% adopted the services of a nanny. On the other hand, Au pair (foreign nanny) services were not adopted by any of the respondents (100.00%), 95.10% of the respondents never adopted child-care swap. Up to 90.20%

do not adopt the services of work place crèches and play groups were not adopted by 75.60% of the respondents.

Table 3: Mean Responses on Childcare Related Challenges Faced by Mothers Working in the Banking Sector in Nsukka LGA

S/N	Challenges	Mean	SD	Remarks
1	Inability to meet up with exclusive breast feeding	3.56	0.74	Agreed
2	Psychological distractions while thinking about their children	2.42	0.81	Disagreed
3	Tension with superiors in the bank because of children	2.42	0.77	Disagreed
4	Inability to feed children well as a result of the job	2.31	0.72	Disagreed
5	Lateness to work due to child care	2.63	0.92	Agreed
6	A lot of money being spent on transportation while shuttling between child care centre and work place.	2.76	0.92	Agreed
7	Long hours at work is a source of worry for children (aged birth-5 years).	2.71	0.93	Agreed
8	Possible delay in promotion	2.22	0.96	Disagreed
9	Inability to nurse infants properly	2.51	0.84	Agreed
10	Inadequate time to be there for children even when they are sick.	2.81	0.84	Agreed
11	Not opportune to provide adequate motherly care for children due to time constraint	3.00	0.14	Agreed

SD = standard deviation

Table 3 shows that the respondents agreed that childcare related challenges they face include not being able to meet up with exclusive breast feeding; lateness to work; long hours of work; not being able to nurse their infants properly; and time constraint among others. The respondents disagreed to the following items as challenges: psychological distractions at; tension with their superiors; delayed promotion and not feeding their children properly.

Discussion

The findings of this study showed that a greater percentage of the female bankers were aged 31-35 years, while a few others were below 25 years. According to Olu-Olu (2011), these age brackets are the real targets of management for canvassing for money for investors. This reflected in their educational qualification as most of them had a post-secondary education certificates. Findings also showed that most banks in Nsukka L.G.A. offers paid maternity leave for their female staff which is a welcome development as it creates work and family balance. Similarly, Gregory and Milner (2009), posits that work-family balance, work-life balance policies and practices among female bankers are beneficial to both employees and organizations as they assist employees in balancing work and non-work roles, thereby improving the individual's health and overall wellbeing.

The most available child care services to mothers in the banking sector as shown in the findings were nanny, mothers' help, relative care, day-care, baby sitting and taking a leave. These services were also adopted by some of the bankers. This might be because of the environmental and social nature of the location of the study which made the providers readily available to offer the services. Similarly, study by Luppi and Arpino (2016) identified external help from family and friends, child care centres and part-timing as some of the coping strategies of working mothers. Supporting this, Okafor and Amayo (2006), reported live-in house helps/nannies, child minders/baby sitters, family members, friends and neighbours, as alternative care options that employed mothers make use of. According to Bayless (2019), the different types of child care services available and can be adopted by employed mothers include mother's helper, babysitter, nanny, au pair, day-care centre, family day care, relative care and child-care swap. Additionally, Halsall (2019) explained traditional day-care centre, in-home day-care, nanny, shared nanny, au pair, babysitter, relative care and preschool as the most common types of child care services available for working mothers.

Findings also showed that mothers working in the banks face some challenges which include not practicing exclusive breast feeding, lateness to work due to child care, huge cost on transportation and inability to play motherly roles in their homes. This is in line with the result of a study by Okafor and Amayo (2006), which reported distance, high cost of crèches and role-strain as some of the challenges employed mothers face. According to Victor &Tharakumar (2010), women employees feel guilty that they were not able to fulfill traditional maternal role. This is the ideal gender role across Nigerian culture, that is, a great importance is placed on the family roles over the non-family roles. Similarly, Zhu, Khan and Ilyas (2012) reported inflexible timings, lack of maternity leaves and social limits among other things as some of the problems faced by female employees. In addition, a study by Abdul, Abdul, Ambreen, Naveed and Javed (2013), showed numerous problems faced by mothers in the banking sector which included neglect of their children, unsupportive behaviour of husbands, transportation problems and weak promotion and scaling system due to favouritism. According to Schochet (2019), child care challenges have become a barrier to work, especially for mothers, who disproportionately take on unpaid care giving responsibilities when their family cannot find or afford child care.

Conclusion

The study concludes that the mothers who have children aged birth to five years who work in banks in Nsukka L.G.A adopted only a few number of the child care services available to them such as relative care, mothers' help and taking leave. They also identified some challenges they encounter which include inability in practice exclusive breast feeding and ineffectiveness in playing their motherly role.

Recommendations

Based on the findings, the following recommendations were made.

1. In order to meet up with their job and child care demand, working mothers should make use of child care services available to them.
2. When adopting the services, they should ensure that they choose the ones that are of high quality in order to ensure the holistic development of the child.
3. It is also recommended that key players such as employers and policy makers move swiftly beyond paper policies towards effective implementation of work-family balance initiatives in the context of the wider Nigerian working environment and particularly in the banking institutions.

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Proximate Composition and Sensory Properties of Cassava (*Manihot esculenta)* Snack (Kpokpo Gari) Enriched with Groundnut *(Cocos nucifera)* and Coconut *(Arachis hypogaea.)*

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Abstract

The proximate composition and sensory properties of cassava (*manihot esculenta)* snack (kpokpo gari) enriched with groundnut *(cocos nucifera)* and coconut *(arachis hypogaea.)* was investigated. The cassava mash, coconut and groundnut were mixed at different ratios 100:0:0, 70:15:15. 60:20:20, 50:25:25 respectively. The kpokpo gari samples were subjected to proximate, mineral, physical and sensory analysis. The outcome of the proximate analysis revealed a gradual increase in the protein contents (5.47-13.31%), ash (1.09-1.65%) and fat (1.18-4.76%) as the percentage of groundnut *(arachis hypogaea.)* and coconut *(cocos nucifera)* increased while there was a reduction in carbohydrate content (53.50-63.44%), moisture (5.40-8.05%) and crude fibre (18.49-19.53%). The mineral analysis showed that calcium ranged between (0.027-0.042mgIl00g), magnesium (O.059-0.l24mgIlOOg), Sodium (0.033-0.192mg/100g). Iron (49.90-53.59mg/100g) and phosphorus (0.012-0.019mg/l00g). There was a significant (p<O.O5) difference in the sensory scores between the enriched kpokpo gari and control sample (100% cassava mash) with sample C (Cassava (*manihot esculenta),* coconut*(cocos nucifera)* and groundnut*(arachis hypogaea.)*. 60:20:20%) as most preferred. Sensory analysis showed that the incorporation of groundnut *(arachis hypogaea.)* and coconut *(cocos nucifera)* at levels of 20 and 25% were accepted by the panelists.

Keywords: Gari, Enriched, Groundnut, Coconut, cassava, snack.

Introduction

Cassava (*Manihot esculenta)* is a staple food cultivated for its tuberous root which is further processed into different products such as cassava flour and snacks. In Nigeria, it is one of the important and most cultivated food crops, it is widely eaten by most household as gari, fufu, lafun, kpokpo gari and tapioca. Cassava *(Manihot esculenta)* is a major source of carbohydrate root crop, it plays a major role in effort to alleviate food crisis because of its efficient production of food energy, year-round availability. Among the starchy staples, cassava (*Manihot esculenta)* gives a carbohydrate production that is about 40% higher than rice and 25% more than maize. Cassava also consist of essential micronutrients, such as vitamins A, B C, iron and zinc (Viduranga, 2018). According to Nwafor, Akpomie, Ejiro (2015) cassava (*Manihot esculenta)* contain 62% water,35% carbohydrate, 1.0% protein, 0.3% fat and 1.0% mineral, some of these nutrients may be lost due to heat during processing of cassava (*Manihot esculenta)* to edible product such as cassava (*Manihot esculenta)* chips, kpokpo gari, tapioca, gari, flour. Gari is a dried granular carbohydrate food made from cassava (*Manihot esculenta)* root, it is a major component of everyday diet in Nigeria providing about 357 calories per 100g (Bankole, 2018). Gari is usually consumed by preparing with boiled water to a paste and eating with soup as an accompaniment, it can also be mixed with cold water with addition of sugar or salt, groundnut (*Arachis hypogaea* L.) or coconut (Cocus nucifera) and consumed as snack by adult or children, most time it is eaten as kpokpo gari snack without mixing of water or any liquid.

Kpokpo gari, is a cassava (*Manihot esculenta)* based snack that is popular and relished by the Southern Nigerians precisely the Itsekiri, Ijaw, Isoko and Urhobo people. It is white in color and made from hard crump of processed cassava (*Manihot esculenta)*. What makes this dry snack different from garri used in making eba is the finishing during the procession. Just as cassava tubers for garri is taken to the mill to be blended, so also kpokpo garri goes to the mill. The blended pulp is put in bags and left to drain for days. Unlike the garri, kpokpo gari is not sieved before frying. It is salted and fried in big frying pans dry, with all the lumps and shafts; this is more like using heat to further remove any form of wetness in it which eventually make it hard and rough in the mouth. Kpokpo garri, is highly nutritive, with carbohydrate, fibre, minerals and less fat and protein (Alikson 2019). This product is eaten singly as snacks by many without any accompaniment or while eat it as meal with fresh fish pepper soup. Kpokpo gari contains very little amounts of protein, fiber and fat, (Nwokolo, 2019). Most snack foods are cereal or tuber-based with high starch content and some of such snacks are deficient in protein, (Wordu and Akusu 2016). Kpokpo gari know as a low protein, fat and oil content snack need to be enriched or fortified with groundnut (*Arachis hypogaea* L.) and coconut (Cocus nucifera) due to the quality and considerable amount of nutrients (protein and mineral) they contain.

Groundnut (*Arachis hypogaea* L.) is a very important legume which is widely grown as a food crop. Although small in size it plays a vital nutritional role and contains amazing health benefits (Mubiru 2016). From previous research it is reported that groundnut (*Arachis hypogaea* L.) seed contains high amount of oil and protein (50% oil and 27-29% protein) contents, (Zhenghuo, 2012). The oil and protein content in groundnut can be used to fight against malnutrition, especially protein energy malnutrition and the presence of calcium, magnesium and phosphorus is good indication that groundnut (*Arachis hypogaea* L.) is rich in the minerals which is good for bone formation, (Eshun, Amankwah and Barimah, 2013). Groundnut (*Arachis hypogaea* L.) is also rich in B-complex vitamins providing high quality dietary protein, Its protein is increasingly becoming important as food sources especially in developing countries where protein from animal sources is not within the reach of majority of the populace and the seeds are mostly consumed as snack after roasting, used to make peanut butter, oil soups, stews and other products (Ayoola el a!., 2012).

Coconut (Cocus nucifera) belonging to the family Arecaceae, it is a fibrous one-seeded drupe grown nut in the world. It possesses vitamin B6, iron, and minerals like magnesium, zinc, copper, manganese, and selenium, (Migala, 2019). The nut is usually consumed in its raw form and most times eaten alongside other products such as cassava (*Manihot esculenta)* chips, maize and date fruit, among others. It is used as food and believed to possess many medicinal properties, it is also used with date fruit and tiger nut in preparation of some drinks such as the nutritious drink known as "Kunu aya" popularly consumed in Nigeria, (Imo, Ezeonu, Imo and Anigbo, 2018). A blend of cashew, coconut and pkokpo gari can be used to produce palatable snack rich in minerals. (Emelike and Akusu, 2018). The proximate composition of coconut *(cocos nucifera)* shows that it contain a considerable amount of moisture 8.33%, fat 56.36%, protein7.53%, energy value (kcal) 662.65%. (Ojobor, Anosike, Ezeanyika, 2018). This indicated that coconut may be good source for enrichment of food products or snacks such as kpokpo gari. The press cake from coconut*(Cocus nucifera)* oil processing also contains protein content of 19-20%, 12% crude fiber, carbohydrate 43-45% which can be utilized in the enrichment and fortification of foods, (Yalegama and Chavan, 2009). The enrichment of foods is an integral part of improving the nutritional quality and sensory properties of food (Oluwamukomi, 2015).

Despite the numerous benefits of cassava(*Manihot esculenta) and kpokpo gar*, it contain low level of protein and fat content, the dependence on cassava (*Manihot esculenta)* based diets and snacks alone, may lead to serious protein deficiency problems. Such malnutrition problems has been reported among consumers that rely primarily on cassava flour and other cassava products as major food source with little or no high protein food sources as compliments (Rudo el al., 2017). Malnutrition is one of the major concerns to most developing African countries such as Nigeria where most diets are predominantly carbohydrate or starchy food crops, therefore there is need to improve the nutritive quality of our local foods through enrichment and kpokpo gari is one of such basic foods worthy of attention. The use kpokpo gari as a snack food is limited by its low protein content and may be deficient in essential amino acids too. Compared with other cereal grains, cassava (*Manihot esculenta)* is low in protein and the protein it has is of poor quality with very low essential amino acid contents, (Morgan and Mingan, 2016).

However due to low level of protein content in cassava (*Manihot esculenta)* and high cost of animal protein, there is need to enrich cassava (*Manihot esculenta)* snacks or food products such as (kpokpo gari) with good quality protein source that are readily available. Hence this study aims to determine the proximate and sensory properties of cassava (*manihot esculenta)* snack (kpokpo gari) enriched with groundnut *(cocos nucifera)* and coconut *(arachis hypogaea*. This will enhance the protein content of kpokpo gari and decrease the incidence of protein malnutrition among the major consumers of this product.

Purpose of the study

The general purpose of the study was to determine the proximate, and sensory properties of cassava (*manihot esculenta)* snack (kpokpo gari) enriched with groundnut *(cocos nucifera)* and coconut *(arachis hypogaea).*

Specifically, the study determined:

1. proximate composition of *kpokpo gari* snacks
2. Mineral content of *kpokpo gari* coconut*(cocos nucifera)*/groundnut *(arachis hypogaea)* snack.
3. sensory attributes of *kpokpo gari* coconut*(arachis hypogaea)*/groundnut *(arachis hypogaea).*snack.

Materials and Methods

***Collection of Materials*:** Fresh harvested cassava (*manihot esculenta)* tubers from a farm in Yeghe. Gokana Local Government Area, Rivers State was used while matured coconut *(cocos nucifera)*, raw groundnuts *(arachis hypogaea)*and jaggery were purchased from Mile 3 Market, Port Harcourt, Rivers State. All reagents used for the chemical analysis were obtained from the Biochemistry Laboratory, Department of Food Science and Technology, Rivers State University, Nkpolu- Oroworukwo Port Harcourt. The reagents were of analytical grade,

Preparation of Coconut *(cocos nucifera)***:** Coconut *(cocos nucifera)*,crush was prepared from the fully matured dry coconut*(cocos nucifera)*,. The coconut *(cocos nucifera)*,endosperm after the removal of the shell was shredded and the coconut *(cocos nucifera)*,milled using an electric blender. The residue was then oven dried for 24hr at 50°C. The crush obtained was stored at room temperature and used for further preparation.

Preparation of groundnut flour: About l000g of cleaned and sorted raw groundnuts *(arachis hypogaea)* were roasted and dehulled. They were then milled using electric blender into flour and stored for further use.

Processing of Cassava *(manihot esculenta)*: About 20kg of freshly harvested cassava (*manihot esculenta)* tubers were peeled and washed with clean water to remove adhering soil particles. Thereafter, the tubers were milled (by grinding) using a milling machine (Simply, China). One litre (IL) of clean water was added to 20kg of mash and then put into a jute sack and left to drain for days.

Production of Kpokpo gari: The traditional method of kpokpo gari preparation described by Nwokolo (2019) was used with modifications. Pressed cassava (*manihot esculenta)* mash, coconut *(cocos nucifera)*,crush and groundnut *(arachis hypogaea)*paste were mixed using different formulations. Each blend was roasted for 10-

I5minutes in a shallow wide hot metal pan (pot) until a consistently whitish chip (kpokpo gari) was obtained. The chips were removed from the pan into a metal tray using a large spoon with long handle and allowed to cool at room temperature (29°C). The chips were bagged in polyethylene bag and stored for further analysis. The formulation blend were: (A) mashed cassava(*manihot esculenta)* 100%, NO coconut, groundnut *(arachis hypogaea)*and jiggery (B) 60% mashed Cassava(*manihot esculenta)* to 20% coconut*(cocos nucifera)* granules, 20% groundnut *(arachis hypogaea)*flour and 15ml jaggery solution. (C) 50% mashed Cassava(*manihot esculenta)*, to 25% Coconut *(cocos nucifera)*granules, 25% groundnut *(arachis hypogaea)*flour and 15ml jaggery (D) 40% mashed Cassava to 30% coconut *(cocos nucifera)*granules, 30% groundnut *(cocos nucifera)*flour and 15ml jiggery.

Proximate Analysis**:** Moisture, ash, fat, protein, crude fibre and carbohydrate of the kpokpo gari samples were determined according to the AQAC (2012) method while total carbohydrate was determined by difference. The weight, diameter and height were determined using the method of Srivastava et al. (2012).

Mineral Analysis**:** The mineral content of the formulated *kpokpo gari* samples were evaluated using the method of Adedeye and Adewoke (1992). Calcium, phosphorus, magnesium, iron and sodium contents of the *kpokpo gari* samples were determined using an Atomic Absorption Spectrophotometer (Buck Scientific Atomic Absorption Emission Spectrophotometer model 205, manufactured by Nowalk, Connecticut, USA).

Sensory Analysis**:** Sensory analysis was carried out using twenty member panelists consisting of students of Food Science and Technology Department, Rivers State University, Port Harcourt, Nigeria. The sensory qualities of the samples were served raw/dry with cold water, milk, dried fish and it was evaluated for colour, flavour, taste, aroma, texture and overall acceptability. Each sensory attribute was rated using a 5-point hedonic scale with one (I) representing dislike extremely and 5-like extremely as reported by Iwe (2010).

Data Analysis**:** Results were expressed as mean values and standard deviation of triplicate experiment. Data were analyzed using a one way analysis of variance (ANOVA) using statistical packages for social sciences (SPSS) version 20.0 software 2011 to test the level of significance at 5% level of probability ($p<0.05$). Least significance difference test was used to separate the means where significant differences existed.

Result

Table 1. Proximate Composition of *kpokpo gari* snack enriched with coconut and Groundnut

Samples	Moisture	Ash	Fat	Protein	Fiber	Carbohydrate
A	8.05±0.15^{a}	1.09±0.10^{b}	1.18±0.00b	5.47±1.71^{b}	19.53±1.62^{a}	63.44±0.21 ^{a}
B	6.40±0.00^{c}	1.55±0.05^{ab}	1.5±1.00b	10.25±0.62^{a}	18.75±1.22^{a}	61.86±0.88^{a}
C	5.40±0.00^{b}	1.09±0.10^{b}	3.46±0.4.9ab	12.06±0.00^{a}	18.49±2.44^{a}	59.02±2.50^{ab}
D	7.90±0.20^{a}	1.64±0.15^{a}	4.76±0.60a	13.31±000^{a}	18.89±2.44^{a}	53.50±0.82^{b}
LSD	0.46	0.54	2.95	4.50	3.87	6.61

Mean± SD of three replicates, *Mean values within a column with different are significantly different ($p>0.05$)

KEY:

A= 100%Cassava (*manihot esculenta)*mash for *kpokpo gari* (Control sample)

B= 70% 15% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)*and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively

C= 60% 25% Ratio of Cassava(*manihot esculenta)*, coconut*(cocos nucifera)* and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively

D= 50% 20% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)* and groundnut*(arachis hypogaea)* flour in the *kopkpo gari* respectively

Proximate Composition of *kpokpo gari* **snack enriched with coconut and groundnut.**

Table 1 shows the proximate composition of the *kpokpo gari* samples. The moisture content of the samples ranged between 5.40-8.05% with the control sample having the highest moisture content and sample C (Mashed Cassava(*manihot esculenta)*/ coconut*(cocos nucifera)* /groundnut *(arachis hypogaea* 60:20:20) least moisture content followed by samples D and B (7.90, 6.40) respectively. The decrease in moisture content in sample C may be due to the inclusion of coconut granules and groundnut flour in the sample. Ash content ranged between 1.09-1.65% with Sample D (Cassava/coconut/ groundnut, 50:25:25) having the highest ash content, while sample A containing 100% cassava mash had the lowest value. There was no significant ($p<0.05$) difference between samples sample A and C (1.09%and 1.09%) respectively.

The fat content of the *kpokpo gari* samples increased significantly ($p<0.05$) from 1.18% for control sample to 4.76% (Cassava/coconut/groundnut. 50:25:25) in the treated samples (A, C and D) respectively. This could be attributed to the inclusion of coconut granules and groundnut flour in the samples B, C and D respectively. The protein content of the samples ranged from 5.47-13.31% with sample D having the highest and sample A having the lowest respectively. It was observed that the higher the quantity of coconut granules and groundnut flour the higher the protein content.

The crude fibre ranged between 18.49-19.53% with control sample having the highest value. There was no significant difference ($p<0.05$) in the crude fibre content of the *kpokpo gari* samples. The carbohydrate content ranged between 53.50-63.44% with sample A having highest carbohydrate content while sample D had the least.

There was no significant (p<0.5) difference between sample B(58.86%), c (53.02%) and D (53.50) respectively.

Table 2. Mineral Composition (mg/bOg) of *kpokpo gari* snack enriched with coconut and groundnut

Sample	Calcium	Management	Sodium	Iron	Phosphorus
A	0.027±0.00^{d}	0.059±0.00d	0.033±0.00^{d}	49.900±0.15^{d}	0.0012±0.00^{d}
B	0.030±0.00^{c}	0.081±0.00c	0.202±0.00^{a}	80.625±0.53^{a}	0.016±0.00^{c}
C	0.035±0.00^{b}	0.111±.00b	0.177±0.00^{c}	52.675±0.8^{c}	0.030±0.00^{a}
D	0.042±0.00^{a}	0.124±0.00a	0.192±0.00^{a}	53.585±0.52^{b}	0.019±0.00^{b}
LSD	**0.01**	**0.01**	**0.00**	**1.96**	**0.00**

Mean± SD of three replicates, *Mean values within a column with different are significantly different (p>0.05)

KEY:

A=100%Cassava (*manihot esculenta)*mash for *kpokpo gari* (Control sample)

B= 70% 15% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)*and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively

C= 60% 25% Ratio of Cassava(*manihot esculenta)*, coconut*(cocos nucifera)* and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively

D=50% 20% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)* and groundnut*(arachis hypogaea)* flour in the *kopkpo gari* respectively

Mineral Composition of *kpokpo gari* snack enriched with coconut and groundnut

Table 2 shows the mineral concentrations (mg iCOg of *kpokpo gari* samples. The results indicated the calcium, magnesium. Sodium, iron and phosphorus content ranged from 0.027-0.042mg/l00g, 0.059-0.124mg/b0g 0.033-0.192mg, 49.90-53.59rng/100g and 0.012-0.0l9mg/l00g with magnesium having the highest value while phosphorous have the lowest value respectively. There was no significant (p<0.05) difference between phosphorous samples respectively.

Table 3. Physical Properties of *kpokpo gari* snack enriched with coconut and groundnut

Sample	Weight (g)	Diameter (mm)	Height (m)
A	13.56±0.03a	3.65±0.07^{b}	4.34±0.01^{c}
B	11.50±0.01b	3.75±0.21^{b}	4.41±0.01^{bc}
C	11.33±0.23b	3.75±0.00^{b}	4.72±0.08^{a}
D	10.16±0.16b	3.80±0.06^{b}	4.69±0.09^{ab}
LSD	**0.47**	**0.24**	**0.24**

Mean± SD of three replicates*Mean values within a column with different are significantly different (p>0.05).

KEY:
A=100%Cassava (*manihot esculenta)*mash for *kpokpo gari* (Control sample)
B= 70% 15% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)*and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively
C= 60% 25% Ratio of Cassava(*manihot esculenta)*, coconut*(cocos nucifera)* and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively
D=50% 20% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)* and groundnut*(arachis hypogaea)* flour in the *kopkpo gari* respectively

Physical Properties of *kpokpo gari* snack enriched with coconut and groundnut
The result in table 3 shows that the physical quality of *kpokpo gari* such as weight, diameter and height were affected by the level of groundnut and coconut. The weight, height and diameter of the *kpokpo gari* samples ranged between 10.16-13 .56g, 4.34-4.69rn and 3.65-3.80mm respectively.

Table 4. Sensory Properties of *kpokpo gari* snack enriched with coconut *(cocos nucifera)* and groundnut *(arachis hypogaea)*

Sample	Color	Taste	Flavor	Texture	overall Acceptability
A	2.55	1.95	2.05	2.06	2.15
B	3.55	3.60	3.15	3.25	3.60
C	3.95	3.90	3.40	3.70	**4.35**
D	3.90	4.15	3.45	3.65	5.85
LSD	**0.61**	**0.52**	**0.60**	**0.63**	**0.54**

Mean value with same alphabet as superscript are the same while those with different alphabet are significantly different (p<0.05)

KEY:
A=100%Cassava (*manihot esculenta)*mash for *kpokpo gari* (Control sample)
B= 70% 15% Ratio of Cassava (*manihot esculenta)*, coconut *(cocos nucifera)*and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively
C=60% 25% Ratio of Cassava(*manihot esculenta)*, coconut*(cocos nucifera)* and groundnut *(arachis hypogaea)*flour in the *kopkpo gari* respectively
D=50% 20% Ratio of Cassava(*manihot esculenta)*, coconut *(cocos nucifera)* and groundnut*(arachis hypogaea)* flour in the *kopkpo gari* respectively

Table 4 shows the sensory properties of *kpokpo gari* snacks. As shown in figure 1, sample C (Cassava/coconut/groundnut, 60:20:20%) was the most acceptable for color, texture and overall acceptability, sample B (Cassava/coconut/groundnut, 60:20:20%) was most acceptable for taste and flavor while sample A (control sample) was the least for all sensory parameters.

Discussion
Table 1 showed that the proximate composition of *kpokpo gari* snack enriched with coconut *(cocos nucifera)* and groundnut *(arachis hypogaea)*. The

Inclusion of groundnut and coconut into the cassava marsh for the production of *kpokpo gari* resulted in significant ($p<0.05$) reduction in the moisture content ranged between 8.5% to5.40%. This compared favorable well with the analysis of moisture content of *kpopko gari* snack enriched with cashew *(Anacardium occidentale)* nut and coconut *(arachis hypogaea)* which ranged from7.60-4.22% (Emelike and Akusu 2018). This is advantageous because reduction in moisture will reduce the proliferation of spoilage organisms especially mold, thus improving shelf stability of the product as reported by Appoldt and Raihani (2017) in food quality and safety that moisture content influences the taste, texture, weight, appearance and shelf life of food stuffs. The ash content increased as the quantity of added coconut and groundnut increased and the quantity of cassava mash decreasing. The increase in ash content is a reflection of an increase in the mineral content of the *kpokpo gari* produced which was comparable to that reported by Arisa et al. (2011) for gari made from blends of cassava and groundnut flour was (0.00 15-0.490%) ash.

The fat content of the *kpokpo gari* samples increased significantly ($p<0.05$) from 1.18% for control sample to 4.76% (Cassava/coconut/groundnut. 50:25:25). The increase in fat content could have been due to the fact that groundnut *(arachis hypogaea)* granules and coconut *(cocos nucifera)* flour has a high percentage of fat as it is and oil bearing seed. This result is also in line with a previous study on chemical and sensory properties of gari enriched with sesame seed flour (sesamum indicum l.) where the fat content of enriched gari significantly increased from 0.33% in the control sample to a range of 5.42% in the enriched sample, (Oluwamukomi (2015).

The protein content of the samples ranged from 5.47-13.31% the increase in protein content could be due to the addition of groundnut and coconut during the production of the snack. This result is similar to earlier studies by Oluwamukomi and Adeyemi (2014) who reported the increased of protein content of gari by supplementing it with legume protein sources.

The decrease in Crude fibre could be due to reduction of groundnut and coconut in the cassava mash (which had lower fibre and carbohydrate contents than cassava mash). It was observed that as the quantity of groundnut and coconut increased, the carbohydrate content decreased. The decrease in carbohydrate is a direct consequence of increasing groundnut (*arachis hypogaea)* and coconut(*cocos nucifera)* in the cassava mash blends.

Generally the increase in mineral content in the *kpokpo gari* samples is due to higher concentrations in coconut and groundnut compare to cassava mash. The coconut meat contains sodium, potassium, calcium, magnesium. This result is in line with previous study by (Eshun, Amankwah and Barimah,(2013) who reported that coconut is rich in the minerals which is good for bone formation. Thus these flours could be composited with cassava to improve the nutritional quality of resultant food product. The presence of these minerals in the snack is beneficial as they could mitigate the prevalence of certain nutritional deficiencies. The result is an indication of the usefulness of coconut and groundnut in increasing the mineral concentrations of *kpokpo gari*

The diameter and height of the *kpokpo gari* samples increased with inclusion of groundnut and coconut compared to the control. The high fat content present in groundnut (*arachis hypogaea)* and coconut (*cocos nucifera)* correlates with the increasing diameter and height of *kpokpo gari* samples and as a result. The sensory evaluation revealed that *kpokpo gari* from 100% cassava mash (*manihot esculenta)*, (control sample without coconut *cocos nucifera* and groundnut *arachis hypogaea*) was significantly (p<0.05) different in all sensory parameters. This indicates that the incorporation of groundnut and coconut at levels of 20 and 25% were accepted by the panelists.

Conclusion

The study has shown that kpokpo gari can be enriched with nutrients using coconut *(cocos nucifera)* and groundnut *(arachis hypogaea)*. Inclusion of groundnut and coconut into the cassava marsh for the production of kpokpo gari resulted in significant (p<0.05) increase in the protein, fat and ash contents of kpokpo gari with a corresponding decrease in carbohydrate, moisture and crude fiber contents. There was also an increase in the mineral concentration, diameter and height of the kpokpo gari samples with a decrease in weight of the kpokpo gari samples. This study indicates that though all the samples were accepted, but the blend of Cassava/coconut/groundnut 60:20:20% was the most preferred. Addition of coconut and groundnut helped to reduce the carbohydrate content but enhanced availability of desirable minerals and protein, therefore incorporation of coconut and groundnut paste into the production of kpokpo gari product would improve nutritional content and prevent malnutrition among consumers of these products.

Recommendation

1. Enriched snack such as Cassava mash, coconut granules and groundnut (kpokpo gari) snack is recommended for consumers due to its nutritional qualities identified in the course of this study
2. Further research should be carried out on microbiological and storage stability of mashed cassava, coconut granules and groundnut flour (kpokpo gari) snack

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Footwear Merchandizing Skills Needed by Graduates of Colleges of Education for Self-Reliance in Delta State

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Abstract

This study determined footwear merchandising skills needed by graduates of Colleges of Education for self- reliance in Delta State. Survey research design was adopted. Three research questions guided the study. The population was made up of 2,450 foot wear and clothing and textile related business merchandisers/entrepreneurs and 62 home Economics lecturers in Colleges of Education in Delta State. Simple random and non-proportionate stratified random sampling technique were used to select a sample size of 200 entrepreneurs and lecturers. Questionnaire was used for data collection. The instrument was face validated by three experts (3). The internal consistency of the instrument was determined by using Cronbach alpha reliability method and 0.96 reliability coefficient was obtained. The data generated were analyzed using mean and standard deviation. Findings of the study include fourteen (14) planning, ten (10) organizing and eleven (11) marketing merchandizing skills needed for footwear business venture and its growth. Recommendations were made based on the findings of the study among which includes the need for more practical teaching in clothing and textile related business venture for self-reliance

Keywords: Footwear, Merchandising, Skills, Entrepreneurial, Graduates, Business, Venture

Introduction

Graduates in Nigeria today are faced with a range of socio-economic challenges. Despite policies and programmes to curb unemployment and poverty, unemployment and poverty remains a major challenge to the developmental process of the Nigerian economy. According to National Bureau of Statistics (NBS) (2019) the unemployment and poverty rate in Nigeria has risen to 6.11 percent and 40.1 percent respectively. The challenges of unemployment and poverty however, still remain unabated (Mbah and Umurhurhu, 2016). The situation has been attributed tovarious factors including lack of entrepreneurial skills, competence based and demand driven curriculum in schools. This has created a gap between the skills needed for employment and skills possessed by graduates, which cannot empower graduates for self-employment and self-reliance. This high rate of unemployment among graduates has prompted a renewed call on entrepreneurship especially in technical and vocational courses in Nigeria.

