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INTERNATIONAL JOURNAL OF FAMILY AND CONSUMER SCIENCES VOLUME 7, 2018

FACSSON

INTERNATIONAL JOURNAL OF FAMILY AND CONSUMER SCIENCES

ISSN 2315 - 9367

OFFICIAL PUBLICATION OF FAMILY AND CONSUMER SCIENCES SOCIETY OF NIGERIA

VOLUME 7, 2018

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ENHANCING FOOD VALUE CHAIN THROUGH FOOD SAFETY AND NUTRITION FOR ECONOMIC DEVELOPMENT

***Kayode Somorin and David N. Dumbiri**
Department of Vocational and Technical Education
Faculty of Education, University of Benin
Benin-City, Nigeria.
*olukayode.somorin@uniben.edu and david.dumbiri@uniben.edu
+234 806 696 1043 and +234 803 420 3662

Abstract
Food value chain means merely activities carried out from the beginning of farming activities till when the food item is cultivated to harvesting, transported, display at the shops, purchase by the customer and sometimes the waste disposal. It gives a holistic understanding of how actors involved in the food perform their activities. No doubt it can be a complicated system, but it works for everyone involved in it. There is a high return on investment for the players involved in the value chain, but this has not necessarily translated to improved nutrition for economic development. The authors of this paper are of the opinion that when food value chain is understood correctly, it can not only lead to consumption of nutritious food but also lead to economic development for the nation. Examples from other countries similar to Nigeria regarding climate and economic conditions were examined in the area of value chain addition to agricultural produce. The value of food products can be enhanced through a proper understanding of value chain addition and application of food safety practices. These practices include Good Agricultural Practices, (GAPs) and Good Manufacturing Practices (GMPs). These practices have been identified to precede Hazard Analysis and Critical Control Points (HACCP) in assuring food safety. Value chain for economic development was discussed, and implications fo Nigerian economic development were enumerated. Recommendations were drawn from the study to include the adoption of GAPs, GMPs and HACCP by the actors in the value chain to improve the delivery of nutritious food which will improve economic development.

Keyword: Food Value Chain, Food Safety, Economic Development

Introduction

Many authors and researchers have identified food value chain as series of processes or activities undertaken by actors in the food cycle from its production to consumption and also through waste disposal (Delloite, 2013; Nguyen, 2015; Fanzo, de Pee, Downs, Marshall & Bloem, 2017).This involves actions such as planning, production or cultivation, marketing and distribution of farm produce. These activities can be done by one actor or divided among multiple actors. The activities within a value chain can produce goods or services and can be contained within a single geographical location or spread over broader areas (Global Value Chain Initiative, 2014). Whenever value chain is discussed, the focus has always been on the economic value added to the actors involved in the process. The value chain is, however, a commodity-specific, i.e. it involves only one particular food item relevant to a diet (Gelli et al, 2015). Over the years, food value chain has mainly been an idea for rural development (Altenburg, 2007; Humphrey & Navas-Aleman, 2010; Stoian, Donovan, Fisk & Mouldoon, 2012). As an approach to rural development, the value chain concept focuses on improving the commercial relations between the actors in the chain with the initial expectation of improving their economic status for those involved especially smallholders (Gelli et al., 2015). The primary focus of value chain concept is to increase income generation for the farmers or growers and has neglected the nutrition of the growers and also the final consumers (Hawkes, 2013). This has mostly worked in the Nigerian context for so many years, but for global competitiveness., food safety must be incorporated in the value chain for nutrition and economic development. The primary purpose of this research is to identify various ways in which food value chain has affected agricultural produce in a few countries similar to Nigeria.

Components of Food Value Chain

Kaplinsky & Morris (2000) have described food value chain as a coordinated value-addingactivities done by farmers and firms which are involved in the chain to transform a particular product which is sold to final consumers in a profitable manner which does not permanently deplete natural resources. From the description above, the processes in any given food value chain are producers/farmers, processors, distributors, consumers and the government. Thisis represented in the diagram below:

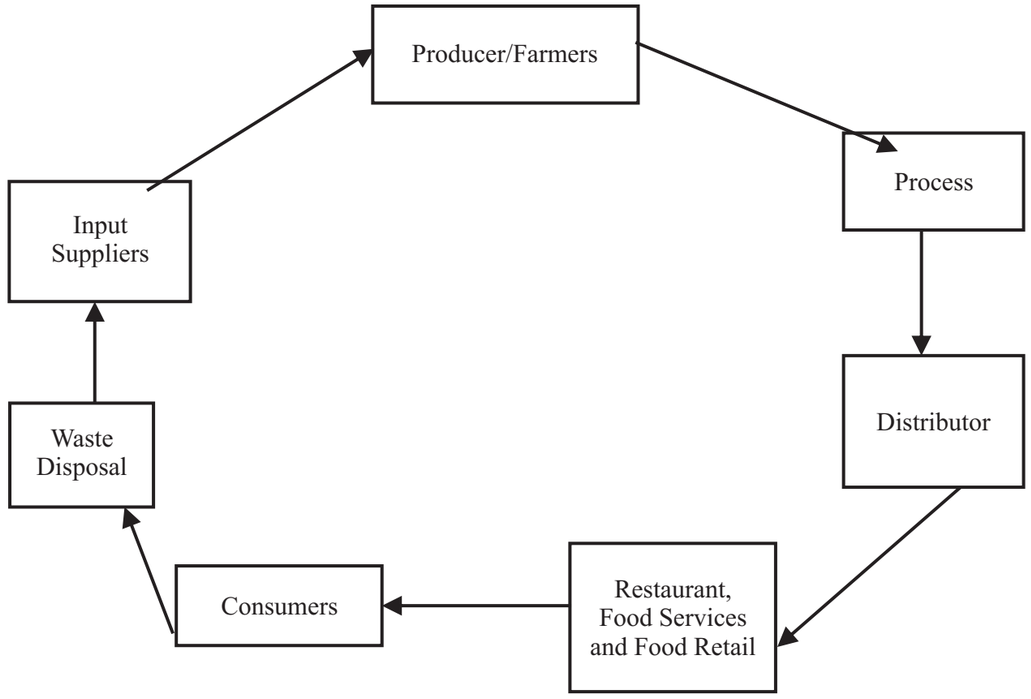

Figure 1: Components of a Food Value Chain.Source: Adapted from United States Department of Agriculture, USDA, 2014a.