Technical and Vocational Education and Training play a vital role in a society's economic growth and social development (Amedome and Fiagbe (2013).Programmes embedded in technical and vocational education training include competency-based applied learning which contributes to an individual's academic knowledge, higher-ordered reasoning, problem solving and occupation-specificskills, necessary for economic independence (Forster, Quarcco, LamiAshong and Ghanny, 2017). In Nigeria today, emphasis is on technical and vocational education in order to provide graduates with employable skills that will make them self- reliant and employers of labour in order to reduce unemployment and poverty. One of the programmes under technical and vocational education in Nigeria is Home Economics, which is studied at all levels of education.

Clothing and textiles which is an area of Home Economics equips students with skills for self- employment while they are still in school. Technical Skills acquired from clothing and textiles in schools alongside entrepreneurial skills can help graduates initiate clothing and textiles related businesses. It also equips them with skills for constant improvement and innovations in their undertaken. Empowering clothing and textiles students with entrepreneurial skills is essential. Clothing and textile skills according to Shaw (2003) in Chidume and Emelue (2011) includes working with hands, working with machine, quality work, critical thinking, focusing, school skills- mathematics, reading, science and art etc. Students that have acquired entrepreneurial skills in textiles and clothing can establish business ventures in garment construction, laundry services, bedding production, garment making, fabric production and design, clothing and foot wear merchandizing among others which can result to self-employment(Chedume and Emelue, 2011).

One solution to unemployment is the generation of self- employment. Technical and entrepreneurial skills such as planning, organizing, marketing, accounting, implementing among others are essential for running a successful business venture (Anyakoha, 2015). In the same vein, Armstrong-Gibbs and McLaren (2017); Pearson, (2017) noted that planning, organizing, accounting, human resources, marketing are an essential function of merchandising management process. These technical and entrepreneurial skills as well as merchandising management processes are also needed in footwear merchandizing business venture. The need for foot wear merchandizing for self –reliance has become imperative in the face of gross unemployment of NCE graduates and reduction in availability of teaching positions and other paid employment. The footwear merchandising skills needed by NCE graduates include: planning skills, organizing skills and marketing, which the study is delimited to. The success of any foot wear merchandising business is a function of committed and dedicated foot wear merchandising entrepreneurs.

Merchandise describes the products and services that a merchant offers to the target market while merchandising refers to all the decisions that go into the selling of a product or service. These decisions include what to sell, who to sell it to, how the product item will be packaged and displayed and the price at which the product will be offered to the consumers, among other activities (Jacobs, 2018). According to Gilbert (2017) merchandising is a plan approach to selecting, buying, presenting and selling merchandise to maximize profit on investment and satisfy consumer demand through making the right merchandise available at the right places, times, prices and quantities. For the purpose of this study, merchandising is defined as a key retail function that manages and/or coordinates the development, buying, planning, sourcing, and distribution of products in the supply chain to offer the right merchandise assortment(s) to satisfy a specific target market's needs and wants, as well as generate profit.

Footwear merchandising includes all the activities involved in the planning, buying and selling of foot wear items. It entails all activities aimed at bringing foot wear goods and services to the market place, selling strategies, profit making and record keeping. It is thus product or service meant for sale and is capable of giving the consumer satisfaction .According to Gilbert (2017) foot wear merchandising therefore, entails; idea generation, planning, promotion, selling, buying and distribution of foot wear products and services to the consumer. It is a means of maximizing sales using product design, selection, packaging, display and pricing to stimulate consumers to spend more.

Foot wear merchandising simply put is therefore the skills and knowledge involved in the buying and selling of foot wear goods and services. Numerous foot wears and items can be merchandised and these include; foot wear for babies, men shoes, women shoes, sports/athletic shoe, slippers, slip-on for different individuals, ages and sex,foot wear accessories like; shoe lace, foot wear strap, shoe brushes, shoe buckle, shoe sole, shoe care products among others. This consequently, creates enormous market and employableopportunities for the foot wear merchandiser. The place of foot wear as a basic human need makes these opportunities very important and viable. Foot wear merchandising exists as large, medium and small scale enterprises. Such enterprises exist in varying forms for assorted components of foot wear in both urban and rural areas of the country.

Foot wear is a product that is used to protect human feet from effects of all biological damages.According to Thompson and Philip (2015) footwear is used for covering and protecting the foot from ground textures, temperatures, and from gravel roads. In Nigeria, the knowledge of foot wear and its importation into Nigeria came along with the presence of the colonial masters. As the need to protect the feet became glaring, the quest for foot wear became essential. Today, it is difficult to see a Nigerian adult, teenagers and children outside their homes without one form of footwear or the other. Everybody wears shoes whether rich or poor; they are basic fashion accessories necessary to complete an outfit and look beautiful. Everybody needs shoes, and everybody wears them. Most people have more than one pair, others have closets full of shoes. The opportunities that lie in footwear merchandizing business are real and ever-present (Uwadia, 2019). Dressing up is not complete without nice shoes to go with it and this is one of the reasons why footwear merchandising business is a very lucrative business not just in Nigeria but also in the world at large. With creativity and style, graduates of NCE could invest in this business and enjoy financial freedom as foot wear is a very rewarding and profitable venture for new and aspiring entrepreneurs and can be a source of wealth creation (Uwadia, 2019; (Sarkar, 2013).

Successful entrepreneurs must possess certain entrepreneurial skills. Skill is the ability to use ones knowledge effectively in doing something well and successfully. According to Onuka and Olaitan (2007) skill is the capability to accomplish a task in a manner accepted by workers in the profession or domain. Skills needed to successfully conceive a business, plan for a business, establish and run the business successfully using human and non – human resources are regarded as entrepreneurship skills. The skills according to Onuoha (2007) include planning and documentation of activities in order to implement them; organizing and arranging activities resources and implementation.Thus one can be said to have acquired entrepreneurship skills in foot wear merchandising if the afore mentioned activities are carried out expertly by such a person. With necessary and adequate training from Home Economics lecturers to their students, graduates of Colleges of Education can have technical and entrepreneurial skills that can yield satisfactory employment in footwear merchandizing and this will help to better equip them and improve their economic status. This will also reduce poverty and social vices that emanates from unemployment and bring about economic benefits on graduation

Purpose of the Study

The major purpose of the study was to evolvefootwear merchandising skills needed by graduates of Colleges of Education for the establishment of footwear merchandising business venture in Delta State. Specifically, the study determined footwear merchandising skills needed for:

1. planning footwear merchandising business venture and its growth;

2. organizing footwear merchandising business venture and its growth;
3. marketing of footwear products

Research questions

The following research questions were formulated to guide the study:

1. What are the footwear merchandizing skills needed for planning footwearbusiness venture and its growth?
2. What are the footwear merchandizing skills needed for organizing footwear business venture and its growth?
3. What are the footwear merchandizing skills needed for marketing foot wear products?

Methodology

***Research Design*:** This study adopted a survey research design.

***Area of the Study*:** The study was conducted in Delta State, Nigeria. Delta state has a good number of colleges of Education that offers home economics courses and produce graduates on a yearly basis into the market field. Also a lot of foot wear merchandising business opportunities exist in this area that is filled up with students and working class men and women found in diverse sectors of the economy.

***Population of the Study*:** The population for the study comprised of all registered footwear and clothing and textile related business merchandizers and lecturers of Home Economics in the selected institutions which included: College of Education, Asaba; College of Education, Warri; College of Education, Agbo; and College of Education, Mosoga. According to the Delta State Ministry of Interior (2018), there were 2,450 registered entrepreneurs in foot wear, clothing and textiles-related enterprises in the state. The four institutions used for the study had a total of 62 lecturers ((Delta State Ministry of Education, 2018). Therefore, the total number of the population studied was 2,512.

***Sample/Sampling Technique*:** The sample size for this study was 200 respondents selected from the registered entrepreneurs in foot wear and clothing and textilerelated enterprises in the state and the lecturers in the four colleges of education in the state. Simple random sampling technique was used to select fifty (50) merchandisers/entrepreneurs from the three senatorial zones (Delta South, Delta North and Delta Central) respectively in Delta State given a total of 150 merchandizers/entrepreneurs.Non-proportionate stratified random sampling technique was used to select lecturers from the four colleges of education in the state as follows: College of Education, Asaba (14); College of Education, Warri (17); College of Education, Agbo (10); College of Education, Mosoga (9).

***Instrument for Data Collection*:** Afour point scale questionnaire was used for data collection. These were developed based on objectives of the study. The instrument was face validated by three experts.A test-retest method was adopted to ascertain the reliability of the instrument using Cronbach co-efficient Alpha. The reliability co-efficient of 0.96 was obtained.

***Method of Data Collection*:** A total of 200 copies of the questionnaire were distributed by the researcher with the help of three research assistants to the respondents. All 200 copies of the questionnaires, which is 100 % return rate, were retrieved by the researcher.

***Method of Data Analysis*:** The research questions were analyzed using mean and standard deviation (SD).Items with 2.50 and above were regarded as needed or agreed while items with a mean score below 2.50 were regarded as not needed or disagreed.

Table 1: Mean responses of foot wear merchandisers and lecturers on the merchandising skills needed in planning foot wear merchandising business venture.

S/N	Foot wear merchandizing skill of planning	Mean	Std. Dev.	Remark
1	Setting goal for footwear merchandizing	3.52	0.15	Agreed
2	Identify and select suitable location	3.53	0.19	Agreed
3	Identify market for footwear merchandizing	3.18	0.84	Agreed
4	Plan effectively for goal attainment	3.12	0.90	Agreed
5	Plan for facilities and select appropriate equipment	3.08	0.79	Agreed
6	Select skills and qualified personnel	2.62	0.27	Agreed
7	Identified market, make budgets and register the business	2.81	0.21	Agreed
8	Draw schedule of activities for the business	2.55	0.29	agreed
9	Understand importance of time management and job demand	2.60	0.27	Agreed
10	Supervise an employee in an effective manner	2.56	0.23	Agreed
11	Communicate very well with customers and business associate	3.51	0.07	Agreed
12	Determine personnel salary with caution	3.13	0.10	Agreed
13	Under competent of short long term planning	3.90	0.01	Agreed
14	Estimate seasons for high and low sales to maximize profit	3.58	0.04	Agreed

Key: Std. Dev = Standard Deviation.

Table 1 reveals that all the items needed above meet the criterion level of acceptance. This shows that the respondents agreed that all the fourteen (14) footwear merchandising skill of planning are essential for foot wear merchandising business venture and growth.

Table 2: Mean responses of foot wear merchandisers and lecturers on the merchandising skills needed in organizing foot wear merchandising business venture.

S/N	Foot wear merchandizing skill of organize	Mean	Std. Dev	Remark
1	Employ competent staff and provide them with job description	3.24	0.87	Agreed
2	Acquire and arrange facilities and equipment for footwear merchandizing	3.39	0.57	Agreed
3	Procure good and quality facility and equipment that will last	3.58	0.18	Agreed
4	Provide facilities and equipment for staff to perform their job	2.62	1.10	Agreed
5	Correct and direct staff, reward good performance and job effectiveness	2.75	1.09	Agreed
6	Hold regular management meetings with staff to Access progress of the business	3.45	0.24	Agreed
7	Formulate and document policies made in enterprise	3.55	0.18	
8	Prepare a planned budget for the year	3.08	0.37	Agreed
9	Estimate income and expenditure account for the year	3.50	0.14	Agreed
10	Make provision for delivery notes for sales	3.32	0.08	Agreed

Key: Std. Dev = Standard Deviation

Table 2 above shows that the entire mean indicated that respondents agreed in all the ten (10) items of footwear merchandizing skill of organizing as essential and needed for foot wear merchandising business venture and growth

Table 3: Mean responses of foot wear merchandisers and lecturers on the merchandising skills needed in marketing foot wear.

S/N	Foot wear merchandizing skill of marketing	Mean	Std. Dev	Remark
1	Recording number of foot wear purchase and sold	3.19	0.06	Agreed
2	Calculating cost price and selling price	2.60	1.13	Agreed
3	Fix price of foot wear and transport them	3.64	0.91	Agreed
4	Sell finished foot wear products	2.56	1.15	Agreed
5	Ensure price tags on products	3.55	0.77	Agreed
6	Ensure adequate packaging of finished products for competitive advantage	3.87	0.79	Agreed
7	Use credit sales to aid marketing	2.25	1.12	Agreed
8	Advertise business to promote sales	3.76	0.73	Agreed
9	Maintain a customer oriented philosophy	3.56	0.76	Agreed
10	Determine current and future trends in sale of products	3.56	0.79	Agreed
11	Should be able to withstand competition	2.60	1.10	Agreed

Key: Std. Dev = Standard Deviation; A= Agreed

Table 3 reveals that all the items above meet the criterion level of acceptance. This shows that the respondents accepted that all the eleven (11) footwear merchandising skills are needed for footwear merchandising business venture and growth.

Discussion of Findings

The findings in Table 1 showed that setting goals for foot wear production; identifying suitable business location; planning for facilities and selecting appropriate equipment; selecting skilled and qualified personnel and identifying market, make budget and registering the business are entrepreneurial skills of planning needed for foot wear business venture and its growth. The present study is in agreement with the assertions of Anaplan (2016); Gilbert (2017) that setting of goals and planning for facilities and personnel will help merchandisers stay accountable, measure progress and avoid waste of money and other resources. The study is also in tandem with Awo and Ukoneze (2012) who asserted that drawing up a business plan for procurement of facilities is a vital skill for successful business enterprise. This study also affirms the assertions of Emelue (2010) that entrepreneurship skills for planning a clothing production business included identifying suitable location business location, selecting appropriate equipment and tools, selecting qualified personnel among others. The authors also identified entrepreneurship skills as being the panacea to youth economic self-reliance. Specifically, Lemo (2013) added that exceptional skills in entrepreneurship are essential for succeeding in entrepreneurship enterprises. Due to the innovations in modern business, it is important to note that promoting skills in entrepreneurship will be right step in the right direction towards business growth.

Table 2 showed that Employing competent staff for specific jobs in foot wear production and providing them with job description; acquiring and arranging facilities and equipment for foot wear production; procuring good and quality facility and equipment that will last; providing facilities and equipment for staff to perform their jobs; Correcting and directing staff, rewarding good performance and job effectiveness; holding regular management meetings with staff to access progress of the business are entrepreneurship skills of organizing needed for foot wear business venture and its growth. The finding is in consonance with the assertions of Pearson (2017) that organizing is the starting point to getting an organized footwear shop as an organized shop increases work productivity and the time it takes to serve customers. The author added that customers have high expectations onhow products are organized and presented by merchandisers therefore spending time to organize a footwear business venture is essential to raise profit. The study is also in line with Onuka and Olaitan (2007); Fernades (2019) who noted that organizing as entrepreneurship skill is essential in any business production and growth. The authors further added that organizing skills such as providing staff with job description, acquiring and arranging facilities, procuring quality equipment that will last and rewarding staff effectiveness will aid the growth of business venture.

Table three showed that the entrepreneurship skills needed in marketing foot wear products will aid the success of foot wear business venture and growth and recording number of foot wear sales; calculating cost price and selling price; fixing prices of foot wear and transporting them; selling foot wear products, offer an enticing retail experience and ensuring adequate packaging of finished products are entrepreneurship skills of marketing needed for foot wear business venture and its growth. This study is in line with Armstrong-Gibbs and McLaren (2017) who stated that any entrepreneur without good knowledge of marketing as a managerial function cannot operate optimally. Marketing is a major ingredient for driving sales through creating convenient shopping experience to customers and making every customer interaction counts. This will help drive the future of a business within and across strategic, tactical and operational level. This finding is also in agreement with Uwadia (2019) who noted that understanding products hierarchy as well as adequate packaging is an essential entrepreneurship marketing skill that will aid growth of business venture.

Conclusion

The study established that planning, organizing and marketing are essential entrepreneurial skills for foot wear merchandising business venture growth for graduates of Colleges of Education for self -reliance. Therefore, graduates should be well equipped with technical knowledge and entrepreneurial skills in clothing and textile related business ventures as this is an antidote to Colleges of Education graduates unemployment and poverty. These skills will also help entrepreneurs improve their performance in the area of planning, organizing personnel administration and marketing.

Recommendations

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

1. Clothing and textilescurriculum be organized to emphasize technical and entrepreneurial skills such as business plans, marketing strategies, business empowerment content that will provide life skills training in clothing and textilerelated business venture for students under clothing and textile education.
2. Clothing and textiles teaching of related business venture should be more of practical than theory and that functional textiles and clothing laboratories be provided in schools.
3. Lecturers in clothing and textiles should be more committed to practical teachings that will lead to technical and entrepreneurial skills for self-reliance

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Strategies for Enhancing Entrepreneurship Education among Youths in Tertiary Institutions in Imo State

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Abstract

This study ascertained strategies for enhancing entrepreneurship education among youths in tertiary institutions in Imo State. Specifically, the study determined the challenges to effective entrepreneurship education and strategies for enhancing entrepreneurship education among the youths in Tertiary Institutions in Imo State. Two research questions guided the study. Descriptive survey research design was adopted. Stratified random sampling technique was used in selecting 200 undergraduate youths from two tertiary institutions in the State capital territory. Questionnaire was the instrument used for data collection. Data were analyzed using mean statistics and standard deviation. Results showed eighteen (18) challenges to effective entrepreneurship education among others which include; poor planning by the government and school management, lack of qualified and experienced teachers, poor infrastructure, materials and equipment. The result also showed nine (9) strategies for enhancing entrepreneurship education which include; creating awareness programs through mass media, technical training, seminars, workshops and practical demonstration of entrepreneurship education among the youths. The study concludes that there is urgent need for enhancement of entrepreneurship education in Nigeria. The study recommended among others that the Federal government should provide enabling environment and all the necessary equipment for easy teaching and learning of entrepreneurship education.

Keywords: Entrepreneurship, Education, Challenges, Youths, Tertiary Institutions, Strategies.

Introduction

Entrepreneurship is the engine fuelling innovation, employment generation and economic growth. Globally, there is a growing emphasis on encouraging entrepreneurship and innovation as a means of fostering economic growth (Russell, Atchison & Brooks, 2008). Entrepreneurship has been viewed and described as the art or science of innovation designed to teach one the skills and knowledge needed to know before embarking on a new business ventures (Ochigbo, Kingsley & Ugah

2018; Woolfolk, 2010).Traditionally, it has been identified as the process of designing, launching and running a new business, which typically begins as a small business, such as a startup company offering a product process or services for sale or hire. It has been identified as the capacity and willingness to develop, organize, and manage a business venture along with its risks in order to make a profit.

Entrepreneurship can be conceptualized as the discovery opportunities and subsequent creation of new organization and how entrepreneurs use these opportunities to develop new products or services and create wealth. It is for this reason that Nigeria in her *National Policy on Education* (FRN, 2014) conceived that some enduring objectives like achieving a self-reliant nation, building a great and dynamic economy be connected towards achieving self reliance, effective citizenry, efficiency and national consciousness through the education system.

Entrepreneurship education is the process of acquiring the knowledge, attitudes and skills of entrepreneurship. Such education is a programme that inculcate creativity, innovation, managerial and productive skills needed in business enterprises for self reliance and consequently in national development. Olawolu and Kaegon (2012) confirms that entrepreneurship education prepares youths to be responsible by exposing them to real life learning experience where they will be required to think, take risk, manage circumstances and incidentally learn from the outcome. Entrepreneurship education deals with the acquisition of the right habits, attitude and skills as well as means of surviving in the face of unemployment. Entrepreneurship education is important for the entrepreneur, in that the valuable skills needed by the entrepreneur can be learnt through trial and errors, but most of these errors can be eliminated by education. Lemchi (2016) noted that entrepreneurship education is about creating awareness amongst students with regards to entrepreneurship as a career option. The awareness will encourage and nurture individuals who have entrepreneurial quotient to become entrepreneurs. Entrepreneurship education therefore, among other things seeks to provide youths in tertiary institutions with the knowledge, skills and innovation to encourage entrepreneurial success in a variety of ventures. It is offered at all levels of schooling from primary or secondary schools through tertiary institutions.

Tertiary institutions are important research institutions established in most developed and in many developing countries, in which an increasing proportion of relevant age group participate in higher education to learn and cope with complexity of sustainable development. Igbo (2013) described tertiary institution as society's power house for research thus, educating students to examine critical policies, ideas, concepts and systems that will promote learning and sustainable development. Tertiary institutions include universities, polytechnics, colleges of education, and research institutes among others. They are therefore expected to develop individual's intellectual capabilities to understand and appreciate their local and external environments through teaching, research and development, sustainable development programs generation and dissemination of knowledge

In Nigeria, the need for entrepreneurship education among tertiary institution's students has led to the frequent change of the curricular and system of education in view of making the populace self reliant. This development is expected not only to address the problem of unemployment and underemployment but will ensure an entrepreneurial human capacity for national development (Ojeifo, 2013). It is with the hope that through the introduction of entrepreneurship education in our tertiary institutions, the institutions will be better repositioned, to become centers of excellence with the equipping of technical laboratories. This is to ensure that the students are well equipped with saleable skills for creation of goods and services aimed at making them self-reliance at graduation so as to reduce the problem of unemployment in the country. However, the step taken by government by making entrepreneurship education one of the compulsory general course for students in universities across the country is indeed a positive step in right direction as it will serve as a panacea for youth unemployment. Notwithstanding the Federal Government efforts, much has not been achieved. The students are not fully competent on the trained skills.

Education is an effective and veritable instrument that can be used to bring about redress. It is as well one of the greatest investments that a nation can make, and use for quick development of its economic, political, sociological and youth empowerment. Despite the importance of education in the society, it looks as if there is a steady increase in youth unemployment even among the so called graduates of vocational technical education (VTE). Adegbenjo (2012) states that the type of education that is needed for self employment and national development involves a process aimed at creating wealth for the purpose of growth, development of the environment and eradication of unemployment for sustainability. This need explains why the Nigerian government stipulated in the National Policy on Education, the acquisition of appropriate skills, abilities and competences, both mental and physical, as a pre-requisite for the individual to live in and contribute to the development of the society (FRN, 2014).Unfortunately, most of the graduates of VTE were lacking on the needed skills and competencies required to progress in the job area which they are trained. The situation supposed not to be so if the necessary training was given to the students and the needed skills acquired.

One of the major reasons for the clamor for entrepreneurship education in Nigerian schools today is to re-position the education system in order to make innovation effective in the market and elsewhere for youth empowerment. Entrepreneurship education cannot guarantee youth empowerment and reduction of youth unemployment in the near future if effective strategies for enhancing entrepreneurship are not observed and followed. Based on this, the study tends to find out the effective strategies for enhancing entrepreneurship education among youths in tertiary institutions in Imo State.

Purpose of the Study

The main purpose of the study was to evolve strategies for enhancing entrepreneurship education among youths in tertiary institutions in Imo State.

Specifically the study determined;

1. challenges to effective entrepreneurship education among youths in Imo State
2. strategies for enhancing entrepreneurship education among the youths in Imo State.

Research Questions

The study was guided by two research questions;

1. What are the challenges to effective entrepreneurship education among youths in tertiary institutions in Imo State?
2. What are the strategies for promoting entrepreneurship education among youths in tertiary institutions in Imo State?

Hypotheses

Two null hypotheses were formulated to guide the study.

H0$_1$: There is no significant difference in the mean ratings of male and female youths on the challenges to effective entrepreneurship education among youths in tertiary institutions.

H0$_2$: There is no significant difference in the mean ratings of male and female youths on the strategies for enhancing entrepreneurship education among youths in tertiary institutions in Imo State.

Methodology

Design of the Study**:** Descriptive survey design was adopted for the study as it entailed the collection of data from a defined population to describe opinion status, benefits and views of the population using the variables under study, to collect detailed and factual information that describes an existing phenomenon.

Area of the Study**:** Area of the study is Imo State. Two tertiary institutions in Owerri Municipal Council in Imo State were selected. These include Imo State University and Alvan Ikoku Federal College of Education, Owerri. Owerri Municipal is one of the 27 local government areas of Imo State situated at the heart of the city. It has pre-primary, primary, secondary and two tertiary institutions. Most youths in Imo State are undergraduates who are not fully competent on the trained skills and given the opportunity to develop their entrepreneurial skills in tertiary institutions. The study therefore, focuses on the strategies for enhancing entrepreneurship education among the youths in Imo State.

***Population for the Study*:** Population of the study comprised final year undergraduate students of Imo State University and Alvan Ikoku Federal College of Education, Owerri in 2016/2017 academic session. The total population was 8,702 youths from the two institutions comprising 3,817 males and 4,885 females (Registry Departments of both Institutions).

Sample and Sampling Techniques: A sample of 367 (200 students from Imo State University and 167 from Alvan Ikoku Federal College of Education) was used. Krejai & Morgan (1970) in Ohaka & Ohaka(2017) stated in their tables for determination of sample size for population that with a known population of 8000 and below 9000 a sample size of 367 can be used.

***Instrument for Data Collection*:** Questionnaire was used for data collection. It was developed through literature review based on the research questions. The questionnaire was divided into two parts. Responses to the questionnaire was based on a 4 point rating scale of strongly agree=4, agree=3, disagree =2, strongly disagree =1.

***Validation of the Instrument*:** Face validation of the instrument was done by three experts in the field in terms of clarity and appropriateness. Validity and a reliability coefficient of 0.96 were obtained based on experts' ratings of questionnaire items and this was adjudged to be reliable.

***Method of Data Collection*:** Three hundred and sixty seven (367) copies of the instruments were produced and administered to respondents in the two tertiary institutions in the study area. The method of administration was by direct contact. The students responded to the questionnaires appropriately.

***Data Analysis Techniques*:** The data were collated and analyzed using four point rating scale assigned to the following values; strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1. Any mean above 2.5 was accepted while means less than 2.5 was rejected.

Results:

Research Question 1: What are the challenges to effective entrepreneurship education among youths in the tertiary institutions in Imo State?

Table 1 below shows that all the items were agreed by respondents as challenges confronting effective entrepreneurship education among youths in tertiary institutions in Imo State. All the mean scores were above the criterion mean of 2.50 which is the cut-off point for acceptance. The standard deviation ranged between 0.71 and 1.33, showing that the opinion of the respondents did not differ so far. This finding showed various challenges confronting effective entrepreneurship education among youths in tertiary institutions.

Table 1: Mean scores and standard deviation on challenges to effective entrepreneurship education among youths.

S/N	Challenges to Effective Entrepreneurship Education	$\overline{X}$	SD	Decision
1.	Poor planning by the government.	3.75	1.33	challenge
2.	Negative societal attitude towards Technical and Vocational Education.	3.22	0.93	challenge
3.	Lack of qualified and experienced teachers	3.19	1.11	challenge
4.	Poor incentives to the teachers by the government.	2.97	0.84	challenge
5.	Poor infrastructure.	3.33	1.19	challenge
6.	Poor accounting skills.	2.85	0.87	challenge
7.	Overcrowded classroom/workshop.	3.38	1.14	challenge
8.	Changes in education policies	2.9	0.79	challenge
9.	Poor record keeping skills	2.72	0.71	challenge
10.	Inadequate financial assistance	3.06	1.015	challenge
11.	Lack of entrepreneurial skills	3.27	1.1	challenge
12.	Low subject knowledge matter	2.9	0.92	challenge
13.	Lack of essential facilities (e.g water, light etc).	3.05	1.03	challenge
14.	Poor inspection of institution	2.96	0.94	challenge
15.	Lack of effective leadership	3.15	0.93	challenge
16.	Lack of expertise	3.28	1.04	challenge
17.	High cost of raw material	3.41	1.22	challenge
18.	Obsolete learning equipment.	3.06	0.98	challenge

Note: $\overline{X}$ = Mean; SD = Standard Deviation; A = Agree; N = Number of Respondents

Research Question 2: What are the effective strategies for enhancing entrepreneurship education among youths in tertiary institutions?

Table 2: Mean scores and standard deviation on effective strategies for enhancing entrepreneurship education among youths.

S/N	Effective strategies for promoting entrepreneurshi education	$\overline{X}$	SD	Decision
1..	Awareness program through mass media	3.51	1.24	Strategy
2.	Technical training e.g. seminar/workshop, practic demonstration on entrepreneurial skills	3.6	1.28	Strategy
3.	Proper organization of the teaching sessions	3.04	1.09	Strategy
4.	Active involvement of the youths to promote interest towarc entrepreneurship education	3.43	1.14	Strategy
5.	Financial support by government or adequate funding entrepreneurship education	3.51	1.24	Strategy
6.	Creating economic business environment	3.33	1.05	Strategy
7.	Review of curriculum to be creativity oriented	2.94	1.12	Strategy
8.	Develop entrepreneurship internship programs	3.42	1.18	Strategy
9.	Provide small businesses in the institutions where intereste youths can participate.	3.38	1.11	Strategy

Note: $\overline{X}$ = Mean; SD = Standard Deviation; A = Agree; N = Number of Respondent

Table 2 shows the mean and standard deviation of the responses of respondents on the effective strategies for promoting entrepreneurship education among youths. All the items have their mean above 2.5 which is the cut-off point for acceptance. The standard deviation ranged between 1.05 and 1.28, showing that the opinions of the respondents did not differ so far.

Hypothesis One

H0$_1$: There is no significant difference in the mean response of male and female youths on challenges to effective entrepreneurship education among youths in tertiary institutions. The data for testing hypothesis one are presented in Table 3.

Table 3: t-test result of mean ratings of male and female youths on challenges to effective entrepreneurship education among youths in tertiary institutions.
{N_1 134 (Females); N_2 = 66 (Males)}

S/N	Challenges to effective entrepreneurship education.	$\overline{X}_1$	SD_1	$\overline{X}_2$	SD_2	T-cal	P-value	Decision
1.	Poor planning by the government.	3.73	1.32	3.7	1.35	-0.30	0.764	NS
2.	Negative societal attitude towards Technica and Vocational Education.	3.14	0.85	3.3	1.08	-1.45	0.147	NS
3.	Lack of qualified and experienced teachers	3.1	1.11	3.3	1.1	-1.57	0.11	NS
4.	Poor incentives to the teachers by the government.	3.16	0.85	2.5	0.82	4.65	0.000	S
5.	Poor infrastructure.	3.31	1.24	3.3	1.07	-0.29	0.772	NS
6.	Poor accounting skills	3.04	0.88	2.4	0.82	4.67	0.000	S
7.	Overcrowded classrooms	3.52	1.2	3.0	0.99	2.69	0.007	S
8.	Changes in education policies	2.91	0.63	2.88	1.04	0.22	0.826	NS
9.	Poor record keeping skills.	2.83	0.63	2.48	0.85	2.97	0.0037	S
10.	Inadequate financial assistance	2.97	0.97	3.24	1.1	-1.69	0.091	NS
11.	Lack of self reliance and entrepreneuria skills.	3.14	1.04	3.52	1.21	2.18	0.0292	S
12.	Low subject knowledge matter	2.81	0.87	3.12	1.02	2.12	0.34	NS
13.	Lack of essential/basic facilities e,g .wate light etc.	3.19	1.08	3.46	1.12	-1.62	0.105	NS
14.	Poor inspection of institutions	3.1	0.95	2.67	0.93	3.05	0.0022	S
15.	Lack of effective leadership	3.11	0.82	3.21	1.13	-0.64	0.522	NS
16.	Lack of expertise	3.11	0.82	3.45	1.21	2.06	0.039	S
17.	High cost of raw materials	3.3	1.161	3.45	1.33	-0.78	0.435	NS
18.	Obsolete learning equipments	3.14	1.06	2.88	0.87	1.85	0.064	NS

Key Note: $\overline{X1}$ =Mean-of-females, $\overline{X2}$= Mean of males, SD_I = Standard deviation of females, SD_2 = Standard deviation of males, t-cal is significant at 0.05 (two tailed) when t = ≤ -1.96 or ≥ + 1.96.

The results in Table 3 on hypothesis one showed that p-value of 11 out of 18 items was greater than 0.05 level of significance. This indicated that the null hypothesis which states that there is no significance difference between the responses of male and female youths in tertiary institution was accepted for eleven items while in seven items they (male and female students) have differing opinion.

Hypothesis Two

H0₂: There is no significant difference in the mean responses of male and female youths on effective strategies for promoting entrepreneurship education among youths.

The data for testing hypothesis two are presented in Table 4 below.

Table 4: T-test analysis of mean ratings of male and female youths on effective strategies for promoting entrepreneurship education among youths.

{N_1 134 (Females); N_2 = 66 (Males)}

S/N	Strategies for promoting entrepreneurship education among youths	$\overline{X_1}$	SD_1	$\overline{X_2}$	SD_2	T-cal	P-value	Decision
1.	Awareness programme through mass media.	3.64	1.27	3.24	1.16	2.2	0.0264	S
2.	Technical training seminar, workshop practical demonstration on entrepreneurial skills.	3.73	1.32	3.33	1.21	2.13	0.0331	S
3.	Proper organization of the lesson and teaching sessions	3.27	1.09	2.58	1.08	4.23	0.000	S
4.	Active involvement of the learners/youth to promote interest towards entrepreneurship of education	3.52	1.2	3.24	0.99	1,75	0.080	NS
5.	Financial support by government or adequate funding of entrepreneurship of education	3.69	1.31	3.15	1.1	3.06	0.0022	S
6.	Creating economic friendly business and political environment	3.39	1.08	3.21	0.99	1.17	0.242	NS
7.	Review of curriculum to make it creativity oriented	3.21	1.14	2.39	1.08	4.96	0.000	S
8.	Develop entrepreneurship internship programme	3.12	1.15	3.58	1.23	-2.54	0.011	S
9.	Provide small businesses in the institution where interested youths can participate.	3.45	1.16	3.24	0.99	1.33	0.183	NS

Key Note: X1 =Mean-of-females, X2= Mean of males, SD_I = Standard deviation of females, SD_2 = Standard deviation of males, T-cal is significant at 0.05 (two tailed) when t = ≤ -1.96 or ≥ + 1.96..

The result in Table 4 showed the p-value of 4, 6 and 9 items ranged from 0.080 to 0.242 which were greater than 0.05 level of significance. This indicated that the null hypothesis of no significant differences in the mean rating of male and female youths in tertiary institutions on the effective strategies for enhancing entrepreneurship skills were accepted.

Discussion of Findings

In Table 1, the 18 items identified by the study as challenges to effective entrepreneurship education were all accepted by the respondents. The result of the study indicated lack of funds, lack of expertise and obsolete learning equipment, poor planning by the government and schools among others are challenges to effective entrepreneurship education among youths in tertiary institutions in Imo State. The findings agreed with the views of Ojo (2014), who asserted that the above challenges such as poor planning by the government, lack of qualified and experienced teachers on skills training, changes in education policies, poor incentives are some of the challenges bedeviling youths in tertiary institutions which have been hindering the institution from achieving its lofty goals. Supporting this Esiowu, Ezenwanne and Obunadike(2018) suggested that students should be exposed to entrepreneurial competencies and skills necessary for becoming entrepreneurs. The above finding is in line with the findings of Ugwunwoti and Okorojiofor (2017) who outlined various strategies of managing entrepreneurship education in tertiary institutions as the establishment and use of functional laboratories, employment of qualified teachers, and provision of funds among others. These findings agreed with the views of Ejinkonye and Chukwuone (2014) that majority of lecturers teaching entrepreneurship education courses are not competent. Many of them do not have any form of entrepreneurial skills. Supporting this, Russel, Atchison, Brook (2008) asserted that majority of Nigerian tertiary institutions find it difficult sponsoring their staff for professional development workshops, to update their knowledge and skills on current trends in entrepreneurship education. This has affected our youths in tertiary institutions in Imo State negatively too, as they graduate from schools without adequate entrepreneurships' skill.

Table 2 showed that all the items on effective strategies for enhancing entrepreneurship education among youths obtained mean scores above the cut-off point of 2.50. The findings of the study showed that awareness program through mass media; technical training/seminar, active involvement/ practical demonstration of the youths, proper organization of lessons, and financial support by the government, development of internship programmes among others are some of the measures for enhancing entrepreneurship education. The above finding is in line with the findings of Emeka-Okeke (2018) that government should provide adequate funds as well as creating an enabling environment for smooth running of the laudable entrepreneurship education programmes. Teachers should know that the development of skilled workforce and expansions of human capacities through high quality of entrepreneurship education training, skill acquisition, and lifelong learning towards dynamic force for creating job opportunity are boosting the economy towards reducing poverty and protection of human dignity. The finding equally is supported by that of Aluwong (2010), who noted that development of entrepreneurship education will go a long way in creating employment, empowering the youth to be job creators and not job seekers, as well as providing them with necessary skills and knowledge to raise their output, income and wealth. All these will enrich the entrepreneurial knowledge of the students for sustainable development.

The data presented on the Table 3 with regards to Hypothesis One showed the p-value of 11 out 18 items in the table ranged from 0.064 to 0.826 which were greater than 0.05 level of significance. This indicates that there are no significant differences in the mean responses of male and female youths in tertiary institutions on the 11 identified challenges to effective entrepreneurship education among youths in tertiary institutions of Imo State .Therefore, the hypothesis of no significant ($p<0.05$) difference in the mean rating of the responses of male and female youths is accepted on 11 items in the Table. This agreed with Woolfolk, (2010), who asserted that inadequate facilities and lack of expertise are some of the challenges bedeviling entrepreneurship education in tertiary institutions of Imo State. The P values on the remaining 8 items 4, 6, 7, 9, 11, 14, and 16 are less than 0.05 level of significance. The finding of the study implied that these were significant differences in the mean responses of male and female youths on the seven items. Based on the result, the hypothesis of no significant differences in the mean responses of the male and female youths is rejected on the above items mentioned.

The data presented in table 4 showed that the P-value of 4, 6 and 9 items in the table ranged from 0.080 to 0.242 which were greater than 0.05 level of significance. This implied that the null hypothesis which states there are no significant differences in the mean rating of male and female youths in tertiary institutions on the effective strategies to enhancing entrepreneurship education in Imo state is accepted.

From the result of the study, it was found that these entrepreneurial skills will enhance entrepreneurship education among youths in tertiary institutions in Imo state. These findings agreed with the view of Amadi (2012), that entrepreneurship education will provide life and occupational skills, reinforces self- sufficiency and improves quality of life of the youths. Lack of entrepreneurial skill is in no doubt a major contributing factor to the problem of unemployment of youths in Nigeria which is also a contributing factor to high poverty rate.

Conclusion

Entrepreneurship education has been viewed as veritable antidote to the endemic problems of poverty, hunger and youth unemployment. It can be concluded that creativity involves multifaceted skills aimed at equipping youth for self reliance and preparing them for the world of work. Youth do not only need the acquisition, understanding and application of knowledge, but also the ability to meet with the ever changing societal needs.

To tackle the challenges plaguing entrepreneurship education among youths in tertiary institutions in Owerri Municipal, administrators, parents and government have roles to play towards ensuring that the challenges are combated by providing youths in tertiary institutions with the knowledge, skills, and innovation to encourage entrepreneurship success in a variety of ventures. The development of entrepreneurship education will go a long way in creating employment ,give young people the opportunity to develop their entrepreneurial skills, empowering the youth to be job creators and not job seekers and provide them with the necessary skills and knowledge to raise their output, income and wealth.

Recommendations

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

1. Adequate funds should be provided to schools to build and equip entrepreneurship Centers for student's practical work.
2. To empower youths Federal Government should provide enabling environment and the entire necessary infrastructure for easy teaching and learning entrepreneurship education needed for economic enhancement.
3. The youth should shun joblessness and criminality through the cultivation of entrepreneurial spirit and acquisition of relevant skills that will lunch them into enterprise greatness and economics independence
4. The modern-day teachers should be knowledgably, professionally and administratively competent, as well as resourceful so as to complement the effects of the government towards achieving the goals of entrepreneurship education.
5. School administrators and teachers should be encouraged and sponsored to attend seminars, workshops, conferences in order to update their knowledge on skill acquisition

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Strategies for Improving Solid Waste Disposal Practices of Households in Urban Slums in Enugu Metropolis

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Abstract

The purpose of the study was to find out the strategies for improving the solid waste disposal practices of households in urban slums in Enugu metropolis. Specifically, the study identified facilities used in waste disposal by the households, determined problems encountered in waste disposal and ways of improving the waste disposal practices of households in urban slums. Research design adopted was descriptive survey. Population for the study consisted of households in urban slums. Multi- Stage sampling technique was used to select 300 residents. Sampling occurred in three (3) stages. Convenience sampling technique was used to select three (3) slum areas in Enugu urban metropolis of Enugu State. Simple random sampling technique was used to select fifty (50) households from each of the selected slums. A total of three hundred (300) residents of the slums, one hundred (100) residents from each of the three (3) slum areas were the respondents for the study. The target sample was selected using convenience sampling technique based on accessibility and willingness of the residents to participate in the study. The instrument used for data collection was a questionnaire designed by the researchers. Mean and standard deviation were the techniques that were employed for the analysis of the data collected. Findings show eight (8) facilities used by slum households in disposal of waste, eighteen (18) problems slum households encounter in waste disposal and twenty – two (22) ways of improving the waste disposal practices of slum households. Based on the research findings, some recommendations were made for improving the sanitary conditions of residents in urban slums.

Keywords: Strategies, Improving, Sanitary, Residents, Urban, Slums

Introduction

The environment encompasses all living and non-living things occurring naturally on earth or some region thereof; it encompasses the interaction of all living species. It is the sum of conditions in which an organism has to survive or maintain its life process. The simplest explanation about why the environment matters is that the environment is the home of humans. This is because the day-to-day activities of every family and individual are carried out in the environment. It is where households live, breathe, eat, raise their children, etc. It is no gainsaying the fact that the environment influences every facet of the life of the individual and the society at large. When a person lives in an unhealthy environment, the effect it has on the individual's health is adverse.

Living in an unhealthy environment has serious health implications for the individuals or families' resident in that immediate environment. This is often caused by their ways of life and the facilities obtainable in the environment. The facilities available are affected by factors such as rapid urbanization, rural-urban migration, steady economic downturn, decay of urban infrastructure, poor quality of original construction, lack of integrated planning, negligent urban housekeeping, preservation of historic value, disaster and war (Pat-Mbano & Nwadiaro, 2012; Emodi, 2013; Islam & Islam, 2016). Aside all these outlined factors, another hydra headed monster troubling governments both in developed and developing nations, is the uncontrollable solid waste problem. However, this problem seems to be more serious in developing nations.

The management of waste remains in developing nations for the most part, are both inefficient and inadequate causing numerous adverse environmental, social and sustainability impacts (Elgizawy, El-Haggar & Nassar, 2016). This problem is mostly evident in urban centres than rural settlements. This can be attributed to the fact that the sources of solid waste generation which are residential waste, commercial waste, institutional waste, construction and demolition waste, municipal solid waste, industrial waste, agricultural waste and treatment plant wastes, are all accessible in urban centres rather than rural settlements (Tchobanoglous & Kreith in Elgizawy, El-Haggar & Nassar, 2016). However, due to the recent rise in urban populations due to rural – urban migration, the solid waste management of this ever-increasing population and changes in their consumption patterns gives rise to one of the greatest environmental health challenges and continues to overwhelm sanitation facilities and staff at both local and national levels (Cecilia, 2012; Marshall & Farahbakhsh, 2013). Proper sanitation is therefore needed in all areas of the environment including the urban slums.

Urban slums as settlements, neighborhoods, or city regions that cannot provide the basic living conditions necessary for its inhabitants, or slum dwellers, to live in a safe and healthy environment (Fisher, 2012). The United Nations Human Settlements Program (UN-HABITAT 2012) defined a slum settlement as a household that cannot provide one of the following basic living characteristics:

- Durable housing of a permanent nature that protects against extreme climate conditions.
- Sufficient living space, which means not more than three people sharing the same room.
- Easy access to safe water in sufficient amounts at an affordable price.
- Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people.
- Security of tenure that prevents forced evictions.

Slums are unplanned, unorganized, and clustered residential areas in urban centers mostly as a result of high influx of migrants for rural areas (Phanuel & Glanda, 2016). More recently, Mufti, Golam & Sayed (2017), a slum is seen as an unhealthy area where basic amenities such as water supply, drainages and other basic necessities for a standard living are lacking. Slum settlements are mainly known for building structures in an unplanned and haphazard manner, with little or no recourse to better planning to ensure better living standards. This is perhaps the reason why development and upgrade of slum settlements requires high investments for providing necessary infrastructure facilities (Gowda, Chandrashekar, Sridhara & Hemalatha, 2013; Adedayo & Malik, 2016).

In all, adequate sanitation and municipal solid waste collection are the most critical lacking public services in slum areas (Mukama, Ndejjo, Musoke, Musinguzi, Halage, Carpenter…,2016). The state of sanitation in urban slums are nothing to write home about, and this affects the health of the slum dwellers. This is because dense and overcrowded living quarters creates a breeding ground for transmittable diseases, which can lead to the rise of an epidemic. Slum dwellers most times, do not have access to clean and affordable drinking water and as a result, they are at a risk of waterborne diseases and malnutrition, the same is to be said for slums with no access to adequate sanitation, such as proper plumbing and garbage disposal (Monney, Odai, Buamah, Awuah & Nyenje, 2013; Emodi, 2015). Significantly, there is a need for components of sanitation practices in urban slums such as refuse generation and disposal practices to be reviewed and lasting solutions provided to their waste disposal problems.

The slum areas in Enugu (the study area) include the settlements in Ugbo Fred, Ugbo Odogwu, Nkpologwu, Ugbo Chime, Ugwu Fred, Ugwu Aaron, parts of Abakpa and Emene (Emodi, 2017). The author further stated that very few residents in these settlements practice proper sanitation, some have access to electricity, and homes constructed entirely from concrete are infinitesimal if not non-existent. In these settlements, most homes are constructed from fragile, recycled metals or even zinc sheets that are not even secured to a permanent foundation. In these parts, there is an evident lack of some very essential basic amenities, and inadequacy of facilities when available. For instance, residents have limited access to working toilets and therefore they resort to relieving themselves in the nearby stream and bushes.

The effects of these sanitation practices in these slums are threatening to both human life and the environment. The repercussions of these actions range from flooding, water pollution, and spread of diseases and ugly sights of stinking and pest-infested piles of solid waste in urban slums (Marshall & Farahbakhsh, 2013; Adedayo & Malik, 2016; Mukama et. al., 2016). The slum-dwellers appear to be more susceptible to various waterborne diseases such as typhoid, diarrhoea, hepatitis and so on (Mufti, Golam & Sayed, 2017). This could be attributed to the fact that refuse disposal in these areas are very irregular as households' dump refuse by the road sides, in the nearby bushes and even in the nearby stream. Unfortunately, the nearby stream also serves as a source of drinking water to some others. Emodi (2015), conducted a study of the impacts of industrial discharges on surface water and a case study of the Ekulu river that runs through Emene and Abakpa axis. For the author, the impacts of the industrial effluents on the receiving Ekulu river were manifested in various dimensions; high level of turbidity (72mg/l) was observed among other issues.

High turbidity of this river is a dangerous phenomenon as most slum households in these areas use the river as a source of drinking water. For clarity, it bears mentioning, the serious effects of this phenomenon on the environment and ecosystem. It can increase the cost of water treatment for drinking and food processing, harm fish and other aquatic lives by reducing food supplies, degrading spawning beds and affecting gill functioning, high turbidity diffuses sunlight and slows photosynthesis, plants begin to die, reducing the amount of dissolved oxygen and increasing the acidity (Emodi, 2017). This stresses the need to adequately provide better sanitation facilities in these slum areas.

In areas in which sanitation facilities are present, there is utter disregard or abuse of these facilities. According to Sankoh, Yan, & Tran (2013), waste in slum areas is ultimately thrown into municipal disposal sites and due to poor and effective management, the dumpsites turn to sources of environmental and health hazards to people living in the vicinity of such dumps. For an instance, dumpsters are present in some places but not to equate the number of residents using it. Even when filled up, there are not disposed of immediately. These practices enable bacteria proliferate in the environment. Bacteria are disease causing organisms that can cause food poisoning and a host of other health problems if left to proliferate. Therefore, there is a need to keep the home exceptionally clean. This is because, a clean environment limits the breeding of bacteria and other disease – causing organisms that are known to flourish in unhygienic places. Hence, there is a need for improved sanitation in these slum areas.

Purpose of the Study

The general purpose of the study was to find out strategies for improving the sanitary conditions of residents in urban slums. Specifically, the study identified;

1. Identified facilities used by slum households in disposal of waste.
2. Identified problems slum households encounter in waste disposal.
3. Determined ways of improving the waste disposal practices of slum households

Methodology

***Research Design*:** The study adopted survey research design.

***Area of the Study*:** The area was carried out in Enugu urban metropolis in Enugu state. Enugu metropolis is one the urban areas of Enugu state which comprises of an estimate of about seven hundred and seventeen thousand, two hundred and ninety-one people (717,291) (NPC, 2010). It covered Ugbo Fred, Ugbo Odogwu, Nkpologwu, Ugbo Chime, Ugwu Fred, Ugwu Aaron, parts of Abakpa and Emene quarters of Enugu urban metropolis. These are the slum areas of Enugu metropolis constantly plagued by solid waste management problems as seen in the study.

***Population for the Study*:** The population for this study comprised of all urban slum households in Enugu metropolis of Enugu State. Members of the households were the respondents. According to the report of the National Population Commission (NPC) Priority Table Volume III, Enugu metropolis comprises of an estimate of about seven hundred and seventeen thousand, two hundred and ninety-one people (717,291) (NPC, 2010).

***Sample and Sampling Technique*:** Multi-Stage sampling technique was used to select 300 residents. Sampling occurred in three stages. In the first stage, convenience sampling technique was used to three slum areas in Enugu urban metropolis of Enugu State. In the second stage, simple random sampling technique was used to select fifty (50) households in each of the selected slum areas. In the third stage, one hundred residents were selected from each of the slum areas. Hence, a total of three hundred (300) residents of the slums made up of one hundred (100) residents from each of the three (3) slum areas were the respondents for the study. The target sample was selected using convenience sampling technique based on accessibility and willingness of the residents to participate in the study.

***Instrument for Data Collection*:** The study utilized questionnaire as the instrument for data collection. The questionnaire was made up of three clusters. The first cluster (Cluster A) sought for information on the the facilities used by slum households in waste disposal. Cluster B and C elicits information on both the problems encountered by households in waste disposal and the ways of improving waste disposal practices of households respectively. The questionnaire items were drawn from the reviewed literature. The questionnaire was structured and developed by the researcher. The instrument adopted a four-point Likert scale with response options of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The questionnaire was validated by three experts in the Faculty of Vocational Technical Education. A final copy was then produced based on the corrections and inputs made by the validators.

***Method for Data Collection*:** Three hundred copies of questionnaire were distributed by hand to the respondents. These were also collected by hand after distribution. Three hundred (300) copies of the questionnaire were distributed and the 300 copies were filled and returned.

***Method of Data Analysis*:** The completed copies of the questionnaire were examined for completeness. The mean was used to determine the agreement and disagreement levels of the items on the strategies, problems and solutions. In line with the four-point Likert scale adopted on the questionnaire, nominal values assigned to the different scales were as follows SA = 4, A = 3, D = 2, and SD = 1. Therefore, any response that falls within 3.0 and above was taken as agreed, while the ones that fell within 0.5 to 2.5 was taken as disagreement on the items.

Findings

The following findings were made:

Facilities Used by Slum Households in disposal of waste?

Table 1: Mean Responses on Facilities used by slum households in disposal of waste

S/N	Facilities Used by Households in Waste Disposal	$\overline{X}$	SD	Remarks
1.	Reusable clothe bags	2.20	1.14	Not Used
2.	Dust bins	2.96	0.97	Used
3.	Paper bags	2.56	1.07	Used
4.	Dumpsters	3.00	2.04	Used
5.	Plastic waste bins	2.87	0.98	Used
6.	Plastic bags	2.84	1.05	Used
7.	Incinerators	2.22	1.17	Not Used
8.	Garbage trucks	2.81	1.12	Used
9.	Disposal drums	0.90	2.95	Not Used
10.	Empty cartons	2.70	0.93	Used
11.	Raffia Baskets	0.98	2.60	Not Used

Key: $\overline{X}$ = Mean responses of Slum Residents, SD = Standard Deviation of the responses

Table 1 shows that seven (7) items out of eleven (11) items had a mean score ranging from 2.56 to 3.00. All these means are above the cut-off point of 2.50. There are termed as agreed. This shows that seven (7) out of eleven (11) items were agreed upon by the respondents as the different facilities used by households in disposal of waste the urban slums. The fourth item – use of dumpsters scored the highest mean of 3.00. Therefore, the respondents saw this as the one of the most common facility used by slum households in disposal of waste. The table also shows that four (4) items out of the eleven (11) items had a mean score ranging from 0.90 to 2.22. This shows that five (5) out of the twelve (12) items for this research question were disagreed upon by the respondents. Also, the degree of agreement with item 9 which was 0.90 was the least mean in the table. This further emphasizes that the respondents preferred certain items to others.

Problems slum households encounter in waste disposal

Table 2: Mean Responses on problems slum households encounter in waste disposal

S/N	Problems Encountered by Households in Waste Disposal	$\overline{X}$	SD	Remarks
1.	Waste bins are not enough.	3.24	1.08	Agree
2.	Waste bins/ dumpsters are easily and always filled up.	2.94	0.77	Agree
3.	Lack of waste disposal facilities.	2.67	1.05	Agree
4.	Distance of dumpsters, and other waste disposal facilities from the home.	2.93	1.04	Agree
5.	Lack of information on proper waste management.	2.98	1.06	Agree
6.	Delays in waste collection leading to overflow of dumpsters and other disposal facilities.	3.06	0.98	Agree
7.	Roads to dumping sites are always too bushy.	2.74	0.98	Agree
8.	Dumping of refuse in drainages leading to choking of drainages.	2.99	1.03	Agree
9.	Emission of foul smell from garbage.	3.06	0.98	Agree
10.	Dump sites attracts stray animals, birds and dogs.	2.72	0.92	Agree
11.	Generation of a very large quantity of waste in the home e.g. plastics, paper etc.	3.04	0.83	Agree
12.	Access roads to dump sites being lonely and insecure.	2.59	1.14	Agree
13.	Lack of adequate manpower on the part of the waste management authorities.	3.17	1.01	Agree
14.	Dumping of refuse in the stream or bushes causing pollution.	3.08	0.80	Agree
15.	Non-maintenance of compost site leading to infestation by disease vectors.	2.40	1.46	Disagree
16.	Lack of waste management initiatives at the community level.	3.01	0.98	Agree
17.	Improper disposal of biodegradable and non-biodegradable waste.	2.82	0.96	Agree
18.	Poor enforcement on the part of sanitation agents.	2.94	1.01	Agree
19.	Corruption of waste disposal agents that affect their performance on the job.	2.75	1.10	Agree

Key: $\overline{X}$ = Mean responses of Slum Residents, SD = Standard Deviation of the responses

Table 2 shows that eighteen (18) items out of nineteen (19) items had a mean score ranging from 2.59 to 3.24. All these means are above the cut-off point of 2.50. There are therefore termed as agreed. This shows that eighteen (18) out of nineteen (19) items were agreed upon by the respondents as the problems households in slums encounter in waste disposal. The first item – indicating that waste bins are not enough, scored the highest mean of 3.24. Therefore, the respondents saw this as the one of the most common type of problem encountered by the households in slums in waste disposal. The table also shows that one (1) item out of the nineteen (19) items had a mean score of 2.40. This shows that this item was disagreed upon by the respondents. Also, the degree of agreement with item 15 which was 2.40 was the least mean in the table.

Ways of Improving the Waste Disposal Practices of Slum Households

Table 3: Mean Responses on ways of improving the waste disposal practices of slum households

S/N	Ways of Improving Waste Disposal Practices of Households	$\overline{X}$	SD	Remarks
1.	Provision of waste disposal facilities to equate the number of the households using it.	3.53	0.78	Agree
2.	Provision of more waste bins to equate waste generated in the household.	3.27	0.63	Agree
3.	Provision of proper waste disposal facilities by the government.	2.91	0.99	Agree
4.	Placement of bins at appropriate distance from the home.	3.19	0.99	Agree
5.	Educating households on proper waste management practices.	3.09	0.85	Agree
6.	Timely disposal of waste from dump site by the waste management authorities.	3.11	0.87	Agree
7.	Provision of good access roads leading to dump sites.	3.05	0.89	Agree
8.	Avoid dumping refuse in the drainages to avoid blockage.	3.56	0.80	Agree
9.	Properly covering the waste disposal facilities to reduce the foul smell it emits.	3.12	0.75	Agree
10.	Proper disposal of waste inside the dumpsters, waste bins and covering them properly to avoid access to stray animals.	3.49	0.78	Agree
11.	Minimal use of cellophane bags e.g. the use of reusable clothes bags instead of plastic bags in shopping.	2.88	1.09	Agree
12.	Reduction of paper usage.	2.75	0.96	Agree
13.	Buying food in bulk to reduce waste.	2.40	1.00	Disagree
14.	Buying foods that have less packaging and reusing of containers.	2.83	1.05	Agree
15.	Siting of disposal sites to areas less lonely.	2.87	1.06	Agree
16.	Recruitment of more workers to aid waste collection and disposal.	3.24	0.93	Agree
17.	Disposal of waste at designated waste disposal points.	2.88	1.05	Agree
18.	Maintain compost site and use compost once ready.	2.98	0.99	Agree
19.	Creation of effective waste management initiatives at the community level.	3.13	0.95	Agree
20.	Use of separate bins for biodegradable and non-biodegradable waste to ensure proper disposal.	3.05	0.99	Agree
21.	Ensuring an increase in enforcement on the part of the sanitation agents.	3.11	0.83	Agree
22.	Re-orientation of waste disposal agents to shun corruption.	2.91	0.93	Agree
23.	Using law enforcement agencies to ensure strict adherence to proper waste disposal.	2.91	1.17	Agree

Key: $\overline{X}$ = Mean responses of Slum Residents, SD = Standard Deviation of the responses

Table 3 shows that twenty-two (22) items out of twenty-three (23) items had a mean score ranging from 2.75 to 3.56. All these means are above the cut-off point of 2.50. There are therefore termed as agreed. This shows that twenty-two (22) out of twenty-three (23) items were agreed upon by the respondents as the ways of improving the waste disposal practices of households in slums. Item 8 – indicating that avoiding dumping refuse in the drainages to avoid blockage is a way of improving waste disposal, scored the highest mean of 3.56. Therefore, the respondents saw this as the one of the ways of improving the waste disposal practices of households in slums. The table also shows that one (1) item out of the twenty (23) items had a mean score of 2.40. This shows that this item was disagreed upon by the respondents. Also, the degree of agreement with item 13 which was 2.40 was the least mean in the table.

Discussion of Findings

The findings of the study revealed that there are about ten (10) types of facilities used by slum households in disposal of waste. The facilities used by slum households in disposal of waste include dust bins, paper bags, dumpsters, plastic waste bins, plastic bags, garbage trucks, and empty cartons. This is in line with findings in studies conducted by Nirgude, Naik, Prasad & Nagaraj (2014), Gowda et. al. (2013) and Adedayo & Malik (2016). The authors findings are in line with the findings of the present study on the different types of waste disposal facilities available to slum households and most frequently utilised by slum households.

Across reviewed studies, the problems slum households encounter in waste disposal are quite numerous. However, the problems that are mostly experienced by residents of slum areas include lack of waste disposal facilities, lack of information on proper waste management, lack of adequate manpower on the part of the waste management authorities, dumping of refuse in the stream or bushes causing pollution, lack of waste management initiatives at the community level, improper disposal of biodegradable and non-biodegradable waste, and poor enforcement on the part of sanitation agents. These outlined problems are the seen in several studies including this current study. This study's findings on problems encountered by slum households in waste disposal are in line with studies conducted by Monney et. al. (2013); Sankoh, Yan, & Tran (2013); Emodi (2015); Phanuel & Glanda (2016); Emodi (2017); Mufti, Golam & Sayed (2017), among others. However, the other findings on problems encountered by slum households were identified in this present study but not seen during literature review.

Studies reviewed were also in agreement of several solutions to waste disposal problems of slum dwelling households as seen in the findings of the current study. Such common solutions as seen in previous studies include provision of proper waste disposal facilities by the government, educating households on proper waste management practices, recruitment of more workers to aid waste collection and disposal., disposal of waste at designated waste disposal points, creation of effective waste management initiatives at the community level, use of separate bins for biodegradable and non-biodegradable waste to ensure proper disposal. These findings were in line with studies conducted by Emodi (2015); Elgizawy, El-Haggar & Nassar (2016); Phanuel & Glanda (2016); Adedayo & Malik (2016); Emodi (2017). Aside these outlined solutions, other findings as seen in the present study were not found in studies reviewed by the researchers during the course of this study.

Conclusion

Presently, in order to have a good state of health, we must be clean ourselves; work areas must be kept clean; all utensils used in the home must be spotless. If we do not observe the rules of sanitation and healthy living, we may become ill or cause others to become sick from either food poisoning or any illness arising from ill kept surrounding and unhealthy living. That is to say that unhealthy living exposes us to a large variety of diseases and ill health. Bacteria are disease causing organisms that can cause food poisoning and a host of other problems if left to proliferate over a long period of time. Therefore, the home and its surrounding environs must be kept especially clean. A clean environment limits the breeding of bacteria and other disease-causing organisms as they are known to proliferate in unhygienic places, hence the important of good hygiene and sanitation practices.

Recommendations

Based on the findings of this study, the following recommendations are suggested,

1. Homemakers should teach their children or wards these strategies so that they can adopt them when they become homemakers.
2. Extension workers that work with people in both rural and urban areas especially the slums, should provide them with the knowledge and information they need to make maximum use of our local materials available to improve their sanitary lifestyle
3. The home economics teacher should also extend the knowledge of this study to students in secondary schools who will benefit from this study as the future homemakers.
4. Also, the knowledge of this study can be extended to people through the mass media by the way of creating awareness to the masses on the effects of living in ill-kept environment/surroundings.

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Utilization of Socio - Emotional Coping Strategies by Families of Special Needs Children in Enugu State

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Abstract

The study focused on socio - emotional coping strategies utilized by families of special needs children in Enugu State, Nigeria. It answered two research questions. Descriptive survey design was adopted. Population was 430 parents (240 urban and 190 rural) with special needs children (visual impaired, hearing impaired and physically disabled). Purposive and snowball sampling techniques were used. Focus group discussion (FGD) guide and questionnaire were used for data collection. Data were analyzed using mean and standard deviation. Sixty coping strategies were identified. Some of the major findings of the study on social coping strategies utilized by families of special needs children (SNC) include: Attending parties – social outing as distraction (3.30±0.84), Stopping child from playing with others outside (2.97±1.15), Telling neighbors / friends about child's challenge (2.97±0.91) and Seeking assistance from community agencies (2.91±0.82). Among the emotional coping strategies utilized by families of SNC are: Hurting oneself (3.57± 1.55), Spoiling child with excess food (3.56 ±0.87), Blaming self about child (3,54± 0.86) and Feeling bad about child. Based on the findings of this research work recommendations were made and these include: Parents of the special needs children should utilize the findings of this study and seek avenues to improve themselves through attending health care seminars and workshops. among others.

Keywords: Families, Utilization, Special Needs, Children, Coping Strategies

Introduction

Special needs children are described as those who have or are at increased risk of chronic physical, behavioral, developmental, or emotional condition and who also require special care services of a type beyond that required by children in general {Centre for Children with Special Needs of Massachusetts (CCSNM) 2013}. Special need child is a person who is physically challenged (visual impaired, hearing impaired and physically disabled) and incapacitated, that is unable to carry out most of the tasks required to get through an ordinary day without human or material aid (Ogbonnaya, 2018).

The special needs may be as a result of physical impairment such as sensory impairment, limiting sensory function, or motor impairment, limiting mobility. It may also involve other physical disabilities such as deafness and dumbness, blindness, being crippled, or the malfunctioning of some parts of the body which limits the effectiveness with which a child can cope with the academic, social and emotional expectations of the home, school, and community (Dykens, 2000).

Special needs children are challenged in various ways. Abosi (2007) pointed out that children with special needs are labeled such as blind boy/girl, deaf boy/girl and crippled boy/girl and there are being looked down upon in the society and discriminated by peers. Hence most times, the special needs child feels unwanted and gets depressed. The feeling of depression result from lack of equal right to education and right to social integration (Adebisi, 2014). These authors further stated that these children suffer stigmatization, negative attitude from the society; poor health care systems and above all, legal support system is a fantasy. This situation is contrary to the provision of the United Nations Convention on the Rights of Persons with Disability, specifically Article 24 which clearly recognizes the rights of persons with disability to equal educational services. The article states that persons with special needs should not be excluded from the general education systems on the basis of disability, and that children with special needs should not be excluded from the free and compulsory primary or secondary educations on the basis of disability in the communities in which they live or find themselves.