In food value chain, farmers/producers are not in isolation or interchangeable suppliers of homogenous ingredients as they are in the traditional commodity supply chain (USDA, 2014a). Preferably they are strategically positioned in the chain and are deliberately designed to allow profit synergy between the farms, distributors and other actors involved in the chain. Each of the actors needs one another to be successful in the chain and deliver what the customer wants.

Agricultural food value chain

The Agriculture sector of the economy has been taunted as the next big thing in Nigeria regarding revenue generation in the wake of the oil dwindling prices. This sector has the potential of increasing the Gross Domestic Product (GDP) of the nation but has not been adequately harnessed for development and growth. Development of agricultural sector has a substantial impact on reducing poverty and enhancing food security (Kumar, Singh, Kumar &Mittal, 2011). Many agricultural development initiatives take the form of a value chain intervention through making upstream investments in primary production (Maestre, Poole & Henson, 2017). From the above diagram, the role of the farmers in assuring food safety and nutritious food cannot be overemphasised. The authors

reviewed literature in a few farms produce from different countries with similar products to Nigeria showing how food value chain can improve the agriculture sector thereby leading to economic development. These are:

Value chain in onion cultivation, example from Ethiopia

Research conducted by Daniels & Fors (2015) concluded the main reason for onions to go wrong is mainly rainfall and the not-edible onion peels. They also discovered that most losses appear at the last stage of the chain, i.e. at the consumer level where 36% of the total onion losses appear with retailers and 56% of all onion losses without retailers. They concluded that this is mostly due to inadequate onions mixed with good onions during the chain. However, this has not taken away the fact that a large percentage of onions go wrong in the food chain. Value can be added to these wastages in onion vinegar. Thiswas achieved with a two-step fermentation system at the research level. If scaled -up, the production of onion vinegar can open up another value addition in the onion cultivation chain. The onion waste peel is also of great value according to their findings. This can be useful as fuel for cooking stoves. According to Daniels & Fors (2015), this fuel can keep a stove burning for about 30 hours per farmer. Onion peels also have the potential of generating electricity according to their findings. There is a substantial economic value in which adequately harnessed can lead to economic development.

Value chain in vegetables in Cameroon

Bidogeza, Afari-Safa, Endamana, Tenkouano & Kane (2016) in their value chain study analysis of vegetables in the humid tropics of Cameroon which is similar to Nigeria discovered vegetable value chain is not organised with little value addition along the chain. Vegetable value chain has relatively simple five stakeholder groups: producers, transporters, traders, processors and exporters. It shows value chain addition is profitable for all actors in the production process. It was discovered in their study that irrespective of the vegetable produce, the actors make between 49%-52% income as compared with 20-23% from other food products. It shows that income from vegetable has surpassed the position traditionally held by expert crops, i.e. cocoa and coffee. This is because the actors in the value chain have mastered the act of improving the value addition of the vegetable to make maximum income available.This can undoubtedly lead to economic development.

Value chain in fish farming in Bangladesh

A study conducted by Nowsad (2016) titled supply and value chain of fish in super-shop outlets in Dhaka City discovered their value addition to fish farming could genuinely be of economic development to both the farmers and the nation at large. In the research, there is landing centre where fishes are accumulated from different harvesting sources. A reasonable portion of the fish is transported to the point of sale, i.e. the shops where it is made available to the consumers while others are sold directly to the customers from the landing centres. There are middlemen involved in the distribution of fish in Bangladesh which is considered significant in the value chain. The research also discovered through the fish products are transported, packaged and displayed well enough for customers, this has not translated into economic development for the farmers as they earn low income from the sale. The author is of the opinion that there are several possibilities regarding handling and processing of fish which could raise the cost of the products further. Value addition such as preservation of ice as soon as it is harvested should be encouraged. Others include adequate cooling throughout the distribution path and during selling. Further suggestions include proper handling/processing be done at the primary processing units. It was also reported that if the heads are removed, the fish will be in premium quality for long (Nowsad, 2016). Dressing and making fish ready to eat should also be encouraged as people are moving up on the social ladder. To cater for this new upcoming middle-class, the value can also be added in the form of a fish fillet, fish steaks in which parts of the fish are prepared and sold at significantly higher prices. In the area of processing and manufacturing, the value can be added in processing such as minced based products, canned fish, and ready to cook/bread-crumbed products.

Food value chain for nutrition

There is very little evidence on the role of value chains in improving nutrition. However, available literature recognises that agricultural and food policy is more likely to positively affect nutritional outcomes when the structure and functioning of the market are taken into account (Gelli *et al*., 2015). This means if value chain considers the structure and how the market functions, the nutrition of the consumers will be positively affected. Food value chain has been found to impact all the aspects of nutrition especially food, i.e. food production, food accessibility, food acceptability and the quality of foods Fanzo et al. (2017). Value chain has been found to have a significant advantage inagriculture in improving nutrition (Reul & Alderman, 2013).

The customer determines what the quality of food should be. What this implies is the term quality is defined by what the customer says it is (FAO, 2010). Therefore, one can conclude that safety is a component of quality but safety is the most essential component of quality because a lack of safety can result in severe injury and even death for the customer (FAO, 2010). With this understanding, in ensuring food safety in the food value chain, all actors involved in the chain must put safety as their watchword and adhere to best practices.

The ultimate goal of supply-side initiatives is to improve food availability at the household level and to increase household income (Fanzo et al, 2017). This is the purview of the actors in the value chain. The agriculture sector has been identified as a part in which nutrition can be included in the value chain. However, there are critical factors which limit the customer's access to nutritious food. These factors include, inadequate processing and handling techniques, inefficient harvesting methods, inadequate storage facilities and lack of nutrition knowledge on the part of the actors involved in the value chain (Fanzo *et al.*, 2017).

The adoption of value chain approaches can be an effective way to identify the causes of inadequate food availability, affordability and acceptability and also to implement practical solutions and create long-term sustainable benefits for nutrition (Hawkes & Ruel in Fanzo *et al*., 2017). For effective implementation and delivery, much of this adoption can occur through the agriculture sector. The following illustration shows nutritional opportunities in

value chain analysis.

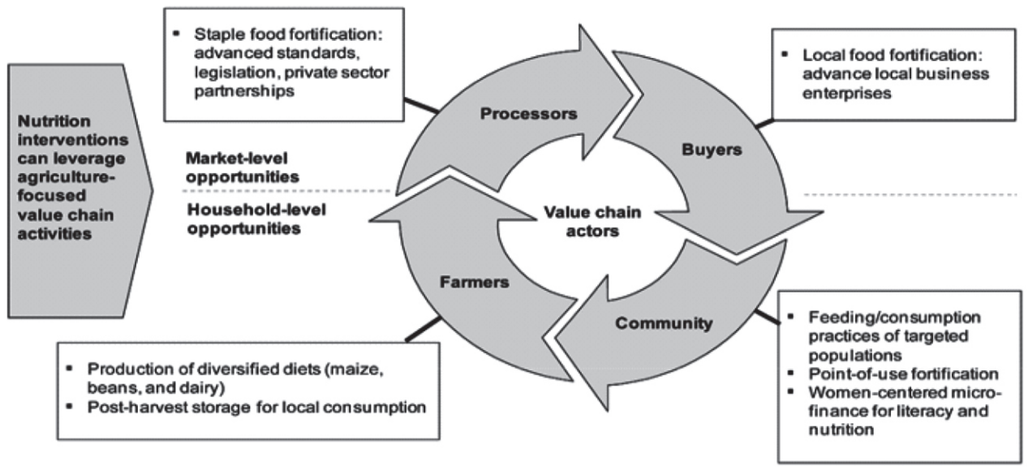

Figure 2: Illustration on nutritional opportunities in the value chain. Adapted from USAID Feed the Future, Rwanda, (2014b)

Nutrition can be incorporated in value chain at the two levels of opportunities as seen in the illustration above, i.e. Market-level which focuses on processors and commercial food buyers such as supermarket and Household-level which involves farmers and the community, i.e. customers. The farmers improve on their cultivation and farming by using improved and fortified seeds. These can be well procured through adequate collaboration with private sector. They can also improve on their post-harvest storage techniques to retain the nutritional content of the food products which may be lost due to improper post-harvest storage techniques. At this level, the farmers may decide to sell directly to the consumers or sell their nutritionally fortified produce to the processors at the Market-level. The processors which are often significant multinational commercial companies tend to fortify their product for maximum profits. They advance standards by working in an environment which maintains the nutritional status of the food or products. At this point, they also partner with the private sector in formulating standards which in most times are stringent than the government regulation. Another level in the value chain that can incorporate nutrition into its operation are the buyers. They are part of the Market-level which in some countries have been found to develop food concepts that are new to the customers. They often fortify their products for maximum profit. Feeding and consumption practices of these group are essential in demanding nutritious food from the value chain actors. Some of the food required by these group may be fortified at the point of use. Educating this group on demand for nutritious food is very important.

The above has therefore shown how nutrition opportunities arise in the value chain explaining how each of the value chain actors can incorporate nutrition into their operation. For practical implementation of standards, the government is always required to monitor and evaluate these processes through regulation.

Food value chain for food safety

Food safety in the value chain is critical either at the household-level or market-level. It assures the actors on the quality of the products they are getting. In the overall operation of the value chain, the safety of food cannot be ignored. Several methods are currently in use to assure of food safety in the value chain. These among others include Good Agricultural Practices (GAP), Good Manufacturing Practices (GMPs) and Hazard Analysis and Critical Control Points (HACCP).

HACCP was initially been developed for National Aeronautic and Space Administration (NASA) to ensure the safety of their missions in the 1960's. Since then, it has now been adopted worldwide for its approach in identifying all hazards, i.e. physical, chemical and biological parameters involved in food thereby making it safe for consumption (Somorin & Uko-Aviomoh, 2016). Nowadays, it is an acceptable method of assuring food safety in a full food production process (Bertoliniet al. cited in Somorin & Uko-Aviomoh, 2016). HACCP as a food safety measure is generally used by food producers who fall into the category of Market-level opportunities in the value chain.

The importance of HACCP in ensuring food safety cannot be overemphasized. As the food chain becomes an extensive global business, it is apparent to keep such foods safe for human consumption and economic development. This is because food hazards may come from the farmers (Household-level opportunities) due to poor handling and storage techniques or in the food industry (Market-level opportunities) or from poor temperature control and storage techniques at the buyers level to even errors at the preparation stage at the consumers (Cusato, Tavolaro, &de Oliveira, 2012).

Before HACCP principles can be applied in food production, prerequisite programs such as GMPs and GAPs must be establishedto ensure necessary hygiene conditions of the food production process. If these programs are implemented correctly, it will determine the principles for food safety thereby making HACCP efficient to manage (Wallace & Williams, 2001). The activities under the prerequisite programs include adequate water supply, pest control, sanitation of equipment and premises, instrument calibration, quality control of ingredients and raw materials, product recall

procedures and consumer complaint handling procedures (Culler & Conklin, 2015).

Good agricultural practices (GAP) and Good manufacturing practices (GMP)

GAP are practices that address economic, environmental and social sustainability of farm processes which result in safe and quality food (FAO, 2010). They are activities undertaken by farmers and producers to ensure the safety of farm produce for human consumption. GAP protocols were developed in response to increasing in the number of outbreaks of foodbornediseases resulting from contaminated fresh produce (University of Kentucky, UK, n.d.) and also growingconcerns about food safety and quality (FAO, 2007). This program set standard for workers hygiene, use of manure, water supply quality (Agricultural Alternatives, n.d.). The practices require an inspection from the government. This is a critical part of the value chain which will ensure adherence to standard and food safety. The inclusion of GAPs, GMPs and HACCP in agricultural practices and food production has long been identified as the first step in assuring the safety of food for customers. Though there are other international standards, farmers and producers can comply with, but integration in value chains depends mainly on the ability of the firm to upgrade its products, processes or functions and to comply with standards (Fromm & Dornberger, 2007).

Value chain and economic development

The economy of any nation cannot be developed in isolation of the citizens and the active workforce of such nation. The citizens must be seen as the driving force for economic development, demand improved nutritional composition of foods and also drive the farmers to improve their agricultural practices. When the farmers perceive themselves as an essential factor in the value chain and want to be competitive, then, economic development of such actors has begun. As value chain is being implemented by actors in the food chain, it helps in identifying points that should be modified for economic development. Targeting these points can reduce the likelihood that nutrients are lost or exit the value chain as enhance the nutritional value of specific nutrient-rich food (Fanzo et al., 2017). Food value chain is also essential during food processing as it helps in fortifying foods for the consumers. It raises awareness for educating the consumers to demand nutritious foods from the actors in the chain. When the actors in the chain have adequate knowledge and information on the application of food value chain analysis in their products, it leads to significant economic outcomes for all.