Furthermore, communities, parents, caregivers and relatives should render support and special attention to the special needs children. Taking care of special needs children poses enormous challenges on parents, care-givers and society at large. These challenges include the time required for extra care, increased financial demand and stigmatization, psychological, health related issues and social burden among others (Thompson, 2000). Again some of these challenges which families with special needs children face constitute the burden of caring for them, concern about their development, the school system, worry about their acceptance in the society, problem of parents (mothers) divided love between a child with special need and other normal children in the family, time spent in the hospital and care giving, managing strange illnesses, stigmatization/ isolation and financial instability (Bennibor, 2007). National Policy for Mental Health (Republic of Namibia, 2005) also noted that challenges faced by parents of children with special needs are worsen by some factors such as superstition beliefs and community attitudes mostly by people in the rural areas that are not educated and exposed. Members of the community discriminate against such families and the special needs child/children, and believe that it is the evil of the family that caused the problem. They also noted that illiterate parents in rural areas view families having special needs child/children as families that have committed abominable act such as the mother's immoral act of extra marital affair and are being punished by the gods of the land. Therefore, the mother of the child is seen as a witch that brought about the presence of special needs child into the family. This has caused men to abandon their families. As a result, the women have to bear the burden of caring for the child/children with special needs alone (Haihambo and Lightfoot 2010; Harper, Dyches, Harper, Roper and South, 2013).

In Enugu State it was revealed that families with special needs child/children are being castigated, labelled and isolated by others in the neighbourhood. It is believed that the mother's immoral act must have led to the presence of the special needs child/children (Oduburu, 2011). Again in some cases is attributed to ritual involvement of parents especially the father in money making and such family is being discriminated against and live isolated for safety reasons. These challenges affecting parents of special needs children maybe, because there are not highly utilizing some socio - emotional coping strategies such as asking for help when necessary, going for community support and showing the special need child love among others. The challenges faced by families are enormous because parents, care-givers and other children in the family need to adapt to the pressure of special needs children (Hussain and Juyal, (2007). Children with special needs require some educational, community, social, family and vocational support in order to establish routines that will help them to function within the limits of their challenges. The scenario surrounding their social well-being could degenerate if not properly handled by their parents and other family members.

Coping strategies are indeed required to manage the special needs children because of social, emotional, and other challenges involved. Caring for special needs children which poses a lot of emotional turbulence and challenges for parents that may include: health problems, financial stress, environmental problems, lack of harmony, poor family functioning, divorce, separation, and depression (Thompson, 2000). In support of the above view, Gehan EL (2012) posited that the challenges that families of children with special need face affect their psychological, health, emotional, physical, and financial wellbeing. Hence, there is need for them to adopt some coping strategies to strengthen their family resources, reduce the source of stress or negative emotions, which will enable them to achieve a balance in family functioning.

Coping strategies utilized by parents are considered in four dimensions; Personal/family support coping strategy, external social support coping strategy, spiritual support coping strategy and denial coping strategy (Pritzalaff, 2001). Paster, Bradwein and Walsh (2009) are of the opinion that despite increased levels of challenges faced by the families of special needs children, they can still cope well and adapt effectively to such situations. According to Parisa, Hidar, Gholam and Bagher (2011), the use of coping strategies such as mediating factors of seeking social support such as family support, developing alliance with health professionals, schools and other families in similar situations will go a long way to help reduce the stress families. Boschloo, Vogelzangs, Van den, Smit, Beekman, and Penninx (2013) noted that when parents have self confidence in what they are doing, it goes a long way in helping them handle the challenges that accompany parenting children with special needs.

In Enugu State, there are many families of children with physical special needs children and these families face some challenges in the society, being looked down on, labelled negatively and belief that the evil of the family has resulted to having the special needs child/children (Oduburu,2011). These families pass through emotional trauma, health related, psychological, social and financial challenges among others. Consequently, because of the challenges families face, some parents tend to deny the presence of the child in the family, ignore them, confined them in a particular place in the house and even wish the special need child dead. Some parents have abandoned such children in special centres.

These emotional, physiological, social and financial problems associated with having SNC usually weigh down the families and lead to relationship problems between spouses, siblings and other family members. For example, spouses may have reduced trust and love between themselves and siblings may feel unwanted/neglected as parents may have less time, love, care and money for them as they struggle to meet the needs of the special needs child. These relationship problems can threaten and destroy family cohesiveness which will require socio – emotional coping strategies. However, there are coping strategies which families of SNC can utilize to enable them manage their situations and remain united and happy as a family which is not readily made available. Hence, it appears that many of the families of special needs children are not exposed to some ready to use forms of coping strategies. They use trial and error method, no training so they need coping strategies.

Purpose of the Study

The general purpose of this study was to investigate the socio – emotional coping strategies utilized by families of special needs children in Enugu State. Specifically, the study determined;

- social coping strategies which families of children with special needs in Enugu State are utilizing.
- emotional coping strategies which families of children with special needs in Enugu State are utilizing.

Methodology

Research Design: the study adopted a descriptive survey research design.

***Area of the Study*:** The study area was Enugu State which has seventeen local government area (LGAs) and six education zones.

***Population for the Study*:** The population for the study consisted of 430 parents (father or mother) with special needs children (visually impaired, hearing impaired and physically disabled) in rural and urban areas in the 17 local government areas (LGAs) of Enugu State. The number of parents of special needs children from urban areas was 240, while that of the rural was 190.

Sample / Sampling Technique: Sample size used for the study was 215 parents with special needs children (120 urban parents, 95 rural parents; 131 literate parents, and 84 illiterate parents). Two sampling techniques were adopted. The first technique involved the use of purposive sampling technique in selecting 3 local government areas out of the existing 17 local government areas (LGAs) of Enugu State where schools or centres with special needs children are available.

Instruments for Data Collection: Two instruments were used for data collection. These were questionnaire titled "Utilization of socio – emotional Coping Strategies for Families of Children with Special Needs (USECSFCSN)" and focus group discussion (FGD) guide.

Method of Data Collection: A total of 215 copies of questionnaire administered, 210 were completely filled and returned representing about 98% return rate. Respondents were allowed to fill the questionnaire under the guidance of the research assistants. Families with physical special needs children were reached through schools, health centres, hospitals, churches, homes and daycare centres. One session of focus group discussion was also held to obtain a qualitative data from the respondents.

Method of Data Analysis: The data collected for this study were analyzed using means and standard deviation for answering the research questions and information retrieved from focus group discussion guide were summarized. The mean scores were used to determine the perceived utilization level on 4 – point scale for each of the item. A mean rating of 2.50 was used for decision making.

Results

Table 1: Mean Responses ($\overline{X}$) and Standard Deviation (SD) of Parents on Social Coping Strategies Utilized by Families of SNC

		Utilization Level		
S/N	**Social Coping Strategies**	$\overline{X}_U$	SD_U	**Remarks**
1	Withdrawing from social gatherings	2.58	1.23	HU
2	Getting information/help from social media (internet)	2.34*	1.02	NU
3	Getting information from relevant books on children with special needs	2.11*	0.92	NU
4	Getting information from organizers/workers in special Centre's such as homes and orphanage	2.30*	1.01	NU
5	Interacting with experts of special education	2.31*	0.95	NU
6	Going for community support	2.65	0.99	HU
7	Giving attention to child's adequate nutrition	1.88*	0.83	NU
8	Giving attention to child's clothing	1.80*	0.80	NU
9	Helping the child to make friends	2.26*	0.90	NU
10	Encouraging child to play with other children	2.10*	0.84	NU

11	Stopping child from playing with others outside	2.97	1.15	HU
12	Teaching child basic skills like feeding, toileting, mobility, cleanliness, and respect for older ones	1.87*	1.10	NU
13	Teaching child to develop self confidence	1.65*	0.83	NU
14	Sending child early to a special school	1.86*	0.96	NU
15	Serving as role model to child	1.92*	1.02	NU
16	Asking people for help always	1.84*	0.99	NU
17	Asking neighbors / friends for solutions	1.78*	0.86	NU
18	Seeking assistance from community agencies	2.91	0.82	HU
19	Telling neighbors / friends about child's challenge	2.97	0.91	HU
20	Attending parties – social outing as distraction	3.30	0.84	HU
21	Travelling with child	2.80	1.02	HU
22	Taking child for picnic	2.77	0.95	HU
23	Driving child to activities and sports	2.87	0.98	HU
24	Planning family holiday celebration	2.72	1.06	HU
25	Travelling less because of child	2.89	0.91	HU
26	Abandoning child in special centers	1.22*	1.20	NU
27	Praying to God for divine healing	1.90*	1.12	NU
28	Attending church programs with child	1.80*	1.01	NU
29	Showing the child more love than other sibling	2.54	1.01	HU
30	Treating child like every other child at home	2.33*	1.26	NU

Key: HU = Highly Utilized; NU = Not Utilized; Number of respondents=210; X_U= Mean Utilized; SDu= Standard Deviation; *= utilization mean less than 2.50.

Table 1 shows the mean and standard deviation ($\bar{X}_I$ and SD_I) ratings by parents on the level of utilization of social coping strategies. The Table shows that only 12 of the social coping strategies have mean utilization score of 2.50 and above ($\bar{X} \geq 2.50$). Their mean range from 2.54 to 3.30. This shows that 12 coping strategies out of 13 are highly utilized. The standard deviation values of the utilization strategies range from 0.80 to 1.26 which indicated that the responses of the respondents were close to one another and the mean.

Table 2: Mean Responses ($\bar{X}$) and Standard Deviation (SD) of Parents on Emotional Coping Strategies Utilized by Families of SNC

		Utilization Level		
S/N	**Emotional Coping Strategies**	$\bar{X}_U$	**SD_U**	**Remarks**
1	Protecting child	2.02*	1.18	NU
2	Being harsh to child	1.15*	1.06	NU
3	Beating child	1.24*	0.93	NU
4	Neglecting the needs of child	1.39*	1.01	NU
5	Neglecting other normal siblings in the family	1.52*	0.92	NU
6	Denying the existence of child's special needs (challenge)	1.46*	0.98	NU
7	Mourning / crying every time because of child	1.59*	1.24	NU
8	Being angry with people around	1.42*	1.01	NU

9	Wearing a smiling face always	2.04*	1.07	NU
10	Refusing to be stressed up by people (neighbors, friends)	1.84*	0.95	NU
11	Keeping challenges to oneself	2.58	1.13	HU
12	Leaving child at the mercy of caregivers	3.42	0.96	HU
13	Changing of domestic workers regularly that are not doing well	2.90	1.02	HU
14	Feeling bad about child	3.49	0.86	HU
15	Blaming self about child	3.54	0.86	HU
16	Hurting one self	3.57	1.55	HU
17	Using kind words to child	1.91*	1.08	NU
18	Kissing child	2.09*	0.91	NU
19	Looking for solution from everyone around	2.62	0.93	HU
20	Cultivating self-compassion	2.07*	0.97	NU
21	Making out time to be with loved ones	2.04*	0.95	NU
22	Engaging in activity that help you feel better	1.91*	0.87	NU
23	Thinking of the stigma in the society	2.88	1.13	HU
24	Feeling isolated	3.22	1.09	HU
25	Hiding child always at home	3.38	0.95	HU
26	Carrying child whenever in a social gathering	3.25	0.86	HU
27	Spoiling child with excess food	3.56	0.87	HU
28	Showing child love by using kind words	2.08*	1.08	NU
29	Asking neighbors who are parents for assistance	2.58	0.97	HU
30	Thinking of possible solution	1.98*	0.97	NU

Key: HU = Highly Utilized; NU = Not Utilized; Number of respondents=210; X_U= Mean Utilized; SDu= Standard Deviation; *= utilization mean less than 2.50.

Table 2 shows the mean and standard deviation ($\overline{X}_I$ and SD_I) ratings by parents on the level of utilization of emotional coping strategies. The Table shows that only 13 of the coping strategies have mean utilization score of 2.50 and above ($\overline{X} \geq 2.50$). Their mean range from 2.58 to 3.57. This shows that 13 items out of thirty are highly utilized. The standard deviation values of the utilization strategies range from 0.86 to 1.55 which indicated that the responses of the respondents were close to one another and the mean.

Discussion of Findings

The finding of this study in respect to research question one from the responses on the questionnaire and focus group discussion (FGD) showed that the respondents agreed on some social coping strategies which include: withdrawing from social gatherings, getting information/help from social media (internet), interacting with experts of special education, getting information from relevant books on children with special needs, getting information from organizers/workers in special centre's such as homes and orphanage, going for community support, giving attention to child's adequate nutrition, helping the child to make friends, encouraging child to play with other children and giving attention to child's clothing among others. This agreed with (Khan and Humtsoe, 2016), noted that coping strategies can be characterized by focusing on the problems and the child's limitations, seeing the need for the use of social support as a personal weakness and blaming others for the child's disability.

The result on Table 1 showed that eleven items on social coping strategies are utilized. The items are attending parties – social outing as distraction, travelling with child, telling neighbors / friends about child's challenge, stopping child from playing with others outside, seeking assistance from community agencies, withdrawing from social gatherings, going for community support, taking child for picnic, driving child to activities and sports, planning family holiday celebration, travelling less because of child and showing the child more love than other sibling. The findings of this study agreed with the report of Brannon and Feist (2009) and Aransiola (2019) who identified emotional coping strategies to include releasing pent-up emotions, distracting oneself, managing hostile feelings, meditating and using systematic relaxation techniques. Similarly, the findings of the study is in line with that of Robinson (2005) who identified emotion-focused coping strategies identified as: disclaiming, escape-avoidance, accepting responsibility or blame, exercising self-control and positive reappraisal. This also agreed with Noelle (2017) that parents with development disabilities children, social support from groups and other parents can play a special and vital role. Again family members and friends provide invaluable emotional support, the typically do not possess the understanding, personal knowledge and experience of parenting a child with special needs. So seeking support from groups and creating relationships with other parents in a similar situation can help alleviate the sense of social isolation experience by parents of children with disabilities. Mobilization of social support is frequently utilized as families struggle to cope with and understand their children's disability. This is also in line with Aneke (2020) who noted that parents with special needs children should never give up on their child. It's very important to understand your child's special needs by getting the right information. Join support networks of other parents where one can learn and support one another. There are many of such groups out there. He noted his organization has a WhatsApp group with over 150 parents and resource persons exchanging ideas and support free of charge. It is only with the right information that a parent can effectively advocate for their child. Also, parents should not neglect times when they feel drained or depressed. Parents SNC to identify someone their can trust and draw encouragement from.

In addition, Carver (2011) found out that emotion-focused coping is a mechanism to alleviate distress by minimizing, reducing, or preventing, the emotional components of a stressor, seeking social support, reappraising the stressor in a positive light, accepting responsibility, using avoidance, exercising self-control and distancing. Ganjiwale, Ganjiwale, Sharma and Mishra, (2016) discovered that there can be many reasons for using problem focused and active emotional (both positive) coping strategies by parents of children with developmental disabilities. The parents felt that a realistic outlook of the child's disability and acceptance of the situation had helped them to cope.

The finding of this study is equally in consonance with that of Holahan, Moos and Schaefer, (1996) active behavioural coping style pertains to such external behaviours as problem-solving and taking or seeking professional help. Active cognitive style involves such internal processes as acceptance, positive reassessment, or finding inner strength in religious beliefs. Avoidance style includes such strategies as trying to ignore the problem, resorting to legal or illegal drugs, and keeping fears or worries to oneself without discussing them with others (Boschi, Adams, Bromet, Lavelle, Everett and Galambos, 2000). The finding of this study correspond with (Ganjiwale, Ganjiwale, Sharma and Mishra, 2016) suggested that all three coping mechanisms are relevant to parents having a child with developmental disabilities. Active avoidance coping and problem-focused coping appear to map quite clearly onto a typical emotion focused versus problem focused categorization prevalent in much stress and coping research (Folkman and Lazarus, 1980). Problem focused coping and active emotional coping in this study is associated with good quality. The coping style mainly used by the caregivers was active emotional coping which is an unhelpful approach in dealing with the demands of raising children with disabilities. According to their responses, the parents have accepted the situation and tried to look for something good in it. They try to make fun of the situation which can provide an outlet for stress for some time but which is more of an escape tendency which does not help them realistically in dealing with the situation in the long run.

The quality of life of the parents who get social support is good because in the Indian setting family plays an important role in providing support to its distressed members and the members stay together in times of crisis. Open communication is allowed in well-functioning families and it has been reported as a supportive factor in many family studies (Beavers, Hampson, Hulgus and Beavers, 1986). Family cooperation helped them to cope with the situation in a better way. Moreover, spousal support in taking care of the child as well as supporting each other helped them in care giving. Some of the mothers left their jobs and sit the whole day in the school with the child to see and repeat the same activities at home. It also helps the parent in emotional release (Burr, Klein, Burr, Doxey, Harker and Holman, 1994). Parents regarded family cohesion and co-operation as the factor most helpful for coping (Barbarin, Hughes and Chesler 1985). The fact that the spouses support each other and share care giving tasks and other housework equally is of major importance for their marital relationship and family cohesiveness (Snowdon, Cameron and Dunham, 1994).

Some researchers have indicated that active behavioural and active cognitive strategies may be more effective for alleviating distress than passive strategies, such as avoidance. For example, a study of young adolescents coping with divorce in the family showed that girls, who reported use of avoidance coping, demonstrated more psychological and physical problems than boys or girls who did not report use of such strategies, (Armisted, McCombs, Forehand, Wierson, Long and Fauber, 1990). Whereas individual coping styles can be shaped by some personal or socio-demographic factors and may remain relatively stable across the life span of the individual, the range and number of specific coping strategies can be constantly changing over the life time of individuals (Lazarus and Folkman, 1984).

The result on Table 2 showed that ten items on emotional coping strategies are utilized. The items are spoiling child with excess food, blaming self about child, leaving child at the mercy of caregivers, feeling bad about child, changing of domestic workers regularly that are not doing well, thinking of the stigma in the society, feeling isolated, hiding child always at home, carrying child whenever in a social gathering, keeping challenges to oneself and asking neighbors who are parents for assistance. The finding of this study is in line with Martin (2001), who noted that physiological processes are also influenced within the exercise of humor. For example, laughing may reduce muscle tension, increase the flow of oxygen to the blood, exercise the cardiovascular region, and produce endorphins in the body (Tariq and Khan, 2013). Using absurdity in coping while processing through feelings can vary depending on life circumstance and individual humor styles.

In regards to grief and loss in life occurrences, it has been revealed that genuine laughs/smiles when speaking about the loss predicted later adjustment and evoked more positive responses from other people (Booth-Butterfield, Wanzer, Krezmien and Weil, 2014). A person might also find comedic relief with others around irrational possible outcomes for the deceased funeral service. It is also possible that humor or absurdity would be used by people to feel a sense of control over a more powerless situation and used as a way to temporarily escape a feeling of helplessness. Exercised humor can be a sign of positive adjustment as well as drawing support and interaction from others around the loss (Booth-Butterfield (Wanzer, Krezmien and Weil, 2014). While dealing with stress it is important to deal with the physical, mental, and social well-being of the individual. One should maintain good health and learn to relax if one finds oneself under stress. According to Lane (2015), mentally it is important to think positive thoughts, value oneself, demonstrate good time management, plan and think ahead, and express emotions. Socially one should communicate with people and seek new activities that make him or her happy. By following these simple strategies, one will have an easier time responding to stresses in one's life including the managing of CWSNs. The findings of the study agreed with Fehintola (2019) that some parents of special needs children are disinterested in the welfare of their children and fail to provide them with adequate care and some parents alternatively are overly protective. Not caring for the children of special needs and being over protective, both can be problematic to the child and other family members.

Conclusion

Special needs children are described as those who have or are at increased risk of chronic physical, behavioral, developmental, or emotional condition and who also require special care services of a type beyond that required by children in general. Parents of this special needs children pass through some socio – emotional challenges that require the utilization of social and emotional coping strategies to enable them manage the special needs children and move on with the family activities in the society.

Recommendations

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

- Parents of special needs children should utilize the findings of this study and seek avenues to improve themselves through attending health care seminars and workshops.
- The federal and state ministry of education should finance special needs schools and these schools should educate parents on how to cope with their socio – emotional related challenges.
- Federal government should make available documents on social and emotional coping strategies to be utilized by families of special needs children to the general public.

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Proximate Analysis and Sensory Evaluation of Swallow Produced from Fortified Composite Flour of Millet (*Pennisetum Americanum*), Green Banana (*Musa Acuminate*), Ginger (*Zingier Officianale*) and Selected Vegetables for Elderly

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Abstract

This study analysed the proximate compositions and sensory characteristics of swallow produced from fortified composite flour of millet (Pennisetum americanum), green banana (Musa *acuminate*), moringa (Hyperanthera forssk), ginger (Zingier officianale) and scent leaves (Ocimum gratissimum) for the elderly. The study adopted the experimental design and the Optimal mixture design of Response Surface Methodology (RSM) was used. Flours were produced from green banana, millet, moringa, ginger and scent leaves. The flours were well-blended to produce the swallow. Proximate composition was carried out using Association of Official Analytical Chemists methods to determine the values for moisture, protein, crude fibre, fat and carbohydrate in the composite flour. Sensory evaluations were carried out using the nine-point Hedonic scale. The samples were fed to fifteen judges selected for the study who expressed their opinions on the hedonic scale of from 1 = like extremely to 9 = dislike extremely. Mean and standard deviation were used to analyse the data. The findings revealed the proximate composition of the fortified flour (A) and unfortified flour (B). Percentage for moisture showed 19.51 $^{b}\pm$ 0.160 (A); 20.47 $^{b}\pm$ 0.413 (B); Crude Fibre: 65.56 $^{b}\pm$ 0.000 (A), 21.96 $^{a}\pm$ 0.000 (B); Protein: 3.14 $^{c}\pm$ 0.106 (A); 4.28 $^{a}\pm$ 0.071 (B); Carbohydrate. Among the recommendations is that families should be encouraged to adopt the fortified swallow in order to solve some of the food problems of their aging population.

Keywords: Elderly, Fortified, Ginger, Swallow, Green Banana, Millet, Leafy Vegetables

Introduction

Dietary needs change with aging in several ways. For example, people become less active, their metabolism slows, their energy requirement decreases, all of which mean that they need to eat less or more (Palmore, 2008; Cappelli & Novelli, 2010). Research also shows that as individuals get older, theirabilities to absorb and utilize many nutrients become less efficient. Their nutrient requirements (particularly as a function of body mass) actually increase (Langford and Joshu, 2011). Thus there are positive and negative aspects of aging. Positive aspects include that one gets more time to relax and enjoy life. Negative aspects are many health challenges, including an increase in digestive health disorders (Mert, 2015; Langford & Joshu, 2011).

Among the health challenges that older individuals face is indigestion (Lauritzen & Carlson, 2011). Problems with digestion can occur at any age, however, nearly about 40% of older adults have one or more age-related digestive symptoms each year in developing countries including Brazil, Nigeria and South Africa (Langley-Evans, 2015). Symptoms include difficult or painful bowel movements, infrequent bowel movements, and hard, dry stool (Bloom & Luca, 2016). There are a number of age-related factors that can cause constipation in older adults.Indigestion is a major concern for the older population (Odaman & Ibiezugbe, 2014). Changes in the digestive system occur more frequently at old age. The digestive system moves food through the body by a series of muscle contractions. Just like squeezing a toothpaste tube, these contractions push food along the digestive tract (Chuku, 2004). As the liver and gallbladder age, a number of structural and microscopic changes occur (Lauritzen & Carlson, 2011). The large intestine does not undergo much change with age (Marangoni, Giovannini & Poli, 2013).

For the purpose of this study, swallow is defined as food that is wholly swallowed without chewing. The foods are not swallowed wholly literally, but in portions. Generally a popular type of food in Africa, and Nigeria in particular, swallows are served with either stew, soup or sauces (Gozie, 2017). Swallows and soups are quite accepted in Nigeria. They could be combined with anyone of the many Nigerian soups as accomplices, and served as dinner or lunch in many parts of the country. It is so described because rather than chewing it, one has to *swallow it in bits called 'balls'*. Swallow is food category which is common among older populations (Olayiwola, Oganah, Ojo & Akande, 2013).

Most swallows in Nigeria are products of starchy foods such as cassava and cereals. For example, cassava flakes (*garri*) is a popular swallow that is generally accepted in many parts of the country, while *amala* (yam flour) is well-known in the western part of the country. The consumption of starchy or hard foods is major cause of indigestion in the elderly which is easily overlooked by household members (Babagana, 2018). Many older individuals many not be find satisfaction without consuming swallow after a long time, even if the family decides to limit the intake of swallows.

In Rivers State, Gozie (2017) noted that it is common to find individuals who are 60 years and above confronted with severe indigestion among cases in the hospitals, yet their food preference is swallows, hence, leaving families with the task of finding best swallows for this group of family members. While various intervention efforts focus on clinical methods, the role natural and local foodstuffs and herbs can play in providing mechanisms to manage indigestion is usually undermined (Gossard &York, 2019). Millet, native banana, scent leaves, ginger and moringa possess unique nutrient bases for management of these problems (Bardach & Rowles, 2012). Although earlier studies(Giraud, 2018; Gozie, 2017) have focused on developing new recipes for managing different ailments in different groups of individuals, there is rising need to pay further attention to promotion of digestion amongst the elderly. As a result of this notion, this study focused on the development of fortified flour from local foodstuffs – millet (*Pennisetum americanum*) and green banana (*Musa acuminate*) with herbs – scent leaves (*Ocimum gratissimum*), moringa (*Hyperanthera forssk*) and ginger (*Zingier officianale*) as digestive mechanisms for sustainable health among the older population.

Local food can be defined by the distance between where the food was grown and where it is sold or consumed (Agbaire, 2011). However, the common definition used by the general population considers food "local" if it was grown within 100 miles or within the state (Ilbery, Watts, Simpson and Gilg, 2006). Local food can be defined by the distance between where the food was grown and where it is sold or consumed (Holloway, 2005). It is common knowledge that fiber is beneficial for good digestion. Soluble fiber absorbs water and helps add bulk to your stool. Insoluble fiber acts like a giant toothbrush, helping your digestive tract keep everything moving along (Lauritzen and Carlson, 2011). Soluble fiber is found in oat bran, legumes, nuts and seeds, while vegetables, whole grains and wheat bran are good sources of insoluble fiber. A high-fiber diet has been linked to a reduced risk of digestive conditions, including ulcers, reflux, hemorrhoids, diverticulitis and IBS (Lehmann, 2003). Prebiotics are another type of fiber that feed your healthy gut bacteria. Diets high in this fiber have been shown to reduce the risk of inflammatory bowel conditions (Marangoni, Giovannini & Poli, 2013).

Green Banana (*Musa acuminate*) is a popular fruit worldwide due to its flavor, texture, nutritional value, and convenience of being easy to peel and eat (Long, Martin & Janson-Sand, 2010). It contains a lot of nutrients and minerals that are beneficial to health. Its vitamin C content, which is regarded as a familiar antioxidant, is 15% (Pedersen, 2005). Millets (*Pennisetum americanum*)are a group of highly variable small-seeded grasses, widely grown around the world as cerealcrops or grains for fodder and human food. This millet is known for its umpteen health benefits. Packed with the goodness of iron, protein, fibre, and minerals such as calcium and magnesium; the daily consumption or inclusion of this millet can work wonders. This nutrient dense millet has high fiber content, which can effectively help in losing weight (Agbaire, 2011). In a 100 gram serving, raw millet provides 378 calories and is a rich source (20% or more of the Daily Value (Long, Martin & Janson-Sand, 2010), DV) of protein, dietary fiber, several B vitamins and numerous dietary minerals, especially manganese at 76% DV (Pedersen, 2005). Raw millet is 9% water, 73% carbohydrates, 4% fat and 11% protein (Lehmann, 2003).

Scent leaves (*Ocimum gratissimum*) are essential type of vegetables that support digestion. Scent leaves contain appreciable quantities of fiber (5.16-15.86%), β-carotene (6,666.67-21,833.33RE), ascorbate (18.64-40.09mg), potassium (97.03-325.90mg), phosphorus (99.36-409.75mg) and calcium (234.30-279.71mg) (Lehmann, 2003), calcium, flavonoids, alkaloids and phytosterols, which have health promoting benefits. Scent leaf can help relief bloating and also help digest meals on time. It can also help with bowel evacuation.More so, ginger (*Zingier officianale*) is a popular ingredient in cooking, and especially in Asian and Indian cuisine. It has also been used for thousands of years for medicinal purposes (Idris, Ibrahim, Sufiyan & Oladipo, 2012). Consuming fruits and vegetables of all kinds has long been associated with a reduced risk of many lifestyle-related health conditions. At the same time, ginger also appears to have beneficial effects on the enzymes trypsin and pancreatic lipase, and to increase motility through the digestive tract. This suggests ginger could help preventcolon cancer and constipation (Pedersen, 2005).

Furthermore, Moringa (*Hyperanthera forssk*) offers a powerhouse of nutrients—it is high in fiber, protein, magnesium and potassium (Long, Martin & Janson-Sand, 2010). It contains more calcium than milk, more iron than spinach and more vitamin C than oranges. While the leaves contain most of the nutrition, the pods themselves are an excellent source of vitamin C, boasting 157% of the RDA (Lehmann, 2003).

Purpose of the Study

The main purpose of the study was to carry out proximate analysis and sensory evaluation of swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly. Specifically, the study:

1. analyzed proximate composition ofswallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly
2. determined sensory characteristics of the swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly.

Research Questions

The study was guided by the following research questions:

1. What are proximate compositions of swallow produced from fortified composite flour of millet,native banana, moringa, ginger and scent leaves for the elderly?
2. What are the sensory characteristics of the swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly?

Materials and Methods

Design of the Study**:** The study adopted the experimental design to analyse the proximate composition of the swallow. Optimal mixture design of Response Surface Methodology (RSM) was used for the experimental design.RSM explores the relationships between several explanatory variables and one or more response variables (*Atkinson, Donev & Tobias, 2017*).The purpose of mixture experiments is to explore the optimum blends of mixture components, which will provide desirable response characteristics in finished products.

Materials: The raw materials – Native banana, millet, moringa, ginger and scent leaves were purchased from the popular Mile III market in Port Harcourt, and taken to the Department of Home Economics Laboratory in Ignatius Ajuru University of Education.

Preparation of Materials (Flours): The method of Rita and Sophia (2010) was used. The Native banana, millet was washed in salt water to remove dirt, and microbes. After washing, they were sliced into pieces, sun-dried and thereafter ground into flour. Millet grains were thoroughly picked to remove dirt, insect, dust, excretal, feathers, stones and admixture of other food grains. The cleaned mill were then ground into fine flour.

Ginger, moringa and scent leaves were washed in salt water to remove dirt and sliced into pieces. Subsequently, all the materials were freeze-dried (general purpose freeze dryer, FD-1C-55, Boyikang experimental instrument Co., Ltd, Beijing).

Preparation of the Samples (Composite Swallow Flours)

Recipe: Native banana flour (100g); Millet flour (130g); ginger flour (20g); moring flour (20g) and scent leaves flour (20g).

Procedure for Preparation: Composite flour comprising native banana flour, millet flour, ginger, moringa and scent leaves flours was prepared by mixing the flours thoroughly until they were properly blended and a very smooth texture was obtained. This was done with the use of the Classic Mixing Machine.

Packaging*:* The flour was packagedusing density polyethylene (LDpt), aluminum foil, plastic plates were purchased from the popular Mile III market in Port Harcourt and used to properly package the swallow.

Chemicals/Proximate composition: This was carried out using Association of Official Analytical Chemists (AOAC, 2005) methods in order to determine the percentages of moisture contents, protein, crude fibre, fat and carbohydrate in the composite flour.

Bulk density (BD): Bulk density was estimated by method described by Maninder *et al.*, (2007). The flour samples were gently filled into 10 ml graduated cylinders. The bottom of each cylinder was tapped gently on a laboratory bench several times until diminution of the sample level ceases after filling to the 10 ml mark.

Water absorption capacity (WAC): Water absorption capacity was determined using the procedure of Sathe (2002a). One gram of the sample was mixed with 10 ml distilled water for 5 min on a magnetic stirrer. The mixture was centrifuged at 3500 rpm for 30 min and the volume of the supernatant noted.

Oil absorption capacity (OAC): One gram of sample was weighed, 10 ml of vegetable oil of a known density (0.99 mg/ml) was added to the sample and the mixture stirred on a magnetic stirrer at 1000 rpm for 5 min. The mixture was centrifuged at 3500 rpm for 30 min and the supernatant removed and measured with 10 ml measuring cylinder (Sathe and Salunkhe, 2002).

Gelation properties: Gelation properties of composite flour were evaluated using the method of Sathe, (2002b).

Swelling index: This was determined as the ratio of the swollen volume to the ordinary volume of a unit weight of the flour. The method of Abbey and Ibeh (1988) was used.

Sensory evaluation*:* Sensory evaluation was carried out on the samples. A nine-point Hedonic scale andAnalysis of variance (ANOVA) was used.

Selection of panel of judges**:** The nine lecturers in the Department of Home Economics and six elderly non-academic staff (retired staff who were on contract appointments) of the Ignatius Ajuru University of Education, Port Harcourt were used as the judges for the evaluation.

Instrument for Data collection**:** Instrument for data collection was a9-point hedonic scale. It is standard tool for sensory evaluation with ratings from 1 = like extremely to 9 = dislike extremely.

Method of Data Collection**:** Data for this study was collected using direct contact approach. The samples were fed to the participants, and they were expected to express their opinions on the hedonic scale of from 1 = like extremely to 9 = dislike extremely.

Method of Data Analysis: Mean and standard deviation values were used to analyze the data.

Findings

Research Question 1: What are proximate composition of swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly?

Table 1: Proximate composition of the fortified flour developed

Sample	Moisture	Fat	Ash	Crude Fibre	Protein	Carbohydrate
	(%)	(%)	(%)	(%)	(%)	(%)
A	19.51 $^{b}\pm$ 0.160	3.48 $^{b}\pm$ 0.085	21.26 $^{ab}\pm$ 0.049	65.56 $^{b}\pm$ 0.000	3.14 $^{c}\pm$ 0.106	12.07 $^{a}\pm$ 0.120
B	20.47 $^{b}\pm$ 0.413	23.37$^{b}\pm$ 0.028	2.02 $^{b}\pm$ 0.092	21.96 $^{a}\pm$ 0.000	4.28 $^{a}\pm$ 0.071	17.91 $^{b}\pm$ 0.318

Values are means + standard deviation of three determinations. Values on the same row with different superscripts are significantly different ($p < 0.05$). Key: A = Fortified; B = Unfortified

Table 1 reveals the proximate composition of the fortified flour (A) and unfortified flour (B). Percentage for moisture showed 19.51 $^{b}\pm$ 0.160 (A); 20.47 $^{b}\pm$ 0.413 (B); Fat: 3.48 $^{b}\pm$ 0.085 (A); 23.37 $^{b}\pm$ 0.028 (B); Ash**:** 21.26 $^{ab}\pm$ 0.049 (A); 2.02 $^{b}\pm$ 0.092; Crude Fibre**:** 65.56 $^{b}\pm$ 0.000 (A), 21.96 $^{a}\pm$ 0.000 (B); Protein: 3.14 $^{c}\pm$ 0.106 (A); 4.28 $^{a}\pm$ 0.071 (B); Carbohydrate: The crude fibre and protein contents of the sample were significantly ($p < 0.05$) different, 12.07 $^{a}\pm$ 0.120 (A), 17.91 $^{b}\pm$ 0.318 (B). The proximate content of the fortified and unfortified samples were significantly ($p < 0.05$).

Table 2: Vitamins composition of the fortified flour developed

Samples	Vitamin A	Vitamin B1	Vitamin B2	Vitamin C	Vitamin E
A	$7.71^{c}\pm0.01$	$2.04^{a}\pm0.00$	$4.11^{a}\pm0.14$	$18.94^{d}\pm0.01$	$13.07^{e}\pm0.01$
B	$2.04^{a}\pm0.01$	$0.05^{a}\pm0.01$	$1.16^{a}\pm0.20$	$5.51^{c}\pm0.01$	$4.17^{b}\pm0.01$

Table 2 revealsthe Vitamins composition of the fortified and non-fortified swallows. According to the table, it was revealed that the fortified (A) flour vitamins content ranged between $7.71^{c}\pm0.01$ and $18.94^{d}\pm0.01$, while the unfortified (B) sample ranged between $0.05^{a}\pm0.01$ and $5.51^{c}\pm0.01$.It shows that the sample is richest in Vitamin E while the least was Vitamin B1.

Table 3: Mineral compositions of the fortified flour

Samples	Calcium (100g)	Magnesium (100g)	Iron (100g)
A	$4.25^{b}\pm 0.002$	$4.00\ ^{a}\pm 0.001$	$4.48^{b}\pm 0.003$
B	$1.50^{a}\pm 0.002$	$3.50^{c}\pm 0.001$	$3.36^{c}\pm 0.002$

Values are means ± standard deviation of triplicate samples. Mean values bearing different superscripts in the same column differ significantly ($p < 0.05$).

Table 3 reveals the mineral composition of the fortified swallow sample. According to the results, the fortified (A) flour contained higher minerals than the unfortified (B). The scores ranged from $4.00\ ^{a}\pm 0.001$ (magnesium 100g) to $4.48^{b}\pm 0.003$ (iron 100g), while the non-fortified had between $1.50^{a}\pm 0.002$ to $3.50^{c}\pm 0.001$ respectively.

Research Question 2: What are the sensory characteristics of the swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly?

Table 4: Sensory Evaluation the fortified flour developed

Sample	Colour	Appearance	Texture	Taste	Flavour Overall	Acceptability
A	$7.00\ ^{a}\pm 1.690$	$7.00\ ^{a}\pm 1.558$	$7.73\ ^{a}\pm 1.163$	$8.07\ ^{a}\pm 0.884$	$9.27\ ^{a}\pm 1.280$	$11.40\ ^{a}\pm 1.454$
B	$1.33\ ^{a}\pm 1.543$	$2.27\ ^{a}\pm 1.163$	$7.67\ ^{a}\pm 0.976$	$2.13\ ^{a}\pm 0.743$	$4.00\ ^{a}\pm1.000$	$2.40\ ^{a}\pm 1.242$

Values are means + standard deviation of three determinations. Values on the same row with different superscripts are significantly different ($p \leq 0.05$).

Table 4 reveals the sensory evaluation of the fortified and unfortified samples of the flour. The results showed that the fortified flour (A) had higher level of overall acceptability (11.40 $^{a}\pm$ 1.454) while the unfortified had(2.40 $^{a}\pm$ 1.242). However, the flavour had the highest score at 9.27 $^{a}\pm$ 1.280 (fortified) and 4.00 $^{a}\pm$1.000 (unfortified), while appearance had the lowest score at 7.00 $^{a}\pm$ 1.558 (fortified).

Discussion of the Findings

Table 1 above revealed the proximate composition of the fortified flour (A) and unfortified flour (B). Percentage for moisture showed 19.51 $^{b}\pm$ 0.160 (A); 20.47 $^{b}\pm$ 0.413 (B); Fat: 3.48 $^{b}\pm$ 0.085 (A); 23.37 $^{b}\pm$ 0.028 (B); Ash**:** 21.26 $^{ab}\pm$ 0.049 (A); 2.02 $^{b}\pm$ 0.092; Crude Fibre**:** 65.56 $^{b}\pm$ 0.000 (A), 21.96 $^{a}\pm$ 0.000 (B); Protein: 3.14 $^{c}\pm$ 0.106 (A); 4.28 $^{a}\pm$ 0.071 (B); Carbohydrate: The crude fibre and protein contents of the sample were significantly ($p < 0.05$) different, 12.07 $^{a}\pm$ 0.120 (A), 17.91 $^{b}\pm$ 0.318 (B). The crude fibre content of scent leaves and moringa are generally high hence the high content in the fortified swallow. The consumption of these leaves could aid digestion, absorption of water from the body, bulk stool and prevents constipation (Herro, 2006). The leaves may therefore be very useful in the control of body weight, reduction of serum cholesterol level, hyperten-sion, diabetes, breast cancer, constipation and protection against colon cancer (WHO, 2009).These findings are supported Sathe's (2002a) report which identified moringa, scent leaves and unripe banana as combinations that are ideal for the aging populations.

The lower content of moisture in the fortified swallow shows that the food has a long shelf life; that is it will be better preserved. Gregor (2008) noted that low moisture increases longevity of food products. The crude protein value of the swallow revealed that the formulated samples had higher protein content than the unfortified. This is arguably because of the presence of millet which has good amount of protein (Hero, 2006). Protein is an essential macronutrient for proper development of persons, Sathe (2002a) recommended minimal amounts of protein for the elderly. It plays a vital role such a tissue replacement and deposition of lean body mass. The high ash content of the fortified sampleindicates that it is good source of mineral (Lehmann, 2003). Minerals are important to the proper functioning of many body processes especially in adulthood. They are necessary players in nervous system functioning, easy digestion, other cellular processes, water balance, and structural (e.g. skeletal) systems (Langley-Evans, 2015). These increases in protein, fibre and ash (minerals) therefore, agree with the suggestions made by Lehmann (2003) and Hero (2006) that protein and micronutrient malnutrition in Nigeria could be resolved with cheap locally available raw materials.

Table 2 above revealed that the fortified (A) flour vitamins content ranged between 7.71$^{c}\pm$0.01 and 18.94$^{d}\pm$0.01, while the unfortified (B) sample ranged between 0.05$^{a}\pm$0.01 and 5.51$^{c}\pm$0.01. These findings are significant for healthy living among the elderly. The vitamin compositions of scent leaves, moringa, native banana are essential normal functioning. Since vitamin C (ascorbic acid) promotes the health of teeth and gums, lungs and bronchia, and joints, aids the purification of blood (Gregor, 2008), its (ascorbic acid) presence in the leafy vegetables more especially in moringa leaf with the highest vitamin C content suggests that its consumption and use in herbal medicine can prevent common cold and other diseases like prostate cancer (Herro, 2006).Moringa has almost every important mineral and vitamin for healthy digestion. It is loaded with Vitamin A, C, & D, and it contains several B-vitamins as well (Moore, 2006).In addition, Moringa contains over 40 anti-inflammatory compounds that reduce bloating, gas, and constipation (WHO, 2009).

Table 3 above revealed that the fortified (A) flour contained higher minerals than the unfortified (B). The scores ranged from 4.00 $^{a}\pm$ 0.001 to 4.48$^{b}\pm$ 0.003 (A) and 1.50$^{a}\pm$ 0.002 to 3.50$^{c}\pm$ 0.001 respectively. It contains a lot of nutrients and minerals that are beneficial to health. Its vitamin C content, which is regarded as a familiar antioxidant, is 15% (Pedersen, 2005). Native bananas are usually harvested before being fully mature for domestic consumption. It is found that this *Musa acuminate* contains high fiber, protein and acid insoluble ash when compared to other variety of bananas (Lehmann, 2003).

From the sensory evaluation of the fortified and unfortified samples of the flour, the results showed that the fortified flour (A) had high level of acceptability. The high level of acceptability could be as a result of the lack of additives comprising chemical agents. The preparation was purely natural, and had a natural taste that is appealing. This observation could also be attributed to the result of the smooth blending of the composite flours. Since the fortified samples compared better than the unfortified and were liked slightly and moderately too by the panellists, then feeding aged persons with the food from this study from cheap locally raw materials could cause improvement in their development and digestion challenges (Langley-Evans, 2015).

Conclusion

This study has revealed the proximate compositions and sensory characteristics of swallow produced from fortified composite flour of millet, native banana, moringa, ginger and scent leaves for the elderly with digestion challenges. The high content of crude fiber, vitamins and minerals, as well as low protein and carbohydrates makes the fortified flour ideal for consumption among the elderly for sustainable health. The study also revealed that families can save money from expensive flours which may not be readily affordable. The utilization of local foodstuffs such as millet, native banana, scent leaves, moringa leaves and ginger has proven to be significant to achieving family food objectives.

Recommendations

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

1. The production of the fortified flour from local food crops and spices should be encouraged by stakeholders and government.
2. The elderly and general population should be sensitized on the nutritious significance of the fortified flour.
3. Families should be encouraged to adopt the fortified swallow in order to solve some of the food problems of their aging population.

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Issues on Early Marriage among Female Adolescents in Isi-Uzo Local Government Area, Enugu State

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Abstract

This study investigated issues on early marriage among female adolescents in Isi-Uzo Local Government Area (LGA) of Enugu state. Specially, it identified causes and challenges of female adolescent marriage, as well as ways of preventing the practice in the study area. Questionnaire and focus group discussion guide were utilized for data collection. Population for study was 3, 713 adolescents and their mothers. Data were analyzed using means for quantitative data while qualitativedata were summarised. Major findings include causes of female adolescent marriage. These include, ignorance, poverty and among others, fourteen (14) challenges identified, including, maritual instability, poor health and among others. Ten ways of stopping the practice were identified. These include, provision of free education for youths and orientation program for the youths. Many of the qualitative findings collaborate the quantitative findings. Based on the findings, three recommendations were made for prevention of female adolescent marriage in Isi-uzo LGA of Enugu state.

Key words: Adolescents, Female, Marriage, Causes, Challenges, Prevention.

Introduction

An adolescent is a person between 10-18 years of age. The World Health Organization (WHO 2014) defined an adolescent as a person at a transactional phase of growth and development. It is a period of growth from childhood to adulthood. Neauman (2010) stated that the adolescent goes through physical, mental and developmental challenges. It is a period when children should be given opportunity to discover and develop themselves to the fullest through good quality education and training, among other desirables provisions; In Nigeria however this is not the case as these children are forced into early marriage.

Early marriage is defined by Berlser (2019) as marriage between two individuals in which one or both partners is below 18 years of age. Owoh (2013) observed that marriage before the age of 18 years is a fundamental violation of human right. This is because many adolescents who married early are likely experience psychological trauma, depression, anxiety and mood disorder. UNICEF (20O4), stated that Nigeria has the third highest prevalence rate of female adolescent marriage in the world (UNFPA 2017). In spite of thefact that Child Right Act of (2003); some cultures in Nigeria still allow early or adolescent marriage Ejindu (2019). The report on female adolescent marriage in Nigeria abound (UNFPA 2017) identified the causes of such early marriage in Nigeria to include gender inequalities, cultural, tradition, insecurity and illiteracy. Furthermore, Agaba (2011) stated that poverty, male dominance, economic burden and ignorance about consequences of early marriage on the lives of the victims contributed to the prevalence of early marriage in Nigeria. Presently, child marriage is in the increase and common in the rural areas such as Isi-Uzo Local Government of Enugu state.

In Isi-Uzo Local Government Area, early marriage has ancient cultural, religious and economic ties. Majority of the natives are Christians but there are still those who practice traditional religion. Dennis (2018), stated that average Isi-Uzo man is proud because of their spiritual belief in Odomagana " the ''spirit of pride" . There is a traditional belief among average Isi-Uzo man to preserve his ego and pride in line with cultural beliefs. It is a taboo for example for a young girl to get pregnant before marriage. This explains why majority of the adolescents get betrothed early before 18 years of age. A large number of literature showed that Isi-Uzo people encourages early marriage to prevent their girls from becoming pregnant and thereby bringing shame to the family. There is the belief that girls who marry after secondary education or 18 years of age becomes promiscuous, so parents often see them as economic burden and usually marries them off to avoid economic liability (Ejindu 2019).

Early marriage has dire consequences for the girl child. This according to Akudolu (2013) decreases the girl's development by resulting in early pregnancy and social isolation. It interrupts her education, limit her opportunities for career and vocational advancement and places her at an increased risk of domestic violence. World Health Organization (WHO 2014) stated that 29% of the adolescents that marry early experience health challenges which most times result from premature pregnancy. Sometimes it results in life threatening illnesses such as Vesco- Vaginal Fistula (VVF), anemia, High Blood Pressure, premature birth, malnutrition, Sexually Transmitted Disease (STDs) and Postpartum Disease (PPD) Kammina and Kramer (2011) observed that adolescence early marriage is more in societies that have less value for girls and women. Such patriarchal societies insist that women's place is in the kitchen. Sometimes such cultures force young girls to marry men old enough to be their grandfather.

Female adolescent marriage is aserious hinderance to overall development and welfare of young girls. It therefore evolve ways of preventing it in Isi-uzo LGA. Anthony (2013) opined that introduction of free education in primary and secondary education will ensure that these youths are kept in school without distraction of marriage. Again establishment of skill acquisition centers, youth empowerment programmes, cultural modifications and enlightenments will reduce the number of female adolescents getting married. Literature reviewed showed gaps on issues of adolescent early marriages in different communities and including Isi-uzo LGA; hence the need for this study.

Objectives of the study

The main purpose of the study was to investigate some selected issues about early marriage of female adolescents in Isi-Uzo L. G. A. Specifically, the study determined:

1. .causes of early marriage of a female adolescent in Isi-Uzo L.G.A
2. challenges female adolescents have as a result of early marriage in Isi-Uzo L.G.A
3. ways for preventing early marriage of the female adolescents in Isi-Uzo L.G.A

Research question

The following research questions guided the study

1. What are the causes of early marriage of female adolescents in Isi-Uzo L.G.A?
2. What are the challenges female adolescents have as a result of early marriage?
3. What are the ways for preventing early marriage of the female adolescent.?

Methodology

***Research design*:** Mixed method approach was adopted for the study. Mixed research design is a procedure for collecting, analyzing both quantitative and qualitative data in order to have a good understanding of the topic under study. This method was deemed most appropriate because of the variety of questions used to source information from different participants.

***Area of the study*:** The study was carried out in Isi-Uzo local government area of Enugu state bordering between Ebonyi and Benue states. Its headquarter is Ikem and it is a constituent of Enugu East senatorial zone. Isi-Uzo local government area (LGA) has an area of 877km and a population of 148,415 (2006 census). LGA has only four towns and nine secondary schools located in the rural area and the people are predominantly farmers. This area has cases of early marriage of adolescent girl child and that is why it is chosen for the study (Source: Isi-Uzo L.G.A 2019).

***Population for the Study*:** This was made up of 3,713 female adolescents in the nine secondary schools in Isi-uzo LGA and their mothers. The female adolescents were in their transitional phase of growth and development between 10 to 17 years of age and in secondary schools.

The mothers were between age ranges of 50-60 years old some of them are illiterate while others have a maximum qualification of West African Examination Council (WAEC). These mothers are low income earners who have had the experiences of bearing the financial burden of performing theirrolesas homermakers and training their children up. They were chosen as participants for the focus group discussion because of their experience.

Sample for the study: All the nine secondary schools in Isi-Uzo were used for the study. This was because the schools were not many. Simple random sampling technique was used to select 100 female adolescents from each of the nine secondary schools in the LGA. This gave a sample size of 900 adolescent female.

Participants in FGDs were selected purposeively through the assistance of village women leaders. A total of 177 mothers were purposive selected. There were mothers with female adolescents (daughter) were willing to take part in the study.

Instruments for Data Collection: Questionnaire and focus group discussion (FGD) guide were used for data collection. They were developed based on literature reviewed and objectives of the study. Questionnaire was made of two sections, A and B. Section A sought information from the personal data of the respondents while section B sought information from the research questions. Instrument were validated by three experts in Home Economics in the University. Cronbach Alpha Reliability Coefficient Index was used to determine the reliability of the instrument which was 0.89.

Method of Data Collection: Nine hundred (900) copies of the questionnaire were administered to the adolescents with the help of research assistants. The respondents were guided in filling the questionnaire items correctly before retrieving and returning. There teachers also helped with the distribution and retrieved. This gave a100 percent return.

Nine FGD sessions of 13 discussants each were orgainsed for the study. Each session had a facilities and a recorded. Tap recorder was also used in each session. The FGD guide was used.

Method of Data Analysis: Mean was used to determine to answer the research questions. Decision was taken based on mean rating of 2.50,

The FGD information were summarized.

Findings of the Study

Causes of Early Marriage of Adolescents

Table 1: Mean Responses on Causes of Early Marriage of Adolescent Girl Child

S/N	Causes of early marriage	MeanX	Decision
1	Poverty	3.44	Agree
2	Ignorance on the part of parents	3.20	Agree
3	Lack of protection by parents	3.32	Agree
4	Social and cultural norms of the society	3.60	Agree
5	Lack of information by the adolescents regarding marriage	2.92	Agree
6	Male dominance of the society	2.81	Agree
7	Fear of remaining unmarried	3.54	Agree
8	Desire for money by parents	3.18	Agree
9	Preference for younger bride by men	2.90	Agree
10	Prevention of premarital sex	3.33	Agree
11	To prevent infertility due to age	3.21	Agree
	Grand Mean	3.23	

Table 1 shows that respondents agreed to the item on the causes of early marriage. The mean scores of the respondents were all above the criterion mean of 2.50. Poverty has a mean score of 3.44 ignorance has a mean score of 3.20, lack of protection has a mean score of 3.32, social cultural norms has a mean score of 3.60, lack of information has a mean score of 2.92, sexual transmitted disease has a mean score of 2.81, fear of remaining unmarried has a mean score of 3.54, greed for money by parents has a mean score of 3.18, preference for younger bride mean score of 2.90, prevention of pre-marital sex mean score of 3.33 and infertility due to old age with mean score of 3.21.

The FGD Findings reveal the following:

- Traditional belief/ culture practices
- Domestic violence among husband and wife with varying opinion
- Personal belief that older girls does not marry after school
- Poverty
- Ancestral belief and taboos
- Family honour to keep family name against unwanted pregnancy
- Illiteracy/ ignorant about consequence of early marriage
- Religious values that girls must not defile herself
- Fear of rape by men
- Hunger due to poverty
- Fear of immorality
- Fear of defying customary practices
- Fear of rejection by men due to age

Challenges female adolescents could have as a result of early marriage

Table 2: Mean Responses on the challenges of the Female Adolescent Early Marriage

S/N	Challenges of early marriage	Mean (X)	Decision
1	Poor health challenges	3.11	Agree
2	Broken home/marriage instability	3.42	Agree
3	Complications in pregnancy	2.90	Agree
4	Domestic violence	3.31	Agree
5	Violation of right to education of the adolescent girl	3.33	Agree
6	Violation of right to self defense	3.31	Agree
7	Violation of right to basic amenities	3.12	Agree
8	Risks to infection HIV/AIDS due to ignorant	2.76	Agree
9	Increase to child mortality	3.34	Agree
10	Increase to hunger and poverty due to unemployment	3.36	Agree
11	Lack of self esteem	3.13	Agree
12	Ignorant to self development and protection	3.16	Agree
13	Depression /anxiety due to in capabilities	2.90	Agree
14	Grand Mean	3.17	

Table 2 shows that the respondents agreed to the items on the challenges adolescent girl child have as a result of early marriage. The mean scores of the responses of the respondents were all above 2.50. Poor health challenges has a mean score of 3.11, broken home has a mean score of 3.42, complications has a mean score of 2.90, domestic violence has a mean score of 3.31, Violation of right to education has a mean score of 3.33. Violation of right to self defense has a mean score 3.31, Violation of right to basic amenities has a mean score of 3.12, Risks to infection HIV/AIDS has a mean score 2.16, Increase to child mortality has a mean score 3.34, Increase to hunger and poverty has a mean score of 3.36, Lack of self esteem has a mean score of 3.13, and Ignorant to self development has a mean score of 3.16.

The FGD findings reveal the following challenges of female adolescent marriage in Isi-uzo LGA:

- health increased risks
- high maternal and child mortality rate
- domestic violence from mother from mother in-law
- complication during child birth
- STDs
- maximum work load
- poor life style
- sexual abuse from husband
- isolation from family and friends
- pregnancy –related death and birth complications
- obstructed labour and diabetes
- low birth weight

Ways for Preventing Early Marriage of Female Adolescents

Table 4: Mean Response on Strategies (for possible ways) for Preventing Early Marriage of Female Adolescents

S/N	Strategies for preventing early marriage of adolescent girl child include	Mean X	Decision
1	Free Education of the girl child	3.30	Agree
2	Inculcation of moral instruction in the curriculum.	3.20	Agree
3	Value orientation program for youths	2.72	Agree
4	Sensitization of both parents and girls on the consequences of early marriage	3.32	Agree
5	Access to information	3.11	Agree
6	Provision of free health care	3.13	Agree
7	Promotion of gender equality	3.40	Agree
8	Eradicating poverty	3.33	Agree
9	Provision of Skill acquisition centers	3.31	Agree
10	Sensitization programs on physical and mental abuse	3.12	Agree
11	Economic empowerment	2.88	Agree
12	Implementation of law against early marriage	3.53	Agree
13	Enforcement of reproductive right	3.24	Agree
14	Improving maternal health care	3.32	Agree
15	Inculcating sexual and reproductive health training in schools	3.42	Agree
16	Information, education and communication campaign programs	3.37	Agree
17	Mentoring and peer group training	3.31	Agree
	Grand Mean	**3.24**	

Table 3 shows that all the items are the ways required for curbing early marriage of adolescent girl child as is shown in the mean sores of the responses which were all above 2.50. Free education of the girl child with mean score of 3.30, inculcation of moral instruction in schools with mean score of 3.20, value orientation program with mean score of 2.72, sensitization of both parents and girl child on the consequences of early marriage 3.32, access to information with mean score of3.11, Provision of free health care with mean score of 3.13, Promotion of gender equality with mean score of 3.40, Eradicating poverty with mean score of 3.33, Provision of Skill acquisition centre and Sensitization programs on physical mental abuse with mean scores of 3.12, Implementation of law against early marriage mean score of 3.53, Enforcement of reproductive right with mean score of 3.24, Improving maternal health care with mean score of 3,32, Inculcating sexual and reproductive health training in schools with mean score of 3.42, Information, education and communication (IEC) campaign programs with mean score of 3.37 and Mentoring and peer group training with mean score of 3.31.

The FGD findings reveal the following possible ways of preventing female adolescent marriage inIsi-uzo LGA:

1. Legislations to increase the minimum age of marriage, changing discrimination against girls and women.
2. Changing discriminatory gender norms and creating alternative social, economic and civil opportunities for girls.
3. Addressing the root causes of child marriage such as cultural beliefs, poverty.
4. Improving access to quality primary and secondary education.

Discussion of Findings

The findings in table 1 revealed several factors that cause early marriage of female adolescents in Isi-Uzo local government area. The findings are in agreement with the study carried out by Jody (2020), who identified causes of early marriage to include ignorance on the part of parents and adolescent girls, poverty, illiteracy and the socio-economic status of parents. These findings further agreed with the findings of Walker (2015) who opined that girls marry early to remove economic burden and liability from parents. Parents who are poor would rather prefer that their female daughter marry so that the responsibility of training the girl is transferred to the man. Similarly, the pride price received would be used to solve family problem. Most early marriages occur in the poorer areas mainly rural areas that practice gender inequality. The immature individuals who get married are not always stable enough to cope with difficulties that come with early marriage. In agreement with this is Balser (2019) who noted that in most cases early marriages are not good for both sides of the relationship however the negative influence falls on the young girls who are married off at tender ages. From the very early years, families force their children to do something contradicting their wishes and aim. The young bride is not given a choice and made to get into a relationship without love. Only tradition makes sense while the emotional state of the girl is unstable. This is equally in agreement with Jaya (2019) who stated the obvious by the respondents that socio-economic difficulties led parents suggest that their daughter marry early. The study recognized marriage as an instrument used to regularize religious moral, social and psychological ground. Denis (2018) , agreed to it but however stated that early marriage is worse when it involves an adult man and an adolescent girl since the marriage will certainly deprive the girl of her right and subject her to abuse. In a study carried out by Jody (2020), the respondents opined that some girls who were ready to postpone their marriage till after completion of education were propelled to marry due to cultural family structure. These factors according to Ashley (2007) exerted the hidden factors that persuaded the girls to marry early. The family structures include family norms, roles, communication, the balance of power without the family and the integration aspects.

Table 2 revealed that early marriage of the adolescent has some consequences. UNICEF(2014) identifies such consequences as premature death, emotional trauma, retarded growth, prolonged labour, miscarriage, educational set back, and promiscuity. Early marriage has profound physical, intellectual, psychological and emotional impact. It equally cut off educational opportunities and chances of personal growth. Young girls who are married early begin childbearing soon after marriage leading to increased health risks and complications. This study is in agreement with Tremane (2006), who stated that early marriage of female adolescents could lead to complications during child birth. Despite large global base on consequences of early marriage, Ashley (2007) insist that most girls that get married early lack self empowerment self efficiency and good education that equips the girl with knowledge to have self defense and right. Marriage forces adolescent girls to accept new roles and responsibilities which are sometimes higher than their age could stand. UNIFPA and UNICEF (2017), has a different opinion that girl child early marriage could yield some benefits if the girl is guided into obtaining some skills that will make her to be self reliance.

Table 3 revealed ways of stopping earl marriage of adolescents. In stating ways of curbing early marriage of female adolescent, Neauman(2010)suggested the major ways of curbing early marriage is through education and youth empowerment. Empower girls with information, skills, and support network, provision of economic support and incentives are basic This is agreement with Richard et al (2018) who reported that society without good educational and skill program for the youth is planning to fail. The fact that adolescents early marriage is rampant in some regions in Nigeria, Jody (2020) reported that poor educational value is a major cause of early marriage and can only be discouraged through provision of free education that will endure the test of time because when adolescents are not encouraged to have value for education, they misplace their value and priority. .

The FGD findings collaborate the quantitative findings.

Conclusion

Early marriage is used as a surviving mechanism for families in Isi-Uzo L.G.A. T his is backed up with harmful and cultural practices which is used as a tool to achieve their aim. However, recognizing the evil effect of early marriage suggestions were made for government to barn the act in every community in Nigeria.

Recommendations:

1. Moral instruction should be taught in schools to impact good values unto the adolescents.
2. Parents should be given adequate information on the consequences of early marriage of adolescent girl child and the need to care for the girl child.
3. Government should provide free education for pupils and students to prevent school dropout as a result of poverty.

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Stress Management Practices Adopted by Career Women in Imo State

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Abstract

The major purpose of this study was to investigate the three tiers of stress management practices adopted by career women in Imo State. It also identified the constraints to effective management practices and various ways stress could be enhanced. Three research questions and two hypotheses tested at 0.05 level of significance guided the study. The study adopted a descriptive survey research design. The study was carried out in the three senatorial zones of Imo State of Nigeria. The population for the study comprised of all the career women in the area of study while the sample size was 180 career women drawn from the population. Structured questionnaire and focus group discussion (FGD) were the instrument used for the study. The quantitative data were analyzed using mean and standard deviation while quantitative data were summarized. The test statistics was used for testing the hypotheses at $P<0.05$ level of significance and 178 degree of freedom. The findings revealed that the three tiers of stress management practices among the career women are the primary, secondary and tertiary practices, the constraints to effective stress management practices and the most appropriate ways of enhancing the management practices by career women. The findings also revealed that the three tiers of stress management practices consists of ten items in primary, five items in secondary and six items in tertiary sum up to the total of twenty-one items. Based on the findings, it was recommended that women should adapt the primary, secondary and tertiary procedures for stress management. Individual should help themselves by throwing off challenges immediately it arises among others.

Keywords: Career Women, Stress, Primary, Secondary, Tertiary, Management Practices.

Introduction

Career women are women or individuals who in addition to their domestic chores also work outside the home as employers or wage earners (Anyakoha, 2013). The career women play the roles of home makers and at the same time are gainfully employed outside the home wage or income earners (Agulana, 2004). The author continues to describe them as women who have jobs, and continuous developmental characteristics. They are employed as civil servants in government practatols or establishment, lecturers, teachers in both public and private schools, nurses in hospitals and medical laboratory workers. These set of individuals are married with families. These women are professionally qualified and have specific career path ahead of them. Nevertheless, as women and in most cases mothers, they still have their statutory roles to play as home makers, motherhood, house wives, community. Organize, social, cultural and political leader (Agulanna, 2010). At the work place, her roles may include administrative, supervisory, managerial and leadership among others. Agulanna (2004) identified the characteristics of these women include high level of career responsibilities, economic reward, social prestige, personal investment of time and energy, specialized training and a development sequence of activities.

In every society, career women function to ensure that the family performed exceedingly better and in the course of executing their function, they inadvertently encounter stress. Such stress may result from their desire to meet the financial, moral and social needs of the home such as searching for employment, attending to children, in-laws and friends (Iheme, 2015). Anyakoha (2013) also affirmed that these women are in dire need of a place to keep their children while at work and during meal preparations which contributes to stress and stress related challenges. The author highlighted the challenges to include the basic need like clothing, food, housing, health care, communication, culture and spiritual which add to the load of the women. Both in the home and place of employment. Stress is experienced when one is under pressure and feels unable to cope with the situation. Stress is a state that occurs when an individual perceive events to strain the coping capacities and thereafter, their own wellbeing (Lazarus, 2001). Baron(2000), defines stress as the physical, psychological and behavioral reaction experienced by individuals in situations where they feel that their ability to cope may soon be overwhelmed. It is the physical mental or emotional strain or tension or a condition of feeling experienced when a person perceives that demands a seed to personal and social resources. The individual is able to mobilize. Stress is an individual response to change a circumstance or to a threatening situation. It can be viewed as personal reaction to an external event or demand like writing and exam or to an external state of mind, like worrying about an event.