CONCLUSION

From reviewed literature and available facts, adequate value chain analysis can significantly improve the nutritional composition and economic outcomes of the chain actors. This has a lot to do with the customer demanding good nutritious and safe food from both the producers and the farmers. More so as the development of agriculture sector has been identified to reduce poverty and enhance food security, the addition of value in this sector cannot be overemphasized. Inmaking sure food is safe for the customer, all the actors involved in the chain must adopt safety measures which have been tested in many countries. The adoption of these practices will not only improve the safety of local products but will also improve the competitiveness of Nigerian products at the international level. These products will the attractive and create wealth along the chain just because internationally well-known practices are adopted. The action of the government in monitoring these practices should not be overlooked as it gives assurance to the products as well.

RECOMMENDATIONS

As it has been shown in this study, food value chain helps farmers increase their income generation potentials. It should also be noted that the demand for nutritional food falls on the consumers. With this understanding, the following recommendations are made:

* The value chain in agriculture will significantly be enhanced if farmers engage in post-harvest storage processes for local consumption and production of diversified diets for their consumers. The practice of seasonal farming should be discouraged as this can barely provide for local consumption let alone processors.

* For economic development to be fully achieved in food value chain, all actors in the chain should collaborate with one another. When farmers produce in line with the requirements of processors and buyers, the value of their products will be increased.
* Farmers should adopt best international practices in their actions. This will not only help in increasing their production but will also make them competitive. Adoptions of practices such as GAP, GMP and HACCP will go a long way in assuring farm produce for economic development.
* Nutrition education has been found to increase the demand for nutritious foods by the consumers. To this effect, avenues to educate consumers should be implemented. This includes schools, various association meetings and gatherings. This will increase the demand for nutritious foods thereby making the farmers take all actions needed to retain the nutritional contents of their produce.
* The government actions in food value chain cannot be overemphasised. Regular monitoring of adherence to best practices and regulations should be carried out periodically. This will make the actors in the chain mainlythe farmers, producers and the buyers provide nutritious food always which will not only improve the nutritional status of the consumers but also lead to economic development.

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BODY SHAPE PROFILING OF YOUNG FEMALE ADULTS IN SOUTH EASTERN NIGERIA: IMPLICATIONS FOR PRODUCT DEVELOPMENT

1Enete, O. N. and 2Anozie, Georgina O.
Home Science/Hospitality Management and Tourism
Michael Okpara University of Agriculture, Umudike,
Umuahia, Abia State, Nigeria
1onyekachinnenna@gmail.com and **2**geroginaoluchukwu@gmail.com

ABSTRACT
Profiling of body shapes in a given population is an important factor in garment design and sizing. This study focused on body shape profiling of young female adults in South Eastern Nigeria and its implications for maximizing inherent potentials in garment production. Specifically, the study determined the mean body measurements, correlated the body measurements and determined predominant body shapes. Sample size of 754 young female adults between the ages of 16-25 who are not pregnant or lactating was selected using purposive sampling technique. Data were gathered through anthropometric survey, using tailors measuring tape, 30 cm ruler and weighing balance. Descriptive statistics and Pearson's correlation were used for data analysis. The results showed that the mean body dimension had drop value between bust girth and waist girth as 16cm, age had mild relationships with bust girth (0.12), waist girth (0.27), hip girth (0.21) as well as height (-0.14); weight had strong relationships with the hip girth (0.85), bust girth (0.77), waist girth (0.75) while the predominant body shape was pear shape (hip/bust $\geq$ 1). These results have practical implications for clothing and textile entrepreneurs especially in designing garments and developing of a sizing system of young female adults for mass customisation.

Keywords: Body shapes, young female adults, product development, garment, South-Eastern Nigeria

INTRODUCTION
Garments are considered one of the basic needs of man and it falls under the physiological needs in Maslow's hierarchy of needs. Throughout most of human existence, garments were custom made from measurements taken from an intended wearer and fit to the individual's size and shape (Lee & Steen, 2010). With the advent of the industrial revolution, the form of ready-to-wear garments became a way to acquire one's garment (Iloeje & Anyakoha, 2010). According to Asdown (2014), the model for garment production used by garment industries in the world today is one, which make ready-made garments available off-the-rack in retail stores or shipped directly from a warehouse to the customer. This model of garment production and distribution can only be possible with the development of garment sizing systems.

The traditional apparel industry value chain segments stems from product design to manufacturing, marketing, securing clients distributing and finally, servicing. This makes product design the core in apparel industry value chain. Any problem with the product design creates problems for other segments. Furthermore, in apparel industry especially in the area of garment development, a sizing system plays a very important role. The goal of creating a garment sizing system is to find the optimum number of size groups, which will describe as many shapes and sizes encountered in the population as possible, in order to provide as many individuals as possible with a well- fitted garment, and also to allow the manufacturer to make a profit (Yu, 2004; Bougourd, 2007).

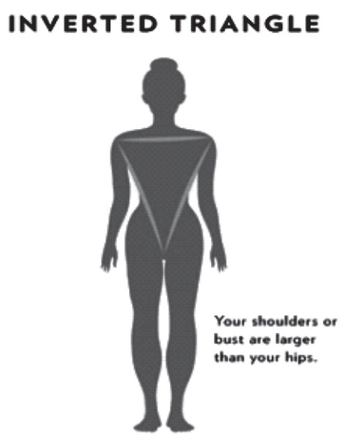
Profiling body shapes encountered in a population is very important in developing a sizing system. This is because female bodies come in different shapes and a simple measurement of circumferences cannot perfectly portray protrusions around the bust, abdomen, hips and buttocks (e.g. flatter or fuller buttocks) (Ashdown, 2014). Agbo and Igboli (2015) pointed out that a woman's skeletal structure, quantity and distribution of muscle and fat on the body sums up the female body shape.