Eckhart (2014) stress tends to increase with the prospect of not being able to cope with the situation at hand. Some stress is desirable while some are detrimental. This stress is simply a by-product of life. Stress is a condition that imposes demand for adjustment in an individual. It is an impressive term which can be explained in terms of three related concepts, namely: anxiety, conflict, and frustration (Melgosa, 2001).Muller and Beleacto in Ekeoma (2004), highlighted on pleasant emotional experience in the home, officers, associated with the element of fear, death, anxiety, anger, annoyance, sadness, depression as part of stressors to career winning. The author states that stressors are any physical or psychological event or condition that produces stress. Ogbuegbulam (2010), describes stressors as the agent which actually creates stress to the individuals. Stressors are also live events that are also challenging as to potentially be associated with the occurrence of a physiological symptom (Yahads and wrong, 2010). Stressors in the families of career women involves conflict in the family values, conflict misery from house helps, financial management of the home, issues arising from school runs, health care, time management, extended families and communications. Stress has become one of the most serious health issues and a worldwide epidemic (Herbert, 2018).

According to Bouchez (2017) stress accounts for 30% of all infertility problems among women. She maintained that stress can cause the injected sperms in the fallopian tubes and uterns not to function effectively. The stress hormone control has been found to cause both the accumulation of abdominal fat and enlargement of fat cells causing "diseased fat" (Holman, 2018). Abam (2018) maintained that in chronic stress, dominant hormones are released into the brain, these hormones are released into the brain. These hormones are intended for short-term emergencies and in the event where they exist for extended periods, they impair and kill the brain cells. Thus Tamar (2019) maintained that this can be reduced by laughing which strengthen the immune system through the release of positive hormones.

Stress can be positive (Eustress- good or constructively and negative – distress (bad or destructive). Eustress (good or constructive is a stress that the body can chemically dissipate without physiological damage and is helpful in moving an individual towards achievement. On the other hand negative (bad) destructive stress is distress and it is what people aim to manage through the use of management. This arises when one's coping skills are inadequate for meeting particular challenges in life (Ahola, 2018). These stressors can be reduced through the practice of stress management.

Therefore, stress management is the process of learning to appreciate how the body resists to pressure and how to develop skills which enhance the bodies adjustment (Klinic, 2010). Stress management are the appropriate coping actions behaviours or attitude which humans exhibit when faced with certain physiological, psychological and social demands that task their adaptive resources (Ogbuegbulam, 2010. Stress management is beneficial to reduce blood pressure, heart disease, digestive troubles, and many more physical alignments. It also helps improve sleep, mental health, cognition and libido (Eckhart, 2014). Misamari, (2002) narrowed management into three major groups for career women such as primary, secondary and tertiary management practice.

Primary management include end optimism, time management, leisure time activities or change the source of stress. Time management as one of the principles of practices is that which enables females to minimize the stress of work overload and to prioritize work and leisure activities. Leisure activities include cleaning the house, hiring of wears, watching films and listening to news, etc.

Secondary management practices, involves such as physical exercises, relaxation, training and taking proper diet. Relaxation according to Muker (1996) and Marisamari (2002) is made up of four components namely; a quiet environment, a mental device such as words and sound, a passive attitude by a non-critically pushing aside destructive thoughts and a comfortable position. This could control the emotional consequences of stress.

Tertiary practices include, communication barriers and seeking professional help (Wilson and Qukek in Ekeoma, 2004). In all Marisamari (2002) opined changing the mind set or perception of thoughts about stressors as a therapy to stress. Melgosa and Girossof (2001) maintained that women could seek professional advice or change their jobs where their career are very stressful. Other practices include controlling the environment which involves avoiding noising surrounding, living in a space reasonably large and clean and giving enough time for children. He also concluded by saying positive thinking and sharing talent with others goes a long way in reducing stress. It is against this background that this study embarks upon to suggest the three tiers of stress management practices adopted by career women in Imo state.

Objectives of the Study

The specific purpose was to:

1. Identify the primary stress management practices that could be adopted by career women in Imo State.
2. Identify the secondary stress management practices that could be adopted by career women in Imo State.
3. Identify the tertiary stress management practices that could be adopted by career women in Imo State.
4. Identify the constraints to effective stress management of career women in Imo State, Nigeria.
5. Identify ways of enhancing the stress management of career women in Imo state Nigeria

Research Questions

1. What are the primary stress management practices adopted by career women in Imo State?
2. What are they secondary stress management practices adopted by career women in Imo State?
3. What are the tertiary stress management practices adopted by career women in Imo State?
4. Identify the constraint to effective stress management among career women in Imo State?
5. Identify ways of enhancing the stress management of career women in Imo State, Nigeria?

Hypothesis

The following null hypotheses were tested at 0.05 level of significance.

$H0_1$: There is no significant difference in the mean ratings of women in the rural and urban areas of Imo State on the primary, secondary and tertiary management practices of stress.

$H0_2$: There is no significant difference in the mean rating of women in the urban/rural areas on constraints in management of stress by career women in Imo State.

$H0_3$: There is no significant difference in the mean rating of women in the rural/urban areas on the ways of enhancing stress management by career women in Imo State.

Methodology

Research Designs**:** The study adopted a descriptive survey research design. Survey research typically employ interview and questionnaire to determine the opinions, perceptions and attitudes of people about issues. This study adopted this design since it sought the opinion of career women of stress management.

Area of the Study**:** The study was carried out in Imo State in South-East, Nigeria. The area covered women who plays the role of a homemaker and employees of other works outside as salary earners in places like colleges of education, universities, primary and secondary schools, hospitals, and entrepreneurs.

Population for the Study**:** The population comprised of 2983 respondents that comprised the following groups, civil servants, doctors, nurses, lecturers, medical laboratories, teachers and entrepreneurs. The population of the career women based on the area of study comprised of 60 women from each senatorial zone namely; Owerri, Okigwe and Orlu, making a total of 180. The population also included focused group decision existing in the same state.

Instrument for Data Collection**:** Questionnaire was used for data collection. The questionnaire consisted of two sections; section i and section ii. Section i provided demographic information of the respondent while section ii was made up of 5 clusters according to the research questions. Responses to the items in the questionnaire, were based on a 4 point likert type rating scale, ranging from strongly agree (SA) (4 points), agree (A) (3 points), disagree (D) (2 points) and strongly disagree (SD) (1 point). The focus group decision guide used for qualitative data for the study, centered on 5 points that bordered on stress management practiced of career women.

The instrument was duly validated by three experts (2 from the department of vocational and technical education, university of Nigeria, Nsukka and one from the health council unit of the department of natural science and a medical doctor in Umuzuruike hospital, Owerri, Imo state). The liability of the instrument was ascertained using Cronbach Alpha. A reliability coefficient of 0.90 was established using signified very high reliability of the instrument.

Data Collection Method**:** Direct method was applied by the researcher and one research assistant in distributing and collecting the questionnaire from the respondent. The research assistant was briefed on the modalities for distributing and collecting the questionnaire from the respondent. 180 copies was distributed and returned. The FGD was organized by the researcher with the assistance of one moderator with questions that bordered on issues relating to stress.

***Data Analysis Techniques*:** Descriptive statistics (mean and standard deviation) were used for data analysis. A mean of 2.50 was used as the bench mark for decision making for each item, since a 4-point rating scale was used for the study. Thus any item with a mean of 2.50 and above was considered as accepted by the respondents, while any item below 2.50 was considered as unaccepted by the respondents

T-test was used to test the hypothesis of 0.05 level of significance. The data from FGD was summarized. All computations were carried out using the statistical package for social science (SPSS).

Results

Research Question 1

What are the primary, secondary and tertiary stress management adopted by career women in Imo State?

Table 1: Stress Management Practices Adopted by Career Women in Imo State

S/N	Practices	₦					
	Primary management procedures for stress management	**Urban X_u**	**Career SD_u**	**Women R_u**	**Rural X_R**	**Career SD_R**	**Women R_R**
1	Deal positively with the source of stress	3.60	0.80	A	2.60	0.72	Agreed
2	Regular relaxation and exercise	3.40	0.80	A	2.80	0.75	Agreed
3	Engage the same time in closely related activities	3.40	0.80	A	2.67	0.75	Agreed
4	Avoid noisy environments	3.60	0.49	A	2.83	0.64	Agreed
5	Live in a clean environment	3.80	0.40	A	3.07	0.68	Agreed
6	Have enough rest	3.40	0.80	A	2.97	0.66	Agreed
7	Avoid worrying	3.40	0.80	A	3.07	0.58	Agreed
8	Being real in all situation	3.60	0.80	A	3.17	0.46	Agreed
9	Being contented with ones possessions	3.40	0.80	A	3.07	0.58	Agreed
10	Managing family resources properly	3.80	0.40	A	3.10	0.65	Agreed
	Secondary stress management practices						Agreed
11	Regular relaxation and exercise	3.60	0.80	A	3.20	0.60	Agreed
12	Eat adequate or proper diet	3.60	0.49	A	3.23	0.72	Agreed
13	Taking work outside the environment	3.20	0.40	A	3.03	0.48	Agreed
14	Mixing up with pair, friends and colleagues	3.60	0.49	A	3.03	0.61	Agreed
	Tertiary stress management practices						Agreed

15	Socializing yourself with others	3.40	0.49	A	3.03	0.76	Agreed
16	Sharing your wealth and talent with others	3.60	0.49	A	3.03	0.71	Agreed
17	Share joys and sorrows with family members	3.40	0.49	A	3.07	0.58	Agreed
18	Adapt a problem solving attitude in life	3.40	0.49	A	3.17	0.64	Agreed
19	Seek professional guidance for serious problems	3.80	0.40	A	3.13	0.72	Agreed
20	Have a positive happy attitude towards life	3.80	0.40	A	3.07	0.63	Agreed
	Grand mean	**3.47**			**3.02**		Agreed

NB: A= agree; D= disagree; $X_{u=}$ mean rating of urban career women; SD_U= standard deviation score of urban career women; R_u= remark for urban career women; X_R= mean rating of rural career women; SD_R= standard deviation score of urban career women; R_R= remark for rural career women

Table 1 above shows that both career women (urban and rural) mean ratings of primary, secondary and tertiary stress management practices utilized by them. For item 1-20 were within 2.5-3.47 mean limit set for agree. This means that primary stress management practices utilized by career women are deal positively with the source of stress, regular relaxation and exercise engage the same time in closely related activities avoid noisy environment, live in a clean environment, have enough rest, avoid worrying; being real in all situation, being contented with ones possessions, and managing family resources properly while the secondary stress management practices utilized by career women are regular relaxation and exercise, eat adequate or proper diet, taking work outside the environment, and mixing up with peer, friends and colleagues.

Finally, the tertiary stress management practices utilized by career women in the state are socializing yourself with others, share your wealth and talents with others, share joys and solving attitude in life, seek professional guidance for serious problems, and have a positive happy attitude towards life (0.40). This implies that the above mentioned points are effective in the management of stress by career women. This is in line with the findings of Denga and Ekpo in Ekeoma (2004) who advised that women should crack jokes from time to time to avoid antidote for sadism and negativism.

Research Question Two: What are the constraints to effective or proper stress management practices to career women in Imo State?

Table 2: Constraints to Effective or proper Stress Management Practices to Career Women in Imo State

Constraints for Effective Stress Urban Career Women Rural Career women Management by Career Women

S/N		Xu	SDu	Ru	X_R	sd_r	R
1	Uncompromising attitude of family members	3.60	0.49	A	3.00	0.64	Agreed
2	Poverty and economics crises in the family	3.80	0.40	A	3.00	0.73	Agreed
3	Time factor (insufficient time)	3.60	0.49	A	2.87	0.81	Agreed
4	Other crowded schedules	3.60	0.49	A	2.87	0.77	Agreed
5	Socio-economic status of the family	3.60	0.49	A	2.67	0.79	Agreed
6	Use of crude method or equipment for cooking food	3.20	0.75	A	2.70	0.83	Agreed
7	Dual career women's	3.20	0.40	A	2.50	0.62	Agreed
8	Boredom after the day's work	3.40	0.49	A	2.53	0.77	Agreed
9	Attitudes of the boss and spouse	3.20	0.40	A	2.60	0.76	Agreed
10	Religious factor	3.00	0.64	A	2.63	0.77	Agreed
11	Cultural heritage of the community	3.00	0.64	A	2.60	0.80	Agreed
12	Lack of co-operation from the family	3.80	0.40	A	2.77	0.85	Agreed
	Grand Mean	**3.36**			**2.73**		

NB: A = Agree; D= Disagree; Xu= Mean rating of urban career women; SDu= Standard Deviation score of urban career women; Ru= Remark for urban career women; X_R= Mean rating of rural career women; SD_R= Standard Deviation score of urban career women; R_r= Remark for rural career women

Table 2 presented the constraints faced by the career women to effective stress management practices. It revealed that lack of cooperation from the family members (0.85) was the most severe constraint, followed by use of crude method or equipment for cooking (0.83), time factor (0.81). other constraints to the proper stress management include cultural heritage of the community (0.80), Religions factor (0.80), socio-economic factor (0.79), crowded schedules (0.77), attitudes of the boss and spouse (0.76), poverty and economics crises in the family (0.73), uncompromising attitude of family members (0.64) and women's resistance to change (0.62). This implies that lack of co-operation and use of crude method or equipment for cooking and others were the major constraints to the effective management of stress by career women in Imo State. Thus all fall within the mean limit set for agreed (2.5-3.49).

Research Question 3: In what ways can stress management practices of the career women be enhanced?

Table 3: Ways of enhancing stress management practices of the career women in Imo State

S/N	Ways of Enhancing Stress Management Career Women	Urban Career Women			Rural Career Women		
		Xu	**SDu**	**Ru**	**X_R**	**SD_R**	**R_R**
1.	Thinking positively	3.80	0.40	A	2.83	0.64	Agreed
2.	Change your emotional response	3.60	0.49	A	2.90	0.70	Agreed
3.	Embrace spiritually	3.80	0.49	A	2.93	0.63	Agreed
4	Protect your time	3.60	0.49	A	3.00	0.58	Agreed
5.	Learn how to take time for yourself without feeling guilty	3.60	0.49	A	2.93	0.51	Agreed
6.	Restore work life balance	3.40	0.49	A	2.93	0.51	Agreed
7.	Try meditation	3.40	0.49	A	3.08	0.78	Agreed
8.	Maintain a strong social network	3.40	0.49	A	2.97	0.61	Agreed
9	Consult experts in difficult situation	3.80	0.40	A	2.90	0.75	Agreed
	Grand Mean	**3.52**			**2.94**		

NB: A = Agree; D= Disagree; Xu= Mean rating of urban career women; SDu= Standard Deviation score of urban career women; Ru= Remark for urban career women; **X_R=** Mean rating of rural career women; SD_R= i Standard Deviation score of urban career women; R_r= Remark for rural career women

Results of analysis as shown on Table 3 reveals the various ways stress management practices can be enhanced for the benefit of the career women. It revealed that trying mediation (0.78) was the most powerful skill for enhancing stress management, followed by consulting experts in difficult situation (0.75), change your emotional response (0.70), thinking positively (0.61), embrace spiritually (0.63), maintaining a strong social network (0.61), protecting the time and taking time for oneself without feeling guilty (0.58) and restore work life balance (0.51). This implies that all the above mentioned can assist in improving stress among the career women as they are within the mean limit of 2.5 and above which is the acceptable mean rate.

Hypothesis 1

There is no significant difference in the mean ratings of women in the rural and urban areas of Imo State on the primary, secondary and tertiary stress management practices utilized by career women in Imo State.

The data for testing hypothesis three are presented in Table 4.

Table 4: t-test of Independent showing Mean and Standard Deviation Ratings of Women in the Rural and Urban Areas of Imo state on the Primary, Secondary and Tertiary Stress Management Practices utilized by Career Women in Imo State.

	Grouping	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)	Decision
Overall	Urban	90	3.27	0.50				
	Rural	90	3.02	0.28	7.48	178	0.00	S

NB: S = Significant; t = t-test calculated; df = Degree of Freedom; and N= Number of Respondents

Table 4 indicates that the calculated value of t (7.48) has a probability "value (0.00) which is less than 0.05 level of significance. Hence, the null hypothesis was rejected and the alternative upheld. Hence, significant difference exist in the mean ratings of women in the rural and urban areas of Imo state on the primary, secondary and tertiary stress management practices utilized by career women in Imo State in favor of career women in the urban with high mean score of 3.47.

Hypothesis 2

There is no significant difference in the mean ratings of women in the rural and urban areas of Imo State on the constraints to effective or proper stress management practices to career women in Imo State.

The data for testing hypothesis two are presented in Table 5

Table 5: t-test of Independent showing Mean and Standard Deviation Ratings of Women in the Rural and Urban Areas of Imo state on the Constraints to effective or proper Stress Management Practices to Career Women in Imo State

	Grouping	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)	Decision
Overall	Urban	90	3.36	0.38				
	Rural	90	2.73	0.54	8.99	178	0.00	S

NB: S = Significant; t = t-test calculated; df = Degree of Freedom; and N= Number of Respondents

Table 5 above indicates that the calculated value of t (8.99) has a probability value (0.00) which is less than 0.05 level of significance. Hence, the null hypothesis was rejected and the alternative upheld, hence, significant difference exist in the mean ratings of women in the rural and urban areas of Imo state on the constraints to effective or proper stress management practices to career women in Imo State in favor of career women in the urban with high mean score of 3.36.

Hypothesis 3

There is no significant difference in the mean ratings of women in the rural and urban areas of imp state on the ways of stress management practices of the career women can be enhanced.

The data for testing hypothesis three are presented in Table 6.

Table 6: t-test of Independent showing Mean and Standard Deviation Ratings of Women in the Rural and Urban Areas of Imo state on ways stress management practices of the career women be enhanced

	Grouping	N	Mean	Std. Deviation	T	df	Sig. (2-tailed)	Decision
Overall	Urban	90	3.52	0.42				
	Rural	90	2.94	0.41	9.33	178	0.00	S

NB: S = Significant; t = t-test calculated; df = Degree of Freedom; and N= Number of Respondents

Table 6 above indicates that the calculated value of t (9.33) has a probability value (0.00) which is less than 0.05 level of significance. Hence, the null hypothesis was rejected and the alternative upheld. Hence, significant difference exist in the mean ratings of women in the rural and urban areas of Imo state on the ways stress management practices of the career women can be enhanced in favor of career women in the urban with high mean score of 3.52.

Discussion

findings equally show that primary stress management practices utilized by career women include regular relaxation and exercise, engage the same time in closely related activities, avoid noisy environment and others, while the secondary stress management practices utilized by career women are eating adequate or proper diet, taking work outside the environment and mixing up with peer, friends and colleagues and tertiary stress management practices utilized by career women in the state are socializing oneself with others; sharing ones wealth and talents with others. The findings were in line with the view of Dengs and Ekpo in Ekeoma (2004) who advised that women should crack jokes from time to time to avoid antidote for sadism and negativism (Habibi, 2015). Also, Ngoka (2000), concluded that laughter is a stress management practice and refers to it as approaches to cognitive and psychological activities of handling stress. These findings were in agreement with the observation of Stephens in Agulanna (2009) who said that social support provided by other people in time of need goes a long way in stress management. The findings were also in consonance with the submission of Taylor and Aspinwa in (Agulanna, 2007) who posted that social support can be seen in three angles namely emotional, tangible and information.

Similarly, findings revealed also that the constraints to effective or proper stress management practices to career women are uncompromising attitude of family members, poverty and economic crises in the family, time factor (insufficient time) among others (Khalatbai, 2011). Also, findings showed that the ways stress management practices of the career women can be enhanced are by thinking positively; changing ones' emotional response, embracing spirituality and others (Rosemary, 2014).

Finally, the supportive hypotheses revealed that significant difference exist in the mean ratings of urban and rural career women in the three tiers procedure for stress management (Alari, 2012). The implication of this finding is that the procedure for managing stress is in favour of urban women. Also, there was a significant difference in the ways of enhancing stress among career women (Habibi, 2015). The implication is that the ways for enhancing stress significantly influence the urban women. These findings were in conformity with the assertion of Soegal (2011) who said that women should try to be flexible, discard negative beliefs and learn to talk in a positive ways. Also, the findings of this study agreed with the findings of Ugoji (2009) who found that mixing leisure with work helps in management of stress among individuals in corporate organization (career women). This in turn will help promote career-women health and increase productivity and healthy families.

Thus, it was observed that there was a significant difference in the procedures for stress management practices among the urban and rural career women. The implication of this findings is that the procedures for managing stress in favour of the urban women. Also, there was a significant difference in the ways of enhancing stress among career women. The implication is that the ways of enhancing stress significantly influence the urban women.

Conclusion

The three tiers of stress management practices (primary, secondary, tertiary practices) adopted by career women ensure that every career woman is able to live a fulfilled life and work to the fullest potential. Hence the management of stress with regard to the three practices should be encouraged and accepted by all and sundry in the society to enable the career women actualize a healthy living.

Recommendations

1. Career women should adopt primary, secondary and tertiary procedure for stress management shown in the study.
2. Welfare officers should adopt the findings of the study on procedures and ways of managing stress among career women for use during counselling on health related issues among career women
3. Stress related issues and its manifestation among career women should be handled as location dependent factors by welfare officers.

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Nutrient and Phytochemical Composition of Selected Fresh and Dried Leafy Vegetables in Nsukka Local Government Area of Enugu State

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Abstract

The study investigated the nutrient and phytochemical composition of selected fresh and dried leaves of *Bryophyllum pinnatum* (odaopue), *Corchorus olitorius* (ahihiara) and *Amaranthus hybridus* (eriemionu). Specifically, it determined; proximate (crude protein, fat, ash, fiber, moisture, carbohydrate); vitamins (vitamin C, pro-vitamin A, folate), minerals (calcium, iron, zinc, iodine) and phytochemical (flavonoids, saponins, phytate) compositions of the vegetables as consumed. It was an experimental study. The vegetables were harvested and carefully prepared for chemical analysis. Association of Official Analytical Chemists (2005) and other analytical methods were used to evaluate the chemical profile of the vegetables. Data were analysed using descriptive statistics. Results show that the shade dried samples were nutrient dense compared to the fresh samples except vitamin C. Phytochemicals tested show that flavoniods ranged from (3.19-5.75mg/100g), saponin (632.83-642.93mg/100g) and phytate (0.04-1.26mg/100g). Shade drying was observed to be a good processing method as it increased the nutrient and phytochemical contents of the vegetables. It should be adopted because more nutrients were conserved. It is therefore an effective way to help maintain healthy diet and to combat micronutrient and other dietary deficiencies.

Keywords: Nutrient, Phytochemical, Composition, Vegetable, Fresh, Dried

Introduction

Nutrients are substances found in food which when ingested, digested and absorbed are metabolized to perform various physiological functions in the body. Green leafy vegetables play important roles in human nutrition. They are made up of cellulose, hemi-cellulose and pectin substances that give them their texture and firmness (Mohammed and Sharif, 2011). They contribute substantially to minerals such as phosphorus, magnesium, potassium, zinc, calcium, iron; vitamins, fibers, proteins and other nutrients which are usually in short supply in daily diets (Ene-Obong, 2011). Vitamin K content of dark green leafy vegetables protects bones from osteoporosis and prevents inflammatory diseases

(Edmond, 2008). Leafy vegetables are also important sources of health promoting phytochemicals.

Phytochemicals are plant chemicals that occur naturally in fruits and vegetables including saponin, flavonoids, phytates and carotenoids. They have antioxidant, antibiotic, anticancer and other nutraceutical properties (Yang & Keding 2009) which help in disease prevention and reduction of risk of age related chronic diseases such as coronary heart diseases, diabetes, high blood pressure and certain types of cancer (Mohammed and Sharif, 2011; Jamie & Yacoub, 2014).

In Nigeria there are many lesser known vegetables of promising nutritive values. These vegetables have remained underutilized due to poor awareness and popularization of technologies for utilization. They include but not all, *Amaranthus hybridus, Bryophyllum pinnatum and Corchorus olitorius.*

Amaranthus hybridus is a herbaceous, erect, annual plant belonging to the family, *Amaranthaceae.* It is a monoecious, multipurpose crop (Grobelnik-Mlakar, 2009). Their nutritious leaves have a mild flavour; the seeds are usually ground into flour and used as porridge and in bread making. The leaves are used in the treatment of intestinal bleeding, diarrhoea and excessive menstruation (Foster and Druke, 2003). It is also a rich source of pro-vitamins A, C, B and folate (Soriano-Garrcia, Arias-Olguin and Montes, 2018); Arasaretnam, Kiruthika, & Mahendran (2018)

Another underutilized locally available leafy vegetable is *Bryophyllum pinnatum* also called Odaopue in Igbo language. It is a medicinal plant used to cure diseases and heal injuries. It belongs to the family Grassulacaceae (Agoha, 1974). It is known as air plant, never die, and miracle leaf. In South Eastern Nigeria, it is used to facilitate the dropping of the placenta of a newly born baby (Dalziel. 1995). It is also considered sedative, wound healing, diuretic, anti-inflammatory and cough suppressant. The leaf juice is also used to treat boils and skin ulcers.

Similarly, *Corchorus olitorius* 'Ahihara' in Igbo, of the family *Tiliaceae,* is another leafy vegetable with a mucilaginous (somewhat "slimy") texture, similar to okra, when cooked. The seeds used as flavoring and herbal tea are made from the dried leaves. Studies have shown that the leaves are rich in iron, calcium and vitamin c (Stewart, 2011). According to Zakaria et al (2006) the leaf is used in folklore medicine for the treatment of gonorrhea, pains, fever, tumor and cystisis. *Corchorus olitorius* is also used for the treatment and prevention of anaemia. The leaves have been reported to be rich in vitamins, minerals, phenolic and antioxidant properties (Choudhary *et al*., 2013).

The vegetables are subjected to certain postharvest treatments such as drying, blanching, or cooking to remove potential toxic components, improve organoleptic properties and for preservation purposes. Some of these processing techniques alter nutrient content of vegetables (Frances, Thomas, & Gabriel 2013), rendering them consumable or toxic. There is need to explore the numerous locally available vegetables for their beneficial nutrient properties especially the underutilized ones going into extinction.

It has been observed that the diets of many Nigerians in relation to vitamins, minerals, etc are inadequate. Iron deficiency is the most prevalent, and iron deficiency anaemia is estimated to affect more than one billion people worldwide (Trowbridge & Martorell 2002). Anaemia, weak bones, tooth decay and decreased fertility are iron deficiency related diseases (Groff, 1995). Approximately, three million (3,000 000) deaths a year have been attributed to nutrient deficiency disorders and vegetable intake, a risk factor almost as deadly as tobacco (World Health Organization, WHO, 2003). The study on the nutrient and phytochemical compositions of these lesser known and underutilized locally available vegetables is therefore imperative.

Purpose of the study

The major purpose of the study was to evaluate the nutrient and phytochemical compositions of selected fresh and dried leafy vegetables in Nsukka Local Government Area of Enugu State.

Specifically, the study determined:

1. proximate composition (crude protein, fat, ash, fiber, moisture and carbohydrate) of fresh and shade-dried leaves of *Amaranthus hybridus* (*eriemionu*), *Bryophyllum pinnatum* (*odaopue*) and *Corchorus olitorius* (*ahihara*).
2. vitamin composition (vitamin C, pro-vitamin A, folate) of the fresh and shade dried leafy vegetable samples.
3. mineral composition (calcium, iron, zinc, iodine) of the fresh and shade dried leafy vegetable samples.
4. phytochemicals (flavonoids, saponins, phytate) present in the fresh and shade dried leafy vegetable samples.

Materials and Methods

***Design of the Study*:** It is an experimental study done in three stages. Stage 1: Procurement and processing of the vegetables. Two processing methods, fresh and shade drying were adopted to determine their effects on the nutrient compositions of the vegetables. Stage two: Chemical analysis of the nutrient and phytochemical compositions of the vegetables. Stage III: Statistical analysis and result presentations. The experimental procedures were carried out at the Food and Analytical Laboratory of the Department of Home Science and Management, University of Nigeria, Nsukka.

***Materials*:** Fresh leaves of *Corchorius olitorius* (*Ahihara*), *Amaranthus hybridus* (*Eriamionu*) and *Bryophyllum pinnatum* (*Odaopuo*) were harvested from a garden at Hill Top Plaza, Ugwuechara, in Nsukka Local Government Area, Enugu State and authenticated at the Department of Botany, University of Nigeria, Nsukka.

Preparation of Samples: *Corchorus olitorius* (*Ahihara*), leaves were carefully selected and de stemmed. Two kilograms of the leaf sample were weighed out and divided into 2 equal parts of 1kg each. The first part was washed, drained, and shade-dried on the laboratory bench for 10days until brittle, ground into fine powder using hammer mill and labeled shade dried *Corchorius* (SDC). The second part was washed, drained, cut, and blended to a uniform pulp using a laboratory mortar and labeled fresh *Corchorius* (FC). The same measurement and treatment was used for *Bryophyllum pinnatum* (*Odaopue*) and *Amaranthus hybridus* (*Eriamionu*) to get SDB, FB, SDA, and FA respectively.

Chemical Analyses

Crude Protein: Total Nitrogen (N) was estimated using the micro Kjeldahl method as described by AOAC (2005). One millilitre of each sample was digested with concentrated sulphuric acid, distilled and titrated. The crude protein was obtained by multiplying N by the conversion factor of 6.25 (^{c}P =TN x 6.25).

Fat: The AOAC method (2005) was used to determine the fat content of the samples. Two millilitres of each sample was extracted with acetone (BP 40^{0}C – 60^{0}C) using "Sohxlet extractor" for 1 hour. The solvent free samples were dried in an oven, cooled in a dissector and reweighed prior to calculation of crude fat content.

Ash: Ash was determined using AOAC (2005) method. Two millilitres of each sample was weighed into already weighed crucibles, labelled and put into the furnace, heated gradually until the temperature was maintained or 550 - 600^{0}C was reached for 6 hours. After ashing, the furnace was switched off; temperature was allowed to drop prior to removing the crucibles. Crucibles was put in desiccators and cooled, samples were reweighed and percentage ash calculated.

Fiber: The crude fiber was determined using acid and alkaline 600ml round bottom flask. 100ml of 1.25% sulphuric acid (H2SO4) was added into the flask and made to boil over a heater for about 30minutes, filtered using a Buckner funnel and filter flask. The residue was put back into flask and diluted with 100ml of 1.25% NaOH and heated for another 30minutes and filtered using suction method. The residue was rinsed with 1% Hcl, and added to neutralize the NaOH present, washed with methylated spirit to remove any trace of acid. The residue was put into a weighed crucible, dried in an oven set at 100°C for 30minutes, cooled in a dessicator and reweighed. The residue was put into a muffled furnance set at 550°C for 2hours for complete ashing. The ash was weighed and the percentage fiber in the sample calculated.

Moisture: This was determined by hot–air oven method (Pearson, 2005). The Petri dishes were washed, dried in hot air oven at 100^{0}C for about 25 minutes, and cooled in desiccators for 10minutes. The dishes were reweighed. Two millilitres of sample was added to each dish in hot air oven, dried for 2 hours, removed, cooled in desiccators, reweighed and dried until a constant weight was obtained. The percentage moisture was calculated.

Carbohydrate: This was determined by Difference that is, subtracting the sum of the % of protein, fat, moisture, and ash from 100%. Carbohydrate percentage was calculated.

Vitamin Analysis

Ascorbic Acid: The AOAC (2005) method was used. Fifty millilitres of each sample was added to different 100ml volumetric flasks containing 25ml of 20% metaphosphoric acid as stabilizing agent. This was made up to mark with diluted water. Ten millilitres of the solution was put into a conical flask, and 2.5ml of acetone was added and titrated with the indophenols solution until a faint pink color persists for 15 seconds. The ascorbic acid content was calculated as mg/100ml sample.

Beta-Carotene: This was determined according to Pearson (2005) method. Two millilitres of each sample was put into a film container and 20ml of petroleum ether was added. The solution was filtered through whatman filter paper No 42. The filtrate was evaporated to dryness, later dissolved with 0.2mls of chloroform acetic anhydride, 2mls of TCA chloroform was added and read at 620nm using a spectrophotometer.

Folic Acid: The method as described by AOAC (2006 was used). An amount of test protein was measured in flask and added volume H20 equal in ml to ≥10 times dry weight test portion in gram. The resulting solution was ≤ 1.0mg folic acid/ meal, equivalent of 2ml NH4OH (2+3)/100ML liquid was added. When test portion was not readily soluble, it was comminuted to disperse it evenly in liquid, agitated vigorously and washed down sides of flask with 0.1ml NH2OH. Mixture of 5mm at 121-123^{0}C was autoclaved and cooled, diluted to measured volume with water, undissolved particles was left to settle and filtered. Aliquot of clear solution was taken, added water to it, adjusted to PH 6.8 and diluted with additional water to measured volume containing pernil folic acid. It was designated as test solution.

Mineral Analysis

Iron (Fe): This was determined using the Phenanthroline method as described by AOAC (2005). Five millilitres of Phenanthroline solution and two millilitres of concentrated HCl were added in the test-tube. One millilitre of hydroxylamine solution was added and left to boil for 2mins. Nine millilitres of ammonium acetate buffer solution was added and diluted with 50ml of water. The absorbance was read at 510nm wavelength.

Calcium (Ca): This was carried out according to AOAC (2005) method. Previously ashed sample was dissolved in 5ml of 30% HCl and 45ml of distilled water. The diluted samples were filtered and the filtrates were used to analyze for calcium using atomic absorption spectrophotometer.

Zinc: Zinc content was determined using the dithizone method described by AOAC (2005). Zinc was separated from other metals by extraction with dithizone and then determined by measuring the colour of the zinc dithizone in carbon tetrachloric. The separation was achieved by extraction at pH of 4.0-5.5 and the addition of sufficient sodium thiosulphate. Zinc also forms a weak thiosulphate complex that tends to retard the slow and incomplete reaction between zinc dithizone. 2g of the digested sample was pipette into test tube and 5ml of acetic buffer was added. 1ml of sodium thiosulphate solution was added and mixed after which 10ml of dithizone solution was added. The mixture was shaken for 40 minutes, and the reading taken at 535nm, the standard was prepared and zinc concentration of the sample was calculated.

Flavonoid: This was done using Bohm and Kocipai – Abyazan (2005) method. Ten grammes of each sample were extracted repeatedly with 100ml of 80% aqueous methanol at room temperature. The whole solution was filtered through Whatman filter paper No 42 (125mm). The filtrate was later transferred to a crucible and evaporated to dryness over a water bath and weighed to a constant weight.

Saponin: The Obadori and Ochuka (2007) method was used in determining the saponin content for the sample. Two grams of each sample was weighed into a beaker containing 20ml of 20% ethanol, heated over hot water for four hours with continuous stirring at about 55^{0}C. The mixture was filtered, and the residue re-extracted with another 20ml of 20% ethanol. The combined extract of 4ml was reduced over a water bath at 90^{0}C. The concentrate was transferred into 250ml separator, filtered and washed with 20ml of diethyl ether. The aqueous layer was removed, ether discarded and purification process repeated. About 6ml of n-butanol was added into the extract and washed twice with 10ml of 5% aqueous sodium chloride. The remaining solution was heated in a water bath. After evaporation, the dry samples in the oven were weighed to obtain a constant weight. The saponin content was then calculated in percentage**.**

Phytate: The method used was described by AOAC (2000). About 0.5gram of the sample was weighed into 500ml of 2.4% HCl for 1hour at room temperature, poured out and filtered. From the filtrate, 5millilitre was pipette and diluted to 25ml of water. From the diluted sample, 10ml was pipetted into a test-tube through amber litres in grade 200 – 400 mesh to elude inorganic phosphate and added 15mililiter of 0.7m sodium chloride. The absorbance was taken at 520nm.

Data Analysis: Data generated from the study were analysed with descriptive statistics (mean and standard deviation).

Results of Chemical Analysis of the Study

Table 1: Proximate composition of fresh and shade dried leaves of *Bryophyllum pinnatum* (*odaopue*), *Amaranthus hybridus* (*eriemionu*) and *Corchorus olitorius* (*ahihara*). (mg /100g)

Proximate (100g/sample)	FB	SDB	FA	SDA	FC	SDC
Moisture%	90.53±0.31	45.67±0.42	82.33±0.31	28.93±0.95	79.46±0.30	23.80±0.35
Protein%	1.09±0.06	2.82±0.07	2.79±0.04	3.04±0.01	2.88±0.05	2.94±0.62
Carbohydrate%	4.26±0.93	8.02±2.39	6.54±0.19	45.96±5.68	11.33±0.58	27.57±0.31
Fat%	0.87±1.03	2.87±1.86	1.87±0.31	3.00±0.80	0.47±0.64	1.00±0.00
Fibre%	1.99±0.34	31.37±0.51	2.31±0.30	13.20±0.85	2.94±0.51	29.33±0.68
Ash%	1.27±0.12	9.27±0.12	4.47±0.50	9.67±0.12	2.87±0.12	15.00±0.20

Key: *Mean± standard deviation of 3 determinations FB = Fresh *Bryophyllum pinnatum* SDB = shade dried *Bryophyllum pinnatum* FA = Fresh *Amaranthus hybridus* SDA= shade dried *Amaranthus hybridus* FC = Fresh *Corchorius olitorius* SDC= Shade dried *Corchorius olitorius*

Data in Table 1 indicate that Moisture was highest in fresh *Bryophyllum pinatum* (90.533±0.31) and lowest in shade dried *Corchorius olitorius* (23.80±0.35). Protein was highest in shade dried *Amaranthus hybridis* (3.04±0.01). Carbohydrate was highest in shade dried *Amaranthus hybridid* (45.96±5.68). Fat content was highest in shade dried *Amaranthus hybrid* (3.00±0.80) and lowest in fresh *Corchorius olitorius* (0.47±0.64). Fibre was highest as well as lowest in both shade dried and fresh *Bryophyllum pinatum* (31.37±0.51 and 1.99±0.34 respectively). Ash was highest in shade dried *Corchorus olitorius* (15.00±0.20) and lowest in fresh *Bryophyllum pinnatum* (1.27±0.12)

Table 2: Vitamin composition of fresh and shade dried leaves of *Bryophyllum pinnatum* (*odaopue*), *Amaranthus hybridus* (eriemionu) and *Corchorus olitorius* (*ahihara*). (mg/100g)

Nutrients	FB	SDB	FA	SDA	FC	SDC
Pro vitamin A	2.83±0.19	4.53±0.06	0.96 ± 0.02	5.04 ± 0.12	0.78±0.01	3.29±0.10
Vitamin C	4.24±0.60	4.05±1.05	8.85±2.45	6.47±1.17	11.73±1.00	5.79±0.58
Folic acid	1.93±0.12	4.33±1.10	3.16±0.08	0.24±0.11	1.22±0.05	1.51±0.11

Key: *Mean± standard deviation of 3 determinations FB = Fresh *Bryophyllum pinnatum* SDB = shade dried *Bryophyllum pinnatum* FA = Fresh *Amaranthus hybridus* SDA= shade dried *Amaranthus hybridus* FC = Fresh *Corchorius olitorius* SDC= Shade dried *Corchorius olitorius*

Table 2 shows the vitamin contents of the studied vegetables. Pro vitamin A was generally higher in all shade dried samples than the fresh ones. Pro vitamin A was highest in shade dried *Amaranthus hybridis* (5.04 ± 0.12). Conversely Vitamin C was higher in all fresh than shade dried samples. It was highest in *Corchorius olitorius* (11.73±1.00). Pholic acid was highest in shade dried *Bryophyllum pinnatum* (4.33±1.10).

Table 3: Mineral composition of fresh and shade dried leaves of *Bryophyllum pinnatum* (*odaopue*), *Amaranthus hybridus* (*eriemionu*) and *Corchorus olitorius* (*ahihara*). (mg/100g)

Nutrients	FB	SDB	FA	SDA	FC	SDC
Calcium	0.62±0.17	2.62±0.13	0.64±0.08	2.57±0.09	0.66±0.03	2.72±0.03
Iron	8.36±0.14	18.98±0.23	9.95±0.39	19.13±0.76	8.21±0.44	15.87±0.40
Zinc	16.30±3.25	49.87±6.69	33.37±1.79	50.77±3.23	33.33±3.18	57.43±6.12
Iodine	71.67±0.90	172.67±9.02	71.20±0.69	133.67±14.12	54.10±5.82	59.73±18.53

Key: *Mean± standard deviation of 3 determinations. FB = Fresh *Bryophyllum pinnatum* SDB = shade dried *Bryophyllum pinnatum* FA = Fresh *Amaranthus hybridus* SDA= shade dried *Amaranthus hybridus* FC = Fresh *Corchorius olitorius* SDC= Shade dried *Corchorius olitorius*

Mineral analyses in Table 3 reveal that calcium was highest in shade dried *Corchorius olitorius* (2.72±0.03). Iron was highest in shade dried *Amaranthus hybridis* (19.13±0.76). Zinc was highest as well as lowest in both shade dried and fresh *Corchorius olitorius* (57.43±6.12 and 33.33±3.18 respectively). Irodine was highest in shade dried *Bryophyllum pinnatum* (172.67±9.02) fresh and lowest in *Corchorius olitorius* (54.10±5.82).

Table 4: Phytochemical composition of fresh and shade dried leaves of *Bryophyllum pinnatum* (odaopue), *Amaranthus hybridus* (eriemionu) and *Corchorus olitorius* (ahihara). (mg/100g)

Nutrients	FB	SDB	FA	SDA	FC	SDC
Flavonoids	3.19±0.16	5.75±0.30	3.21±0.15	5.35±0.08	3.33±0.13	5.42±0.03
Saponin	632.83±1.45	636.43±0.64	634.96±1.04	642.93±1.45	634.97±0.64	639.83±0.23
Phytate	1.26±2.01	0.47±0.01	0.11±0.00	0.04±0.01	0.83±0.00	0.04±0.01

Key: *Mean± standard deviation of 3 determinations. FB = Fresh *Bryophyllum pinnatum* SDB = shade dried *Bryophyllum pinnatum* FA = Fresh *Amaranthus hybridus* SDA= shade dried *Amaranthus hybridus* FC = Fresh *Corchorius olitorius* SDC= Shade dried *Corchorius olitorius*

The flavonoid content of the fresh and shade dried leaves in Table 4 ranged from 3.19 to 5.75mg/100g. Flavonoid was highest in shade dried *Bryophyllum pinnatum* (5.75±0.30). Saponin showed highest prevalence in shade dried *Amaranthus hybridis* (642.93±1.45). Phytate was highest in fresh *Bryophyllum pinnatum* (1.26±2.01)

Discussion

Moisture was relatively high in th fresh vegetables. The high moisture contents ranging from 79.46 to 93.53mg/100g are indicative of their freshness. The leaves available moisture provides for greater activity of water soluble enzymes and co-enzymes needed for metabolic activities of the vegetables and makes them aid digestion of food better (Iheanacho & Ubebani (2009). However, high moisture contents facilitate bacterial action, giving them a very short shelf life and easy perishability (Adepoju & Oyewole, 2008). The result on the protein contents of the leaves revealed that shade dried Amaranthus hybridus had the highest value (3.04±0.01). Protein is nutritionally significant in food as a source of amino acids (Orech, Akenga, Ochora, Friss & Aagaard-Hassen, 2005) and aids in formation of antibodies that enable the body to fight infection. Shade dried *Bryophyllum pinnatum* had the highest fibre content of all the three leafy vegetables studied. Fibre helps in maintaining bulk motility, increasing intestinal peristalsis by surface extension of the food in the intestinal tract for healthy condition, curing of nutritional disorders and food digestion. Dietary fibre is reported to lower the risk of coronary heart diseases, hypertension, diabetes and colon and breast cancer, piles and appendicitis (Orech, Akenga, Ochora, Friss & Aagaard-Hassen, 2005).

The carbohydrate contents of *Amaranthus hybridus* and *Corchorius olitorius* (shade dried) were 45.96 and 27.57% respectively and higher than the fresh and shade dried *Bryophyllum pinnatum*. Carbohydrates are pivotal nutrients required for a healthy adequate diet (Emebu & Anyika, 2011). The fat content of *Amaranthus hybridus* was higher than *Bryophyllum pinnatum* and *Corchorius olitorius*. This may suggest that this latter vegetable may not be high in fat. It could therefore be used by individuals on weight reduction. However, *Amaranthus hybridus* may not be fattening because of its high level of crude fiber. The ash content of any sample is the measure of the mineral content of the food (Nnamani, Oselebe, & Agbatutu 2009). The ash content was higher in the shade dried samples when compared to the fresh samples. However, the result differs from the findings of Akubugwo, Obasi, Chinyere, and Ugbogu (2007) that recorded 13.8% for *Amaranthus hybridus*. Variation in the compositions of the same food type from different sources may be due to the location, soil variation, maturity and the cultural practices adopted during planting (Adeleke & Abiodun, 2010).

The result of this study showed that the vegetables studied are rich sources of pro-vitamins A, C and folate. This finding is in agreement with the result of Soriano-Garrcia, Arias-Olguin and Montes (2018); Arasaretnam, Kiruthika, & Mahendran (2018) and Akubugwo, Obasi, Chinyere, and Ugbogu (2007). Shade dried *Amaranthus hybridus*, had the highest level of pro-vitamin A, a vitamin that protects the body cells from the damaging effects of free radicals, enhance the functioning of immune system and aids reproductive system to function properly (Young & Lowe 2001). The Vitamin C content was within the range 5.25mg/110g to 416.2 mg/100g on wet weight basis (W/W) of 16 common leafy vegetables by Mathiventhan & Sivakaneshan (2015), and generally higher in fresh than shade dried samples in all vegetables studied. Ascorbic acid (vitamin C) is an antioxidant which helps to protect the body against cancer and other degenerative diseases such as arthritis and type II diabetes mellitus (Adeniran, Olajide, Igwemmar & Orishadipe 2013) and strengthens the immune system.

Calcium content was high in shade dried *Corchorius olitorius* (2.72mg/100g).The relatively high content of calcium in *Corchorius olitorius* suggests that it may be of therapeutic value in hypocalcaemic state like osteoporosis. Iron contents in the vegetable samples are higher than those reported for some vegetables elsewhere in Nigeria (Odangowei, Esie and Dike 2019). Iron is an important element in body immune function, cognitive development, temperature regulation, energy metabolism and work performance. It is essential for haemoglobin formation, normal functioning of the central nervous system and in the oxidation of carbohydrates, protein and fats (Chaturvedi, Shrivastava & Upreti 2004).

The zinc content of the vegetables ranged from 16.30-57.43mg/100g. Zinc is an essential trace element for protein and nucleic acid synthesis and normal body development (Melaku, Clive & Habtamon, 2005), stimulates vitamins activities and formation of red and white blood cells and improves male fertility. The presence of zinc in the leaf samples could mean that the plant can play valuable roles in the management of diabetics which result from insulin malfunction.

The presence of flavonoids in appreciable amount (3.19 - 5.75mg/100g), inferred that the leaf samples have anti-inflammatory, anti-carcinogenic, pain relieving effects (Okunlola, Jimoh, Olatunji & Olowolaju, 2017). Saponins affect the immune system and help to protect the human body against scavenging properties (Marierfield, 2003). Phytate is present in the investigated vegetables at different concentrations. The antinutrient potential of phytate is owing to its strong binding affinity for essential minerals like zinc, iron and calcium. Binding to these minerals leads to the formation of insoluble precipitates that are far less absorbable in the intestines; thereby reducing their bioavailability (Dendougui & Schwedt 2004).

Conclusion

The study has provided useful information on nutrient and phytochemical composition of the studied vegetables. It can be concluded that shade drying is a good processing method for the vegetables as it conserved more nutrients than the fresh leafy vegetables. There was better retention of nutrients like protein, carbohydrates, fat, fibre, ash, some vitamins, minerals and some phytochemicals except vitamin C and phytate which had nutrient values reduced in shade dried samples though insignificant.

Recommendations

Based on the results of this study, these recommendations were made.

1. The utilization of these vegetables using shade drying methods except vitamin C and increase in family diet should be encouraged by Nutrition educators as they have been found to be high in proximate, micronutrients, and phytochemicals.
2. Nutrition education should be given by Nutritionists to rural women through seminars, women conferences and meetings to sensitize them on the importance of careful shade drying these vegetables and their need to be adopted to conserve nutrient in food preparation for good health
3. Combination with other foodstuffs is recommended to meet nutritional needs of the rural poor and the vulnerable groups.
4. Promotion of the consumption of these vegetables can help reduce food insecurity and improve nutrition.
5. The cultivation of these green leafy vegetables in home gardens by home makers should be encouraged to prevent extinction of these green leafy vegetables and to make them easily available all seasons for family consumption.

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Constraints to Acquisition of Entrepreneurial Skills in Garment Making by Undergraduates: A Case Study of Ignatius Ajuru University of Education, Port Harcourt, Rivers State

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Abstract

The study focused on constraints to acquisition of entrepreneurial skill in garment making by undergraduates of Ignatius Ajuru University of Education (IAUni Ed) Rumuolumeni Campus, Port Harcourt, Rivers State as a case study. Specifically, the study identified students, teachers and school/ facilities related constraints to acquisition of entrepreneurial skills in garment making, as well as strategies that could be applied to ameliorate the constraints. It adopted survey research design. Populations for the study consistedt of all lecturers and undergraduate of Department of Home economics IAUni Ed. Questionnaire was used for data collection. Mean were used for data analysis. Major findings include 11 students -related constraints, including among others, lack of interest pattern drafting lack of funds for practical work, 12 teachers-related constraints, including insufficient number of clothing and textile lecturers, lack of in-service training for teachers to upgrade experiences; 17 school / facilities-related constraints, including lack of funds from school authorities to carry out projects in clothing and textiles laboratory, lack of entrepreneurial development center for acquiring skills in garment making in the school among other; 24 strategies that could be applied to ameliorate the constraints. These include establishment of entrepreneurial development center in garment making in the school, provision for excursions and field trips for students, employment of more clothing and textiles lecturers, sewing industries should provide opportunities for undergraduates, industrial training among others. Recommendations include that lecturers should encourage students and arouse their interest in garment making, take students out for field trips, government should employ more professional clothing and textile lecturers and provide funds to assist students practical work.

Keywords: Undergraduates, Acquisition, Entrepreneurial, Skill, Garment Making, Constraints.

Introduction

Entrepreneurial skill is necessary to identify opportunities and put useful ideas into practice by launching a new business or revamping already existing firm (Okafor, 2018). Anyakoha, (2015) noted that an entrepreneur has the ability to seek out investment opportunities, establish and run a business enterprise successfully. Akhurst (2012) defined entrepreneurship as the process by which individuals pursue opportunities. Entrepreneurship education prepares and equips students with entrepreneurial knowledge, attitude and skills (competencies) needed to be self-employed and employers of lobor Obeta and Ezema (2019).

Entrepreneurial skills involve the acquisition of competencies that will enable people make use of existing resources to produce goods and services (Edafe, 2008). Such skills enhance effective utilization of ideas, information and facts that can help an individual set up various form of business in clothing and textiles. Awogbenle, Iwuamadu, (2010), Lemchi, (2012) identified such skills.

Garment making is an entrepreneurial activity that could generate income for economic sustainability and development. It can prepare individuals with competencies needed to take body measurements, draft patterns, cut out different forms of garments, assemble and produce finished garments. Dabiri (2005) stated that garment making is the act of cutting, tearing, hemming, stitching, felling, mending, repairing and sewing clothes of all kinds both old and new for human consumption. The skills to be acquired in garment making include; basic sewing processes such as stitches, seams, edge finishing, body measurements, pattern drafting, adaptation, cutting and ability to sew clothes with a sewing machine among many others According to Anyakoha (2011), there are different stages involved in garment making skills and equipment needed that can produce exact design, style and fitness of any garment of one's choice. It provides learners with great opportunities in the clothing, textiles and fashion industry. It features prominently in course that prepares youths for gainful employment.

At the basic education level, garment making in Home Economics is a pre-vocational subject is designed among others to: provide pre-vocational orientation to learners, to develop essential skills in the learners so as to prepare them for technological application in order to stimulate and enhance creativity in them (Mfon and George 2019). At the senior secondary school level Clothing and Textiles is though as one of the Home Economics subjects. It affords individuals to acquire competencies in garment making, among other things.

At the tertiary education level Clothing andTextile as a Home Economics course of study is commonly made up of several courses including Garment Making. This course Graement Making equips students with relevant competencies or for entry into related occupations or for furtherance of their education. The importance of clothing as a basic human need emphasis the importance of garments and garment construction. Many studies have revealed the competencies (skills, attitudes and skills) involved in garment construction (Nwokomah, 1210, Cooper and Nye 2010; Ogunsola 2011; Bailey *et. al* 2014; Ahiamufue, *et.al*. 2014; Rumberger 2015).

Obeta and Ezema (2019) also observed that there are some basic skills which are necessary to be acquired by the garment maker. These skills include: the ability to study, interpret drawings, written instructions or sample of design, to have good drawing skills, mathematical skills, particularly making calculations involved in measurement, excellent knowledge of pattern making and sewing. Acquisition of the garment making competencies by learners in the schools is often constrainted by problems and challenges.

Alade, Nwadinigwe and Victor (2014) noted that the problems of garment making in the schools are based on the learners personal interest and learning ability. Many students perceive that garment making is difficult and they lose interest in it.Quighey, Marshall, Deaton, Cook and Padilla, (2011) pointed that teachers have the great challenge and responsibility of helping students learn so that they develop the knowledge and skills needed to function in today's world. The teacher has the role to motivate the students. Arubayi and Obunadike, (2011), pointed that the teacher has enormous role to play in motivating and imparting knowledge in clothing and textile students. The effectiveness of the teacher depends on the transfer of technical and professional skills, knowledge, and competence of the learning environment. Arubayi (2014) stated that funding is the life wire of any educational programme and bed rock for any effective acquisition of practical skills. No practical skill can be acquired without the provision of funds for procurement of consumables and non-consumable materials for teaching and learning garment making in Clothing and Textile. Abramuwe, Seriki and Lemon (2014) pointed that the clothing and textiles laboratories need equipment suitable for the skill to be acquired in such laboratories. These things are however not always there. The constitute constraints to acquisition ofentrepreneurial skills garment making in tertiary institutions, including universities such as Ignatius Ajuru University of Education. These constraints could be related to students themselves, or to the teachers, or to the schools and related facilities. There is also need to evolve necessary stratiges or ways of ameliorating the constraints. These can be grouped as school related and industry-related strategies. Such strategies will improve skill acquisition.

In Ignatius Ajuru University of Education under Home Economics, clothing and textilescourse taught include; introduction to clothing, textiles, weaving and printing HEC 124, housing and interior decoration HEC 311, pattern drafting and clothing construction and Allied crafts HEC 312 (Department of Home Economics and Academic Programme 2020). These various courses are offered at different levels in different semesters in each academic year. Theseare to help students acquire skills in garment making and improve their skillsin clothing constructions and design, though presently there is no established entrepreneurial development center in garment making in the school.Therefore, developing undergraduate youths with garment making skill in institution, the school have endowed them with both employable and entrepreneurial skills for responsible sustainable nation building and survival.

The problem of garment making has implication for national development. In every society, the quality of clothes and one's appearance to work and their degree of job satisfaction contribute directly or indirectly to economic stability and smooth ruining of affairs of the nation (Mkpughe, Igberadja, 2016). Mfon and George (2019) stated that jobs now in our society have different types of uniform which are materials made by garment making industries in the society based on the job type that require different uniform with different style and pattern of dressing today. The challenge is that moststudents do not have the basic skills in sewing processes, they are unable to draft patternsfollowing the basic techniques involved in drafting, layout and cutting fabrics. They do not have entrepreneurial skills and techniques in garment making. When students struggle to draft bodice and sew, it shows that there is problem. Adequate learning by students will bring about positive change and experiences for adequate acquisition of entrepreneurial skills in garment making. It is in the light of this that the study is carried out to identify the related constraints to acquisition of entrepreneurial skills in garment making by undergraduates of Ignatius Ajuru University of Education Port Harcourt Rivers

Purpose of the Study

The major purpose of the study was to investigate the constraints to acquisition of entrepreneurial skills in garment making by undergraduates of Ignatius Ajuru University of Education Port Harcourt; Specifically, the study determined the constraints to acquisition of entrepreneurial skill in garment making as related to:

1. students themselves
2. teachers
3. school /facilities
4. school-related strategies (Students, Teachers and Faculties) for improving acquisition of entrepreneurial skill in garment making.
5. industry- related strategies for improving acquisition of entrepreneurial skill in garment making.

Research Questions

What are the constraints to acquisition of entrepreneurial skills in IAUE as related to each of following;

1. students?
2. .teachers?
3. facilities/school?
4. What strategies could be applied to ameliorate the constraints(Students, Teachers and Faculties)?
5. What strategies could be applied to ameliorate the constraints in the industry?

Methodology

Area of the study: The study was a case study carried out in Ignatius Ajuru University of Education, Port Harcourt Rivers State. The university has three campus namely; Ndele campus, St John campus and Rumuolumeni campus where clothing and textiles under Home Economics and Hotel Management is studied.

Research Design: The study adopted a survey research design to investigate the constraint to the acquisition of entrepreneurial skill in garment making. It is a case Study because most undergraduate find difficult acquiring basic skills in garment construction.

Population of the Study: The population of the study was made up of ten (10) lecturers and 215 undergraduate students. of Home Economics Department. The total population size was 225 (IAUE Academic planning unit 2019/ 2020).

Sample for the Study: A sample of 120 respondents participated for the study. The respondent was made up undergraduate and lecturers of Home Economics and Hotel management. Purposive sampling techniques was adopted. (10 lectures ,30 students from 100 level ,37 students from 200 level, 23 students from 300 level and 20 students from 400 level).

Instrument for Data Collection: Questionnaire developed by the researcher was used for data collection. It was developed through literature review based on the specific purposes of the study. It had a four-point scale of Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) and values 4, 3, 2 and 1 assigned respectively. The questionnaire had 60items. The questionnaire was validated by three experts in Home Economics and Hotel Management.

Data Collection Techniques: A total of 120 copies of the questionnaire were distributed to respondents by hand. All the 120 copies of questionnaire were retrieved. It was hundred percent return rate.

Data analysis techniques: Data were analyzed using mean. Questionnaire based on the 4-point scale of 2.50 and above were considered as "agreed upon," while items with mean ratings of less than 2.50 and below were considered as disagreed upon.

Finding of the Study

The following results were obtained

Table 1: Mean Responses on Students-related Constraints to Acquisition of Entrepreneurial skill in Garment Making.

S/N	Students related constraints	Mean	Remarks
1.	Students perceive garment making to be difficult	3.60	Agreed
2.	Students are afraid to learn garment making skills	3.53	Agreed
3.	Students are not committed in doing practical assignments as to acquire skills in garment making	3.13	Agreed
4.	Lack of encouragement from teachers, school's authority and government	3.47	Agreed
5.	Students do not go out for fieldtrips to fashion industries	3.33	Agreed

	and sewing homes		
6.	Societal misconceptions that garment making as a course is for academically weak students	3.07	Agreed
7.	Students lack fund for practical work	3.60	Agreed
8.	Students are lazy to learn garment making skills	3.47	Agreed
9.	Poor attitude of students towards body measurement and pattern drafting skills	3.33	Agreed
10.	Students lack patience needed for the skills	3.60	Agreed
11	Students lack interest and focus on pattern drafting and sewing	3.69	Agreed

Table 1 reveals the students related constraints to acquisition of entrepreneurial skill in garment making. This show that each of the eleven items indicate a mean score of above 2.50. The lowest mean score is 3.07while the highest mean score is 3.69.

Table 2: Mean Responses on Teacher-related Constraints to Acquisition of Entrepreneurial Skill in Garment Making.

S/N	Teachers related constraints	Mean	Remarks
1.	Teachers lack skills to teach practical aspects of the subject	2.27	Disagreed
2.	Insufficient clothing and textile lecturers	3.73	Agreed
3.	Teachers use wrong teaching methods	2.42	Disagreed
4.	Lack of encouragement and incentives from school authorities and the government	3.53	Agreed
5.	Lack of functional and fruitful entrepreneurial activities among lecturers.	3.32	Agreed
6.	Lack of instructional materials	3.30	Agreed
7	Lack of in-service training for teachers to upgrade experience	3.60	Agreed
8	Teachers inability to improve their entrepreneurial skills	3.11	Agreed
9	Teachers lack rapport with students	2.20	Disagreed
10	Poor teaching method which may affect Students interest	3.60	Agreed
11	Teachers do not have information technology gargets to teach students entrepreneurial skills in garment making	3.50	Agreed
12	Lack of interest among teachers	3.40	Agreed

Table 2 reveals that all the 12 items indicate the lecturers related constraints to acquisition of entrepreneurial skill in garment making. This showed that the respondents agreed that all identified items were lecturers related constraints except item 1,3 and 9 that the mean value were below the cut-off point of 2.50.

Table 3: Mean Responses on Facilities/School Related Constraints to the Acquisition of Entrepreneurial Skill in Garment Making.

S/N	Facilities/school related constraint	Mean	Remarks
1.	Poorly equipped garment construction laboratory	3.40	Agreed
2.	Lack of functional sewing machines	2..76	Agreed
3.	Lack of sewing tools and accessories in the laboratory	2.90	Agreed
4.	Laboratory not equipped with functional modern equipment	3.50	Agreed
5.	Insufficient cutting tables and measuring tool	3.00	Agreed
6.	Epileptic electricity power supply	3.32	Agreed
7.	Lack of ICT gadget like computer use for teaching	3.66	Agreed
8.	Lack of funds for school authorities to carry out project for clothing and textile laboratory	3.79	Agreed
9.	Inadequate infrastructural facilities and poor maintenance	2.91	Agreed
10.	Lack of emphasis of entrepreneurial skill in garment making	3.33	Agreed
11.	Lack of interest for garment making by school authority.	2.73	Agreed
12	Lack of storage space in the laboratory	3.60	Agreed
13	Lack of standby generator for clothing and textiles Laboratory	3.20	Agreed
14	Lack of entrepreneurial development center for acquiring skills in garment making	3.79	Agreed
15	Insensitivity of school to enterprise creation and expansion strategy in garment making	3.35	Agreed
16	Lack of proper maintenance of existing equipment and tools	3.66	Agreed
17	Lack of provision of instructional materials for acquiring practical skills	3.30	Agreed

Table 3 reveals that 17 items show that respondent agreed on the facilities /school constraints to the acquisition of entrepreneurial skill in garment making; the mean responses were above 2.50. The lowest mean score was 2.73 while the highest mean score was 3.79.

Table 4: Mean responses on strategies could be applied to ameliorate the Related Constraints (Students, Teachers and Faculties) to the Acquisition of Entrepreneurial in Garment Making

S/N	Strategies That Will Make Them More Serious	Mean	Remarks
	Students related strategies		
1.	Students should go for excursions and field trips	3.55	Agreed
2.	Provision of adequate infrastructures and modern equipment	3.53	Agreed
3.	Parents to support students their wards work	3.52	Agreed
4	Exhibition of Students finished products would help to motivate and encourage them to develop skills in garment making	3.55	Agreed
5.	Students should develop positive attitude towards acquiring skills in garment making that it not for dropouts	3.53	Agreed
	Teachers related strategies		

6.	Teachers to motivate and encourage students to develop skills in garment making.	3.52	Agreed
7.	More time should be allocation for practical classes	3.51	Agreed
8	Adopt teaching methods to arouse students' interest in garment making skills	3.54	Agreed
9	Employ more clothing and textiles lecturers	3.56	Agreed
10	Lectures should engage in in-service training opportunities and entrepreneurial activities that will inculcate skills in garment making on students	3.54	Agreed
	School related strategies		
11.	Fashion show and exhibitions should be organized in the school to encourage students	3.54	Agreed
12.	Special fund should be made available for the success of entrepreneurial skills in clothing and textile practical classes to motivate students.	3.57	Agreed
13	Establishment of entrepreneurial development center in garment making in the school	3.60	Agreed
14	Laboratory should be equipped with infrastructures and equipment's	3.53	Agreed
15	School should ensure adequate provision of material and human resources needed for entrepreneurial skills in garment making	3.54	Agreed

Table 4 reveals that respondents agreed on the 15 items stated as strategies could be applied to ameliorate the related constraints (Students, Teachers and Faculties) to the acquisition of entrepreneurial skill in garment making. All the mean responses were 2.50 and above. The lowest mean score was 3.51 while the highest mean score was 3.60.