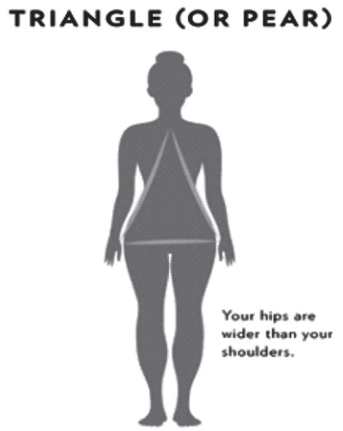
In Nigeria, however, the absence of an official national sizing system has resulted in the garment companies adopting or modifying size charts from different countries, most specifically United States of America and United Kingdom, creating variations in sizes resulting in garment fit problems. Currently in South-Eastern Nigeria, the ready to wear garments in the retail stores are produced based on the size charts obtained from anthropometric data of people in other countries and continents. Many consumers especially the young female adult consumers finds it difficult to obtain garments of good fit as relevant sizes are not adequately available.

Young adults are people in their late teens, and twenties; single, married, divorced, or widowed; and with or without children. At this developmental stage, growth takes place relating to height, mass, bodily proportions and the development of secondary sexual characteristics. Garment sizes for children may no longer fit these young female adults while the sizes and proportions of adult garments are also not suitable for them (Tselepis & Klerk, 2004). These young female adults are forced to either have alterations done on the ill-fitting garments, get custom made garments or simply wear ill-fitting garments. There is therefore a need to produce garments to suit this age group.

Since female body shapes vary, using simple averages to divide them into sizes evident in most published scholarly efforts of Nigerian researchers is quite unrealistic. To develop a good garment sizing system, body dimensions of the target population need to be taken to better understand the body shapes within the population. This is important as a particular sizing system cater for a particular body shape within the population (Gribbin, 2014).

The female body shape does not vary infinitely. The distinctions, differences and variations evident in female body shapes have been boiled down, by different collectors of statistics, to a small number of shapes within which all females, except very seriously abnormal ones, can be satisfactorily included. According to Collings (2016), most common female body shapes can be classifies into four groups. They include inverted triangle, rectangle, triangle (or pear) and hourglass shapes.





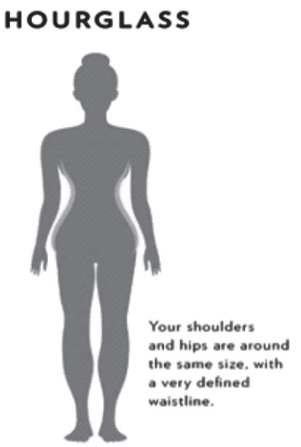


Figure 1: Four most common female body shapes Adopted from Collings, 2016)

The inverted triangle shaped females have broader shoulders and bust, and narrower hips while those that are banana shaped have waist measurement which is less than 9 inches smaller than the hip or bust measurement. To classify a female body into this shape, bust ÷ hips ≥ 1 (Collings, 2016). Garment designs which define the waist and flare over your hips is best for the body shape as it create the illusion of lower-body curves and will help balance out your broad shoulders.

Rectangular body shaped females have hips width similar with the shoulder width, do not have a lot of curves, bust tends to be small or average and bottom tends to be flat. To classify a female body into this shape, waist ÷ bust ≥ 0.7 (Collings, 2016). Garment design that is suitable for this body shape should create more curves and a pleasing silhouette by wearing garments that help define the waist and create curves on the bottom or top.

The pears shaped females' hip measurements are greater than their bust measurements while those Pears tend to store their weight on their thigh and their legs may be heavy. To classify a female body into this shape, hips ÷ bust ≥ 1 (Collings, 2016). Often this body shape has a very good upper body. Emphasis in dressing is on the upper side of the body. Forthe hourglass body, the hip and bust are almost of equal size, with a narrow waist. To classify a female body into this shape, waist ÷ bust ≤ 0.7 (Collings, 2016). Garment design for this body shape should accentuate this very feminine body so fitted clothes (at the right places) are key.

With increased awareness of e-commerce, ready-to-wear garment producers, importers as well as consumers face challenges of producing or ordering the right sizes for female users where the sizes and shapes or figures of the users in a particular locality are unknown. Although there is a published record of mean body measurements of female youths (15-24 years) in tertiary institutions in Enugu State (Iloeje & Anyakoha, 2009), there are no records of their body shapes. It therefore becomes pertinent to profile body shapes of young female adults in South Eastern Nigeria to provide information for individuals to be properly informed about their body shapes and also aid in developing garment sizing system which is crucial in garment design - the bedrock in the garment value chain.

Profiling of body shapes in a given population is an important factor in garment design and sizing. This study focused on body shape profiling of young female adults in south eastern Nigeria and its implications for maximizing inherent potentials in garment production.

Objective of the study

The purpose of this study was to profile the body shape of young female adults in south eastern Nigeria. Specifically, the study

1. Described body measurements of young female adults in South Eastern Nigeria
2. Correlated the body measurements of young female adults in South Eastern Nigeria, and
3. Determined the body shapes of young female adults in South Eastern Nigeria.

Research questions

1. How was the body measurements of young female adults in South Eastern Nigeria describe?
2. What is the relationship between body measurements of young female adults in South Eastern Nigeria?
3. What are the body shapes of young female adults in South Eastern Nigeria?

METHODOLOGY

Research design

The research design was quasi experimental design. This involved selecting groups upon which a variable was tested, without any random pre-selection processes.

Population of the study

The population for this study was all female undergraduates enrolled in federal universities in South Eastern Nigeria that offer Home Economics, Home Science or Home Economics Education, which was made of six thousand two hundred and ninety (6290) female undergraduates in University of Nigeria, Nsukka (Nsukka campus) and seven thousand and ten (7010) female undergraduates in Michael Okpara University of Agriculture, Umudike (MOUAU, Directorate of Academic Planning, 2015; UNN, Office of the Vice Chancellor, Academic Planning Unit, 2015). Totalling a population of thirteen thousand three hundred (13300) female undergraduates for the study.

Sample and sampling techniques

Purposive sampling technique was adopted in selecting young female adults who are not pregnant or lactating and are students in these institutions in South-Eastern Geopolitical zone of Nigeria and who voluntarily accepted to be part of the study. Taro Yamane formula in Uzoagulu (1998) for finite population was used to calculate the sample size for the study.