Table 5: Mean responses on Industry- Related Strategies for Improving Acquisition of Entrepreneurial Skills in Garment Making.

S/N	Strategies That Will Make Them More Serious	Mean	Remarks
	Industry related strategies		
1	Adequate provision of sewing tools and machines	3.97	Agreed
2	Availability of funds and loans	3.64	Agreed
3	Adequate power supply	3.97	Agreed
4	There should be room to accommodate undergraduate youths to acquire entrepreneurial skills in garment making	3.55	Agreed
5	The sewing industries should train undergraduate during industrial training to acquire entrepreneurial skills in garment making that will enable them setup a business after graduation	3.99	Agreed
6	Garment making industries should accommodate youths for apprenticeship	3.96	Agreed
7	Organize fashion show and modeling to arouse students' interest	3.95	Agreed
8	Motivate and sensitize undergraduate youths on the entrepreneurial opportunities in garment making industry	3.64	Agreed
9	Organize in-service training for teachers	3.90	Agreed

Table 5 reveals that respondents agreed on the 9 items stated as industry-related strategies for improving acquisition of entrepreneurial skill in garment making. All the mean responses were 2.50 and above. The lowest mean score was 3.55 while the highest mean score was 3.99.

Discussion of Findings

The study investigates the constraints to acquisition of entrepreneurial skills in garment making by undergraduate of Ignatius Ajuru University of Education Port Harcourt, Rivers State. The results in Table 1 reveal the students related constraints to acquisition of entrepreneurial skill in garment making include; lack of interest and focus on pattern drafting, lack of funds for practical work which makes it difficult for students to acquire skill in garment making and Students perceive garment making to be difficult among many others. The study also shows that lack of interest and focus on pattern drafting and sewing is one of the constraints, Obeta and Ezema (2019) pointed that lecturers should employ techniques in teaching clothing and textile students. They should teach students in love as this will certainly arouse student's interest in clothing construction during theory and practical lessons. Also, they should ensure that pattern drafting is taught and mastered practically before graduation of every students to enable the students have knowledge of each techniques and able to compete both locally and internationally. It is the skills students acquire in pattern drafting that will enable them to be competent in garment making. The study revealed that lack of funds for practical work which makes it difficult for students to acquire skills in garment making is another constraint. Arubayi (2014) pointed that funding is the life wire of any educational programme and bed rock for any effective acquisition of practical skills. No practical skill like garment making can be acquired without the provision of funds. Students are faced with the constraints of buying materials and tools for practical. Arubayi (2010) pointed that clothing and textiles is characteristically skill and activity oriented which when properly taught with relevant tools and equipment will equip the learner with saleable skills needed for self-reliance. If students have fund to purchase the basic materials such as brown papers, calico, measuring, cutting, sewing equipment (sewing machine) and more items for practical. Students will develop interest for acquisition of entrepreneurial skill in garment making.

The result in Table 2 revealed the lecturers related constraints to acquisition of entrepreneurial skill in garment making include; insufficient clothing and textile lecturers, lack of in-service training for teachers to upgrade experiences, poor teaching method which may affect students' interest and many more. Quigley, Marshal, Deaton, Cook and Padiall, (2011) pointed that teachers have the great challenge and responsibility of helping students learn so that they can develop skills and knowledge needed to function in today's world, for students to acquire salable skill in garment making which will make them employable and self-reliance after graduation, there should be enough lecturers to impact the needed knowledge and skill.The teacher has the role to motivate the students Arubayi and Obunadike, (2011), pointed that the teacher has enormous role to play in motivating and imparting knowledge in clothing and textile students. Akubue, Idumah and David (2018) pointed that it is the presentation of learning experiences and guidance activities from a teacher that enhance the opportunity of learning by the learner. The effectiveness of the teacher depends on the transfer of technical and professional skills, knowledge, and competence of the learning environment.

The findings on Table 3 revealed facilities/ school related constraints to the acquisition of entrepreneurial skill in garment making. The respondents agreed that the major constraints include; lack of funds for school authorities to carry out projects in clothing and textiles laboratory, lack of entrepreneurial development center for acquiring skills in garment making in the school and lack of maintenance of existing equipment. The finding agreed with Abiamume, Seriki and Lemon (2014), who pointed that if clothing and textiles is to meet the policy documented on education (2004), the programme should be properly funded. They agreed that funds are required for the provision of facilities such as classrooms, libraries, laboratories, workshops, furniture and the maintenance of these facilities. The clothing and textiles laboratories need equipment suitable for the skill to be acquired in such laboratories, if the laboratory is equipped with facilities and modern equipment for effective learning. They also pointed that the learning process is facilitated and made more meaningful when students study in classrooms that are well ventilated and adequately equipped. Mberengwa (2004) agreed that upgrading of clothing and textiles laboratories is a priority especially in technology equipment. Nwanokaomah (2010) recommended that government should assist in funding courses as well as regular maintenance on the existing equipment's so as to keep them in continuous working condition for effective learning. Citeve (2007), stated that it is left for the government and the society in Nigeria to uplift their image by making investments in the clothing and textile sector World Bank Report (2012) pointed that unless government and ministries of education tackle the problem created by inadequate supplies of books and equipment, the reforms in education and student's capacity building, no matter how far reaching, are unlikely to be effective. The government should allocate funds to support entrepreneurial skill like garment making in tertiary institution.

The findings on Table 4 reveal strategies could be applied to ameliorate the related constraints (Students, Teachers and Faculties) to the acquisition of entrepreneurial skill in garment making. All the respondent agreed to the various strategies. The highest response was on establishment of entrepreneurial development center in garment making in the school.

Osifeso and Chigbu, (2018) pointed that entrepreneurship centres where various skills could be learnt and acquire should be built and established at Local Government Areas of each State, so that young graduates could be encouraged to improve on skills acquired when schooling. Nwokomah (2010) identified entrepreneurial skills in clothing and Textiles which includes dress making, clothing construction, designing, fashion merchandizing, pattern illustration and many others. These entrepreneurial activities can help students acquire salable skills needed for self-reliance, generate money and also serve as means of expressing creativity. If school can establishment entrepreneurial development center in garment making in the school it will be of great help as it enables students acquire entrepreneurial skills in garment making before graduation.

The findings on Table 5 reveal the industry-related strategies for improving acquisition of entrepreneurial skill in garment making. The study revealed that the sewing industries should train undergraduate during industrial training to acquire entrepreneurial skills in garment making that will enable them setup a business after graduation, there should be adequate provision of sewing tools and machines, garment making industries should accommodate youths for apprenticeship among others. Olateju(2009)pointed that the undergraduate students are enjoying scholarship scheme of companies and voluntary agency for acquiring entrepreneurship skills, through the Students Industrial Work Experience Scheme (SIWES) programme of the Federal Government which provides opportunities for students to learn work and do work study within the tertiary and outside the institution in companies with related disciplines of the students in order to serve many purposes such as teaching students dignity of practical experience among other aims. Vandurhoff (2004) agreed that fashion designing provides students with apprenticeship opportunities in clothing and textiles. This have made the fashion industry to gain supremacy in the acquisition scheme of the nation. Garment making is an aspect of clothing and textiles which is an entrepreneurial skill activity, which if acquired by learners can help them to be self-reliant

Conclusion

The study identified the constraints to acquisition of entrepreneurial skill in garment making f undergraduate students: A case study of Ignatius Ajuru University of Education, Rumuolumeni campus Port Harcourt Rivers State with particular references to constraints related to students, teachers/lectures, facilities/school and strategies could be applied to ameliorate the related constraints (Students, Teachers Faculties and industry) to the acquisition of entrepreneurial skill in garment making. The findings on students-related constraints include; lack of interest and focus on pattern drafting, lack of funds for practical work which makes it difficult for students to acquire skill in garment making and many others, the lecturers' related constraints are insufficient clothing and textile lecturers, lack of in-service training for teachers to upgrade experiences, poor teaching method which may affect students interest and many more. The facilities/school related constraints are lack of funds for school authorities to carry out projects in clothing and textiles laboratory ,lack of entrepreneurial development center for acquiring skills in garment making and ,lack of maintenance of existing equipment The strategies that could be applied to ameliorate the related constraints (Students, Teachers and Faculties) are to establish entrepreneurial development center in garment making in the school, employ more professional lecturers and government/ school authorities to fund clothing and textile practical classes to motivate undergraduate students acquire entrepreneur skill in garment making. The industry-related strategies for improving acquisition of entrepreneurial skill in garment making revealed that the sewing industries should train undergraduate during industrial training to acquire entrepreneurial skills in garment making that will enable them setup a business after graduation, there should be adequate provision of sewing tools and machines and that garment making industries should accommodate youths for apprenticeship among others.

Recommendation

1. Students should be motivated by teachers to acquire entrepreneurial skills in garment making.
2. Lecturers should take students out for fieldtrips and organize fashion show to motivate students' interest.
3. School should equip the clothing and textile laboratory with infrastructural and equipment.
4. School should establish entrepreneurial development center in garment making in the school.
5. Government should employ more professional clothing and textiles lecturers.
6. Government and non-government agencies should fund the clothing and textile students as to encourage the acquisition of entrepreneurial skill in garment making.

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Clothing Provision Practices of Households in Ogba/Egbema/Ndoni Local Government Area of Rivers State

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Abstract

This study focused on clothing provision practices among families in Ogba/Egbema/Ndoni Local Government Area of Rivers State. Specifically, it determined factors households consider in making clothing decisions; practices families adopt in budgeting and purchasing their clothing needs. It adopted descriptive survey research design. Population for the study was homemakers within the age of 20-50 years in Onelga. Questionnaire was used for data collection. Data analyzed using mean and standard deviation. Major findingsw include 12 factors households consider in making clothing decision in Onelga; 13 clotging purchasing practices households adopt; and 13 budgeting practices households adopt. Four recommendations were made which include, that government should sponsor a programme through media that will enlighten the families on the need for making adequate clothing provision for family members and the consequences of lack of it.

Keywords: Clothing, Provision, Practices, Household, Decisions, Homemaker.

Introduction

Clothing is one of the basic needs of man. It can be described as "our next skin". Anyakoha (2015) defined clothing as items placed on the body to protect beautify or adorn it. This includes decorations such as cosmetics, tattoos, hair colour and hair do; ornament of jewelry, hand bags, clothes or apparels, among others. Different types of clothing are used for various activities and purposes in the household such as clothing for school/work, parties and social gathering, clothing for religious worship/household work, sports and picnic, night wear, under wears among others (Igbo 2006). Various attempts have been made to explain importance of clothing as part of the motivation underlying individual's clothing choice. Jones (1990) stated that clothes are majorly worn amongst people for six importance such as; protection, modesty, occupational identity, attraction, social status and traditional identity of the family. Donald (2010) explained that individuals in the family represent and speak volume of their root when they adorn themselves properly with their clothing choice. It is of no importance when clothing does not protect the human body. The importance of clothing in the household and the need to been appropriate preparations for its provision have been emphasized by many (Igbo 2002; Uzoezie 2012; Bellis 2016; Jenkin's 2019).

There are different ways a household can provide for clothing need of members. For instance, Hence Griese, (2002) stated that there are more creative ways of providing clothing without stress such as borrowing from friend renovating or affordable price and second handed clothes. Igbo (2002) also noted that clothing can be provided through purchasing, sewing, trading, sharing and renting it means acquisition through the payment of money or its equivalent. Clothes can be purchased at boutiques departmental stores, outlets, stores market, supermarket, offices, petty traders who may carry from house to house, office to office, store to store. Second handed can be purchased from the used clothing stores and market. Most time, sew is the only way to get new style, design and colours and fit that family member's need. It requires time and skills to get them well made. It is also cheaper and easy to sew clothes. Furthermore, clothing can be acquired through the aid of non-governmental organizations which are interested in the welfare of families. Religious organizations, deserter and refuge team may also aid family clothing provision and practice. All the activities a household carried out so as obtain clothes for the members, become their clothing provision practices.

Zachary (2011) observed that such activities aim of meeting clothing needs for household members and to give them approved appearance. Household members have different clothing needs. Anyakoha (2015) these practices may include the following; carrying out market survey, buying in bulk or small quantity, hire purchase and impulsive buying. This is the study of prices of commodities and clothes from different shops and location. This can be achieved by visiting a number of market and shop to ascertain prices of clothes. Anyakoha (2015) supported that market survey reveals where clothes are cheap, and seasons when clothes are in abundant to help consumers compare prices. Clothes can be bought in larger quantities. This consideration by the family head may involve money available at that moment, considering sex and age of different members of the family, good fit, attractive style, colour among others. Hire purchase is a system of buying clothes where the consumer deposit a part of the price for the clothes and take without completing the payment. Another form of hire purchase is "lay away or aside", this has to do with the consumer pays a little sum of money and the seller keeps them away or aside from other goods in the shop. The buyer takes it home only when he has finished paying for it.

Clothing provision practices for families in Onelga has been neglected by homemakers and family heads. This neglect has constituted some dress look nuisance such as children and members of the family wearing whatever they lay their hands on, thereby violating protection and modesty theories in clothing. According to Igbo (2010) home makers should endeavor to provide clothing for their members. Poor clothing provision has made family members to lose their sense of responsibility and decency. However, clothing speaks volume of the wearer and communicates to the beholder the strength of the background of individuals. Most homes, children and other family members are mostly seen with uncovered body or shabbily made clothing, because they lack the tutelage or guardian by their family head on the need to cover or protect the body. Hence if family members must be properly clothed, there should be adequate clothing provision.

Moreso, Gustav, (2018) stated that clothing provision for households covers the different categories of persons such as; men, women, children, youth, teenagers, the aged, among others. Hence, individuals should have access to sufficient changes of clothing to ensure their terminal comfort, dignity and safety. This entails the provision of more than more set of essential clothing items for households. Also, Gustav (2018) further added that clothing should be provided for households in its appropriateness like appropriate to climatic conditions and cultural norms, separately suitable for men, women, girls, boy among others and sized according to age. By implication the homemaker should involve all members of the family in making clothing provision even some with special needs like pregnant and lactating mothers, older people and infants are more prone to heat lost than adults due to their ratio of body surface area and may require more clothing to maintain level of terminal comfort, the homemaker require some clothing decision practices.

Decision is regarded as the cognitive process resulting in the selection of a belief or a course of action among several possible alternative options. Decision-making is the process of identifying and choosing alternatives based on the values, preferences and beliefs of the decision-maker. Every decision-making process produces a final choice, which may or may not prompt action. Hence, clothing decision has to do with the purchase and use of garments which is important for family members. According to Erich (2016) clothing decision is showing confidence and perceived related risk to satisfaction, the author further pointed that it covers physical characteristics such as color or fiber content. Moreso, it involves social class, quality/price relationships amongst others. It however implies that the homemaker stand the ground of making selection or choice of the kind of fabric that can be durable for family members. This is achievable with evaluative criteria such as laundering qualities, appearance and style amongst others. Kahneman (2000) stated that, it is better for the homemaker to have full understanding of clothing to be able to make satisfactory decision on the provision of family clothing. Moreover, family clothing decision should center on values, interests, attitudes, self-concepts and personal factors which will in turn enhance the appearance of family members. So, homemakers should make a perfect clothing decision in terms of providing clothing for family members.

Purpose of the Study

The main purpose of the study was to investigate the practices adopted by households in (ONELGA) the clothing provision of their clothing in Ogba/Egbema/Ndoni Local Government Area. Specifically, the study determined:

1. factors households consider in making clothing decision in ONELGA
2. practices households adopt in budgeting for their clothing needs in ONELGA
3. practices households adopt in purchasing their clothing needs in ONELGA

Research Question

1. What factors do households consider in making clothing decisions in ONELGA?
2. What are budgeting practices adopted by households in meeting their clothing needs in ONELGA?
3. What are the purchasing practices adopted by households in meeting their clothing needs in ONELGA?

Methodology

***Design of the Study*:** Descriptive survey was used for the study.

***Area of the Study*:** The area of the study was Ogba/Egbema/Ndoni Local Government Area which is one of the 23 Local Government areas in Rivers State. Onelga is located in the South-East of Rivers state with the headquarter at Omoku main land. It occupies a land mass of 1.621sqkm with a projected population of 283.294 people residing across the various communities. The major occupation of the people of Onelga includes: farming, civil service, trading and various crafts and skills. The L.G.A is inhabited by people of different age.

Onelga is made up of three ethnic groups and 30 villages. The area is thickly populated by households who pay less attention to clothing needs of their family members. As a result clothing provision practices is not seen as a major need of their households. Hence, families in these area must have the knowledge of clothing how to make clothing decision, budget for clothing and plan on how to carryout purchase of clothing. On the contrary, many family members are seen wearing clothes that are either torn, shabby, worn out, undersize, oversize among others. Knowledge of clothing provision practices among households will expose family members to different clothing provision practices that will enable them to provide clothing adequately for them.

***Population for the Study*:** The population for this study consists of all homemakers within the age of 20-50 years in Onelga. According to population (Census, 2006), the total population of homemakers in Onelga within the age range of 20-50 was 283,294. The reasons for using this age range are often the persons who provide the family clothing. They make decisions and purchases. Besides they are still strong and viable to endeavour to provide clothing for their family. The study covers the three clans of Onelga.

***Sample for the Study*:** The sample size for the study was 108 homemakers drawn through a multi-stage sampling technique. This is to help arrive at good representatives of the population. In the first stage, three villages were randomly selected out of ten villages. The selected village from Ogba clan was; Omoku, Okposi, Obigwe; twelve households was selected from each namely; Omoku 12, Okposi (12) and Obigwe (12) which comprises of father, mother, children and grandparents.

At the second stage, out of ten villages that make up that clan; three villages was randomly selected which are; Abacheke, Okwuzi and Mgbede for Egbema clan with twelve households each such as: Abacheke (12), Okwuzi (12) and Mgbede (12).

The third stage, out of ten villages of the Ndoni clan, three villages was randomly selected. They are Ogboukwu, Umu-Ajie and Umuedi twelve households were also used which is Ogboukwu(12), Umu-Ajie (12) and Umuedi (12). This gave a total of one hundred and eight homemaker which were involved in the study; purposive selection is to ensure that only homemakers within the age limit that bear the same characteristics of the population were selected.

***Instrument for Data Collection*:** **Q**uestionnaire was used for data collection. It was adopted based on the specific purposes of the study and extensive review of literatures related to the study. It had into two main parts. Part 1 sought for information on personal data of respondents while part II was sub-divided into three section, A-C which sought for information on three purposes of the study. Section A seeks for information on clothing decision of homemakers adopted in Onelga and it has 12 items. Section B sought information on practices families adopt in purchasing clothing in Onelga with 13 items. Section C sought for information on practices families in Onelga adopt in budgeting for clothing with 14 items. This information was collected at the level of nine villages. A four point scale of strongly agreed (SD)=4, agreed (A)=3, disagree (DA)=2 and strongly disagree (SD)=1 was used to obtain information from respondent.

The questionnaire was subjected to face-validation by three experts. Two from Department of Home Economics and Hospitality Education, one from Department of Agricultural Education all from Federal College of Education (Technical), Omoku. They were requested to vet the instrument for clarity of words, ambiguity of words and then the extent the items measured the purpose of the study. They made suggestion on items to be included and identified some items to be removed. Based on their corrections, and recommendations, the final copy of the questionnaire was developed. Ten copies of the instrument were trial tested on a sample that was not part of the study. After the trail test, their responses were subjected to Cronbach Alpha because the instrument was questionnaire the reliability indices gotten for cluster A, B and C overall were 0.92, 0.84 and 0.64.

***Method of Data Collection*:** a total of 108 copies of questionnaire was distributed to respondents by hand through the help of one research assistant. The research assistant was briefed on the purposes of the body study and how to administer the questionnaire to the respondents. The instrument was administered to each respondent through personal contact using research assistance. The completed 108 copies of the questionnaire was collected immediately from respondent for analysis. The reason for using research assistance is to help the researcher cover all the intended area of the study.

***Method of data Analysis*:** The data collected from respondent were analyzed using means. The mean of 2.50 was used at decision making using scale of 0.5 the upper limit is 2.5+0.5=3.0. Therefore, any item with mean of 2.50 and above was regarded as agreed upon while any item with mean less than 2.5 was regarded as disagree.

Findings of the Study

Table 1: Mean Responses on Factors households in Onelga consider in making Clothing Decisions

S/N	Factors considered	Mean $\overline{X}$	S.D	Decision
1.	Size of the family/number of persons in the family	3.37	0.84	Agreed
2.	Age of family members	2.90	0.79	Agreed
3.	Fit of clothes	3.33	0.87	Agreed
4.	Fabrics suitable to skin	2.37	0.5	Disagreed
5.	Durability of fabric	3.17	0.82	Agreed
6.	Clothes that suit the weather/season	3.00	0.73	Agreed
7.	Colour of clothes	2.80	.079	Agreed
8.	Comfort of clothes	2.27	0.77	Disagreed
9.	Available money	2.93	0.79	Agreed
10.	Clothing that suitable for work, various activities e.g. household, activities	3.10	0.59	Agreed
11.	Prevailing fashion	2.47	0.89	Disagreed
12.	Attractiveness of clothes	3.00	0.73	Agreed
13.	Culture of community	1.73	0.68	Disagreed
14.	Religion of family members	2.13	1.06	Disagreed
	Grand mean & standard deviation	**2.76**	**0.77**	

Mean = $\overline{X}$; SD = Standard Deviation

Table 1 reveals that all the items listed have their mean, ranging from 2.27 to 3.37. The mean of nine items ranging from 2.93 to 3.37. This shows that the mean responses of nine items are above 2.50 which is the cutoff point while means of five items are below the cutoff point. It also indicates that 9 items out of 14 items are factors households in Onelga consider in making clothing decisions. The standard deviation ranges from SD = 0.59-.05, it showed minor disparities in the opinion of respondents. However, it has no effects on the overall result of the respondents.

Budgeting Practices

Table 2: Mean Responses on Practices Households in ONELGA Adopt in Budgeting for their Clothing Needs

S/N	Practices adopted for Budgeting	Mean $\overline{X}$	S.D	Decision
1.	Use disposable income e.g. family income	2.43	0.80	Disagreed
2.	Use regular income e.g. salaries	3.13	0.76	Agreed
3.	Consider numbers of people in the family	2.77	0.80	Agreed
4.	Putting plan on how to buy clothes	2.97	0.88	Agreed
5.	Taking inventory of clothes already available	2.23	0.72	Disagreed
6.	Making price list	2.83	0.78	Agreed
7.	Going for market survey	2.97	0.79	Agreed
8.	Cash at hand	2.53	0.89	Agreed
9.	Buying second handed clothes	3.00	0.78	Agreed
10.	Shopping ground home or close markets	2.70	0.82	Agreed
11.	Adjusting family clothing needs with available finance	3.13	0.81	Agreed
12.	Buying from retailers	2.83	0.69	Agreed
13.	Utilizing hand-me-down with the family	1.73	0.06	Disagreed
14.	Creating plans on clothing purchase	2.70	0.82	Agreed
15.	Considering sex/age of family members	2.83	0.78	Agreed
16.	Estimate of clothing needs	1.73	0.68	Disagreed
17.	clothing items that may be sourced within household	2.37	0.5	Disagreed
18.	List the clothing needs of members of household	2.90	0.79	Agreed
	Grand mean &standard deviation	**2.65**	**0.73**	

$\overline{X}$ = mean; S.D= Standard Deviation

Table 2 reveals that the mean of 18 items ranging from 2.97 to 3.13. This means that the respondents perceived 13 items out of 18 items listed as budget practices adopted by families in Onelga, 2 items have the means score lower than 2.50 which is below cutoff point. This indicates that, the respondents disagreed with those items as budget practices adopted by families in Onelga for their clothing needs. The standard deviation of the items ranging from SD = 0.06 to 0.82. This implies that respondents are not too far apart from their opinions but are very close in their perceptions.

Purchasing Practices

Table 3: Mean Responses on Practices Households adopt in purchasing their clothing needs in ONELGA

S/N	Practices adopted for purchasing	Mean $\overline{X}$	S.D	Decision
1.	Preparation of shopping list	3.13	0.81	Agreed
2.	Engage in hire purchase	2.30	0.82	Disagreed
3.	Buy on credit and pay by the end of the month or as agreed	2.90	0.91	Agreed
4.	Impulse buying	1.73	0.68	Disagreed
5.	Bulk buying	2.13	1.06	Disagreed
6.	Purchase when money is available	2.83	0.69	Agreed
7.	Consider seasons of the year when clothing are cheap	3.33	0.70	Agreed
8.	Check quality of clothes before paying	2.54	0.89	Agreed
9.	Buy from hawkers/vendors	3.00	0.78	Agreed
10.	Buy from boutiques	2.23	0.72	Disagreed
11.	Use tailor-made clothes	2.70	0.82	Agreed
12.	Buy from local market	2.77	0.96	Agreed
13.	Buying second-handed clothes	2.80	0.79	Agreed
14.	Buying multi-purpose clothing items	2.30	0.82	Disagreed
15.	Estimation of the cost of clothing items before buying	2.83	0.78	Agreed
16.	Evaluating present stock of clothing	2.13	1.06	Disagreed
17.	Paying for clothes installmentally	2.97	0.79	Agreed
	Grand mean &standard deviation	**2.62**	**0.83**	

$\overline{X}$ = mean; S.D = Standard Deviation

Table 3 shows that the mean $\overline{X}$ responses of 17 items ranging from 1.73 to 3.33. The means of eleven items ranging from 2.53 to 3.33. This indicates that the respondents see these items as practices adopted by families in Onelga to purchase clothing. However six items out of 17 items listed had a mean score of 1.73 to 2.30 which is below the cutoff point. This shows that the respondents sees these items as practices that are not adopted by families in Onelga to purchase clothing needs. The standard deviation of the item ranging from SD=1.73 to 2.13. This implies that the respondents are not too far from their opinions but were very close in their perceptions.

Discussion

The finding of this study is organized and discussed according to research questions. The findings on research question 1 as presented in table 1 revealed that size of the family, ages of family members, clothes that fit well, durability of clothes, clothes that suits the weather/season, checking of colours of clothes, considering cash at hand, clothes that matches works and activities and attractive clothes among others. The respondent disagreed with 3 items as factors households in Onelga consider in making clothing decision such as; clothes that are cool and pleasant touch, considering clothes allowance and adjusting family clothing needs with available cash. These factors for household clothing decisions are in line with Anyakoha (2015) which stated that, household clothing decision include; considering cash at hand, family size, and durability amongst others. In support of this, Gorlin & Dhar, (2012) stated that clothing decision means to identify what the clothing need of the family is and putting up plans on how to get the plan achieved. This implies that homemakers have to seek for information about clothing family members. Family size is among the factors that the respondent considered appropriate for clothing members of the family. As the family increase, the responsibility also increases in meeting clothing needs. Gannett (2003) added that the size of the family determines the accurate provision that can be made such as providing the right clothes for the season, occasion, activities and works among others. The author stated that making maximum provision for clothing depends on how effective these factors are duly followed.

The finding on research question 2 as presented in table 2 showed that; preparation of shopping list, buying on credit pay by the end of the month or as agreed, purchase when money is at hand or available, consider seasons of the year when clothing are cheap, check quality of clothes before paying, buying from hawkers, tailor made clothes, buying from market and buying second handed clothes are listed as: purchasing practices adopted by families in Onelga, the respondents disagreed with 5 items out of 13 listed such as taking inventory of clothes already available, disposable income tax, buying from boutiques, impulse buying, bulk buying. These practices of purchase adopted by families in Onelga which are disagreed by respondents in research question 2 are not in accordance with, Dodoo (2014) who stated that for a satisfactory purchasing practice several opinion should be considered to be able to get the best for family members. He further pointed that the needs and desire of family clothing can be achieved when the homemaker consider what to buy, how to buy, where to buy and people to buy from. Similarly, Dadfor, (2013) stated that purchase consist of taking a decision to buy goods and services clothing inclusive that for household use. The implication the person that indirectly involve in purchasing practices stand the chance of reaching a decision, which leads to achieving the best purchasing practices to enhance the clothing needs of the family.

Finding on Research question 3 as presented in Table 3 showed that, budgeting practices adopted by families in Onelga such, permanent income/salary, number of people in the family, putting plans on how to buy clothes, making price list, going for market survey, going for smart shopping, buying second handed clothes, shopping around home or close market, adjusting family clothing needs with available cash, buying from low retailers and stating your income are budgeting practices adopted by families in Onelga. The respondents disagreed with three items as budgeting practices not adopted by families in Onelga, they are; utilizing hand-me-down, disposable income e.g. tax and taking inventory of clothes already available.

These budgeting practices are in agreement with Seock (2013) who pointed that budgeting can involve a record of what you earn and spend, your needs and you want since it will enable families set aside money for other unforeseen expenses. In support of this, Hong (2010) stated guideline on best family budgeting practices as; consider family income, family size, composition of family members, goals of family members among. These are also in line with the researchers findings.

It is notable that clothing provision pattern of families is very poor and has become a source of concern, mostly when families lack understand of what to do. Many families in Ogba/Egbema/Ndoni Local Government Area lack knowledge of adequate clothing provision practices such as considering some factors before making clothing decision, putting up purchasing ideas and budgeting for clothing needs. These are important because of the ground families stand in the society. Most families their members dress in a way that send wrong signals of them or portray wrong image. Some families in rural areas do not even see the need to cloth their members as such most of their wards are seen with either torn, worn-out or shabby clothing hence, families must understand the need to carry out some clothing provision practices in order to address these needs. This study is aimed at identifying family clothing provision practices in Ogba/Egbema/Ndoni Local Government Area of Rivers State.

The study adopted a descriptive survey research design. An instrument was designed to determine family clothing provision practices in Onelga. The population for the study is 108 which consist of family heads or homemakers within the age of 20-50 years in Onelga. A multi-stage sampling technique is adopted in the selection of respondents for the study. Three research questions were answered. A structured questionnaire of 40 items was developed for the study through literature review. These research questions are based on three purposes of the study. The questionnaire was administered by personal contact and with the help of research assistance. One hundred and eight copies of questionnaire were duly completed and returned. The research questions were analyzed using mean and standard deviation.

The findings of this study will have implication to so many persons as students, teachers among otters, but mostly to the homemakers and family heads who are within the stipulated age of the study 20-50. This is a viable and articulates age where the homemaker within this age could endeavor to provide clothing items for its members. The information obtained will be useful for the homemakers if they submit themselves to talk and training through seminars and workshops on clothing provision practices. The knowledge of the findings will expose the homemaker or family head on making good clothing decision such as; considering family size, cash at hand, attractive clothes, durable clothes, among others. The result of the study will also enlighten them more on the importance of budgeting before purchasing of family clothing practicing this finding, will help homemakers to save their money and also enhance the appearance of family members. Proper dissemination of the outcome of this finding through enlightenment programmes like seminars and workshops will help family to understand the importance of clothing provision practices. It will foster changes in their attitude as they will be determined to follow all plans to affect those clothing provision practices. The knowledge of making good clothing decision will enable them get the right clothe for their members. When budgeting practices is inculcated in them, it will help them plan before buying and go for what the family really need as a result they may save money and time for them.

Conclusion

Clothing serves a social purpose just as food serves a health purposes in every human society. The person whose clothes do not fall within approved standard in any given situation attract attention that is most times negative. Moreover, clothing is an important clue used by people to form an impression of the family one is coming from or tells whom one is and what one is not. Thus, the following conclusion was made. Families in Ogba/Egbema/Ndoni Local Government Area in Rivers State do not consider certain type of clothing decision in family as provision practices such as adjusting family clothing needs with available cash at hand, clothes that are cool and pleasant touch among others. More so, some clothing purchasing practices were not adopted such as, impulse buying, bulk buying etc. Lastly, some budgeting practices were not adopted such as, taking inventory of clothes already available, utilizing hand-me-down, disposable income. However, it was discovered that the clothing provision practices of family members in Ogba/Egbema/ Ndoni can be enhanced by adopting the practices this work has proffered.

Recommendation

1. Families should develop interest in their clothing provision practices since it is going to help them enhance and improve their appearances.
2. Government should sponsor programme through media that will enlighten the families on the need for providing clothing and the consequences of lack of it.
3. Federal government should enforce law through SON which will ensure durability of clothing articles when families acquire them.
4. School authorities should take personal interest to educate the learners on the importance and usefulness of clothing.

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