Taro Yamane formula, $n = \frac{N}{1 + N (e)\ 2}$ **where;**

n = the sample size
N = the finite population
e = level of significance
1 = unity (constant)

Using the formula above, the sample size for female undergraduates in MOUAU was three hundred and seventy-eight (378) while that of UNN was three hundred and seventy-six (376), giving a total of seven hundred and fifty four (754) female undergraduates for the study.

Instruments

The instruments for data collection were fabric measuring tape, manual measuring scale, 90 degrees angle ruler, biros, twisted acrylic thread and a 20-itemed body measurement chart consisting of 17 body measurements necessary for drafting basic blocks with age, weight and height.

Methods of data collection and data analysis

With the help of four research assistants, the young female adult's measurements were taken in the student's hostels: within the campus, private hostels outside the campus, enclosed areas around lecture halls and laboratory. The privacy of subjects were considered. The fabric measuring tape was used to take the body measurements and a manual scale was used for weight measurement. White plain sheets were adhered on the wall to cover seven feet (7ft) high and two feet (2ft) wide. This and a 90 degrees angle ruler were used as the stadiometer to measure height. All measurements were taken on level, non-carpeted floor for optimum accuracy. For major girth measurements, a length of twisted acrylic thread was tied to locate the body landmarks correctly. Each pair of research assistants was provided with Body Measurement Chart (BMC) to record the measurements. The body measurements were described using means, mode, standard deviation and Pearson's correlation coefficient while the body shapes were analysed using Collings (2016) method of grouping body measurements into four major body shapes.

RESULTS

The results for the study are discussed based on research questions.

RESEARCH QUESTION 1: How was the body measurements of respondents in South Eastern Nigeria describe?

Table I: Descriptive statistics of body dimensions of respondents

S/No	Dimensions (cm)	Mean	Mode	Standard Deviation	Minimum	Maximum
1	Neck Girth	33.37	33.00	1.82	29.50	39.50
2	Shoulder Width	37.92	38.00	2.62	32.00	46.00
3	Back Width	35.78	34.00a	2.62	30.00	44.00
4	Syce Depth	15.07	15.00	1.43	11.00	19.00
5	Nape to Waist Back	35.39	35.00a	2.22	25.00	43.00
6	Arm Length	63.38	63.00	2.70	58.00	69.50
7	Wrist Girth	16.56	16.00	.92	14.50	19.20
8	Bust Girth	90.37	85.00a	6.40	76.00	119.00
9	Waist Girth	74.06	72.00a	6.49	62.00	94.50
10	Hip Girth	98.57	98.00	7.61	84.70	117.50
11	Waist to Hip	25.12	25.00	2.70	19.00	33.00
12	Thigh Girth	57.56	60.00	5.65	42.50	73.50
13	Knee Girth	39.55	38.00	3.84	32.20	53.50
14	Ankle Girth	26.83	27.00	1.94	20.80	35.40
15	Height	166.28	163.00	6.06	144.00	184.10
16	Waist Height	107.08	106.00	4.68	95.70	126.50
17	Hip Height	86.17	85.00	5.17	72.00	108.30
18	Knee Height	48.34	46.00	3.63	37.20	64.20

n = 754
a = Multiple mode exist. The smallest value is shown

Table I shows the descriptive statistics of the body dimensions. In the table, the body dimensions of respondents were analysed under mean, mode and standard deviation. The analysis showed that the dimension with the highest deviation was cervical height with standard deviation of 8.26 while the dimension with the least deviation is the ankle height with standard deviation of 0.40. The mean values for shoulder length, neck shoulder to waist, arm length, bust girth, waist girth, hip girth and height were 11.74, 38.78, 63.41, 90.31, 74.06, 98.57 and 166.25 respectively. The mean bust, waist and hip measurements of young female adults in south eastern Nigeria is wider than that obtained in UK size 12, which all grading normally start from. This therefore indicates that there is need to developa garment sizing system that will be tailored to the body dimensions of this target group so as to achieve proper fit and reduce returns.

Research question 2: What is the relationship between body measurements of respondents in South Eastern Nigeria?

Table II: Correlation of body dimensions for respondents (n=754)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																			
0.15	1																		
0.14	0.59	1																	
-0.10	0.29	0.24	1																
0.13	0.50	0.43	0.54	1															
0.12	0.33	0.28	0.27	0.17	1														
0.04	0.12	0.15	0.02	0.02	0.49	1													
-0.08	0.25	0.21	0.21	0.05	0.27	0.31	1												
0.10	0.65	0.47	0.36	0.42	0.29	0.11	0.19	1											
0.12	**0.77**	0.52	0.25	0.56	0.27	0.01	0.15	0.61	1										
0.27	**0.75**	0.58	0.26	0.55	0.22	-0.03	0.09	0.54	**0.76**	1									
0.21	**0.85**	0.54	0.25	0.47	0.35	0.09	0.09	0.60	**0.74**	**0.73**	1								
0.10	0.33	0.16	0.27	0.29	0.26	0.12	0.13	0.28	0.22	0.20	0.37	1							
0.18	**0.83**	0.58	0.22	0.47	0.31	0.10	0.07	0.58	**0.74**	**0.73**	**0.90**	0.39	1						
0.16	**0.70**	0.45	0.25	0.34	0.29	0.10	0.08	0.54	0.60	0.59	**0.74**	0.25	**0.70**	1					
0.11	0.45	0.31	0.23	0.26	0.25	0.18	0.24	0.46	0.36	0.33	0.46	0.21	0.36	0.52	1				
-0.14	0.28	0.19	0.34	0.16	0.32	0.36	0.66	0.27	0.18	0.07	0.12	0.23	0.10	0.11	0.26	1			
-0.15	0.21	0.10	0.22	0.05	0.22	0.13	0.56	0.13	0.11	0.08	0.08	0.19	0.07	0.03	0.18	**0.80**	1		
-0.02	0.17	0.13	0.15	0.11	0.25	0.16	0.52	0.11	0.09	0.06	0.03	-0.06	0.03	-0.01	0.10	0.58	0.61	1	
-0.08	0.13	0.06	0.27	0.11	0.30	0.30	0.44	0.04	0.07	0.03	0.02	0.20	0.02	0.00	0.06	0.59	0.49	0.45	1

Correlation: < 0.38 = weak, 0.39-0.53 = mild; 0.54–0.69 = moderate; 0.70–0.85 = strong; > 0.85= very strong

Table II shows the Pearson's correlation coefficients of selected body dimensions of respondents. A correlation of selected body parts as shown in table 2 revealed that age had weak relationship with all the body measurements necessary for drafting as well as the height and weight measures. It as well showed that weight had strong positive relationships with the hip girth (0.85), thigh girth (0.83), bust girth (0.77), waist girth (0.75) and knee girth (0.70). While height, it had strong positive relationship with the waist height (0.8) but a weak positive relationship the nape to waist length. This result shows almost the same trend as other studies, that girth dimensions are strongly correlated with each other and with weight but does not agree totally with length dimensions are correlated to each other and height as reported by Chung Lin, Mao and Wang (2007) and Zakaria and Gupta (2014). This difference might be as a result of socio-cultural and geographical factors effect on body shapes, sizes and proportions. And this indicates that garments remain a culture-bound product group and therefore demands the use of different garment sizing system for different countries to sustain global trade (Adu-Boakye, Power, Wallace & Chen, 2012).

Research question 3: What are the body shapes of respondents in South-Eastern Nigeria?

Table III: Body shapes of respondents in South-Eastern Nigeria

S/N	Body shapes	Frequency (f)	Percentage (%)
1	Inverted triangle	33	4.4
2	Rectangle	6	0.8
3	Pear shape	715	94.8
4	Hourglass	0	0.0
	Total	**754**	**100**

Table III shows results for third research question of this study was to find out the body shapes of respondents in South-Eastern Nigeria, which revealed that predominantly the young female adults were pear-shaped (94.8%) followed by the inverted triangle category with 4.4% and the rectangle category with 0.8% while none were categorised in the hourglass category. This predominance is also seen in Agbo and Igboli (2015) which had an average of 33.3% of adult females in various ethnic groups in Benue state in Nigeria to fall within this pear shape category. It is therefore advised that young female adults focus their attention on the upper half of their pear-shaped body by choosing slim, fitted tops, button-down shirts and cardigans; shirts and dresses with embellished necklines; layered garments; go for A-line dresses and tops as it emphasizes the upper body while slimming wider hips characteristic of a pear-shaped body; keep the hems of pants, skirts and dresses wide to visually balance a pear-shaped body.; wear pointy-toed shoes with a wide-hemmed pants to elongate your legs and avoid flashy embellishments like cargo pants and dresses with high neckline (Bustamante, 2016).

CONCLUSION

This study has shown that are differences with the body measurements of young female adults and the size charts that the garment industries in Nigeria have being adapting to produce garments for this target group. It is then pertinent that garment manufacturers and entrepreneurs should further conduct a proper anthropometric survey and develop an appropriate garment sizing system so as to help garment manufacturers to achieve efficiencies in the product development cycle with consequent environmental and cost benefits (fewer samples, fewer fit sessions, lower fit model costs and a reduction in staff time for processing and managing sample approval); improving the overall level of quality control (due to physical mannequin provision); improve margins due to reduced returns and better sell- through rates/lower markdowns.

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COPING STRATEGIES ADOPTED BY WORKING MOTHERS IN FEEDING THEIR FAMILIES

***Ejinkeonye, U. B. ** Chukwuone, C. A.and *Okonkwo, I. N.**

*Department of Home Science/Hospitality Management and Tourism
College of Applied Food Science & Tourism
Michael Okpara University of Agriculture
Umudike, Abia State.

**Department of Home Economics/Hospitality Management Education
Faculty of Vocational and Technical Education, University of Nigeria,
Nsukka, Enugu State
Corresponding Author: ejimsuju@gmail.com

ABSTRACT
The study investigated the strategies adopted by working mothers in feeding their families. The study adopted survey research design. The area of the study was Michael Okpara University of Agriculture, Umudike. Two hundred (200) mothers were randomly selected from the working mother in the university. One research question and hypothesis were formulated for the study. Questionnaire was used for data collection, which was validated by five lecturers from the Department of Home Economics/Hospitality Management and Tourism of Michael Okpara University of Agriculture, Umudike. The research questions were analysed using mean while ANOVA was used to analyse the hypothesis.
The findings revealed that coping strategies adopted includepreparing breakfast before going for work (mean = 3.70),serving the breakfast in the morning (mean = 3.62), engage children in washing family plates and cooking utensils (mean = 3.42), mothers take responsibility of buying food items by themselves (mean = 3.42), cook different kinds of food and keep inside refrigerator for easy access (mean = 3.35), and share the household chores among younger children in the home (mean = 3.27). There were significant differences in adoption of cooking different kinds of food and keep inside refrigerator for easy access among the different family types. This strategy was adopted most by blended family (mean = 3.75) and least by single parent family (mean = 2.62). To play their dual roles effectively, working mothers should be encouraged to adopt the use of work simplification devices.

Key words: Feeding, working mothers, University, Families, Strategies

INTRODUCTION
Food is one of basic need of man. Food supplies the body with energy, provides materials for growth and repair of the body, protects the body from diseases and regulates body processes (Anyakoha, 2015).Mothers help in food preparation and services in the family. Mothers are women who give birth or who has responsibility of physical and emotional care for specific children. The role of the mothers include childbearing, food preparation, house care, family clothing, educating the children, model, care for family members e.t.c. (Anyakoha, 2006). Traditionally, family roles are changing; women are turned out in large numbers in the workforce due to economic necessity.
Some mothers are on employment. Working mothers (mothers on employment) are women who work outside the home for income and in addition to the responsibility of raising the children and members of the family (Smith, 2008; Hodges, 2010). Maternal inspiration and the necessities of daily life compel mothers to work, maintain an effective career, and be financially independent, and also contribute to financial demand of the family (Hoschild & Machung, 2012).

The attitude of employers towards working mothers seems to be that mothers are not allowed to compromise on home life. Working mothers spend most of their time and energies in places where they are employed. In most cases because of their non-availability, working mothers employ house helps or nannies to assist in taking care of their children (Ering, Akpan &Emma-Echiegu, 2014).Working mothers face many challenges in balancing the family life. Working mothers are daily faced with dual roles of raising families and working for income in other to support their families. It is not really easy to cope with their pressure of high stress job and demands of feeding the family members.

Working mothers today in many field endeavors are faced with the demand of balancing motherhood and professional advancement. They struggle with the two contradictory forces. They need economic independence, at the same time, want to be with their children (Binanchi, 2009). Working mothers do face some common difficulties that are inevitable and unavoidable that needs management. Management can be defined as the activity of controlling and organizing the work that a company or organization does. It can be defined as a way people control and organized different situation that happen in their lives or their work. Management is the act of creating an environment in which people could perform as individuals and yet co-operate towards the attainment of group goals (Adesina, 2007).Management is needed in different settings, especially in the home.

Home management is the process of using the family resources to meet the family needs or goals. Good management of the family resources leads to the improvement of the quality of living within the family, and the happiness in the home. Steps in home management process includes, planning, organizing, implementing and evaluation (Anyakoha, 2006). Home management is a process of decision making and careful utilization of family resources to meet the family needs and achieved goals (West African Examination Council (WAEC), (2008). Some working mothers allow nannies, servants or house maid to help them in childcare and household chores, especially when they are not around in the home. The result of using nannies, servants or housemaid to rise up the kids may affect the child wellbeing (Aderson, 2005). The mothers have to care for the family feeding which is one of the basic needs for life. The working mothers also have career challenges which include that most employers do not allow paid off for mothers to attend to family matters during working hours (Dubeck, 2005). In Michael Okpara University of Agriculture, as in many other establishments, working mothers are not allowed to go home until work closure.
Therefore, the need to investigate the coping strategies adopted by working mothers in feeding their family.

Purpose of the study
The main objective of the study is to investigate the coping strategies adopted by working mothers in feeding their family.

Hypothesis.
There is no significant difference between the mean responses of working mothers from different families on thestrategies adopted for coping with feeding the family.

METHODOLOGY
The study adopted descriptive survey research design. The area of the study was Michael Okpara University of Agriculture, Umudike. The population consists all the working mothers in Michael Okpara University of Agriculture, Umudike, Umuahia in Abia State which is two thousand (2,000) people.(Source: Personnel Unit, Michael Okpara University of Agriculture, Umudike.) At Michael Okpara University of Agriculture, Umudike, there are eleven Colleges, and nine sub-sections that are not under the colleges making a total of 20 sections in the University. Simple random sampling technique was used to select 10 women from each section to participate in the study making 200

working mothers in Michael Okpara University of Agriculture, Umudike, which is 10% of the population.Instrument for data collection is a structured questionnaire. The draft questionnaire was subjected to face validation by five lecturers from the Department of Home Economics/Hospitality Management &Tourism. The lecturers were required to modify and restructure the questions and suggest other necessary items that were omitted based on the purpose of the study. Their inputs were used in making necessary adjustment in the instrument. A pilot test technique was used to determine the reliability of the instrument. Ten (10) copies instrument was distributed to 10 working mothers in Abia State University, Umuahia Campus. The questionnaire was administered to the working mothers on a Monday, which is the first day of the week (it is assumed that the entire worker are mostly present on Mondays) in their offices/duty post, with the help of one research assistant by hand and collected on the spot. Those who could not fill immediately were revisited for collection.In analyzing the data collected, frequency counts, percentage, means, standard deviation, and ANOVA were used. The hypothesis was tested at 0.05 level of significant, using SPSS Version 18.

RESULTS AND DISCUSSION
Table I: Strategies adopted by working mothers in coping with feeding the family

S/N	ITEM	Mean	SD ()	Remarks
1.	Prepare breakfast before leaving for work	3.70	0.56	Agree
2	Serve the breakfast in the morning	3.62	0.69	Agree
3	Engage children in washing family plates and cooking utensils	3.42	0.72	Agree
4	I take responsibility of buying food items by myself	3.42	0.73	Agree
5	Cook different kinds of food and keep inside refrigerator for easy access	3.35	0.77	Agree
6	Feeding the family members before leaving for work	3.31	0.97	Agree
7	Allocating time to some duties and adhering to it	3.31	0.85	Agree
8	Share the household chores to younger children in the home	3.27	0.83	Agree
9	Share the household chores among the members of the family	3.13	0.84	Agree
10	Tidy up the surface and cooking utensil after cooking	3.03	1.03	Agree
11	Keep food for my husband in the food flask before leaving for the work	3.00	1.02	Agree
12	Prepare lunch before leaving for work	2.80	1.04	Agree
13	Instruct family members to cook and serve themselves	2.59	0.85	Agree
14	I did the food management activities alone	2.42	1.03	Disagree
15	Family member buy food from the market	2.27	1.09	Disagree
16	Instruct the house help to prepare the breakfast and serve	2.01	1.18	Disagree
17	Instruct anybody to buy food items	1.93	1.01	Disagree
18	Nanny or housemaid take responsibility of feeding the family	1.89	1.06	Disagree
19	Nanny feed my children for me	1.86	1.06	Disagree
20	Buy food from the restaurant for my family members to eat instead of cooking food	1.62	1.06	Disagree
21	Family members buy food from the restaurant and eat	1.58	0.83	Disagree

Table I shows mean responses on strategies adopted in coping with feeding the family, the result shows that most of the respondents with the mean 3.70, 3.62, 3.31, 2.59, 3.42, 3.27, 3.13, 3.00, 3.35, 3.31, 3.42, and 3.03 agreed on strategies adopted in coping with family feeding while few respondents with the mean 2.01, 1.86, 2.27, 1.58, 1.62, 2.43, 1.89 and 1.93 disagreed on the strategies adopted in coping with feeding the family.

Table II: ANOVA results of difference in the mean responses on strategies adopted in coping with feeding the family.

S/N	Item	X_1	X_2	X_3	X_4	X_5	F Ratio	Sig	Remark
1.	Prepare breakfast before leaving for work	3.70	3.81	3.50	3.50	4.00	0.92	0.46	N.S
2	Prepare lunch before leaving for work	2.78	2.81	2.80	3.00	4.00	0.38	0.82	N.S
3	Serve the breakfast in the morning	3.64	3.57	3.44	3.50	4.00	0.44	0.78	N.S
4	Instruct the house help to prepare the breakfast and serve	1.96	2.19	2.18	2.00	3.09	0.45	0.77	N.S
5	Feeding the family members before leaving for work	3.37	3.10	2.93	3.50	4.00	1.11	0.35	N.S
6	Nanny feed my children for me	1.88	2.00	1.50	2.00	1.0	0.75	0.56	N.S
7	Instruct family members to cook and serve themselves	2.60	2.57	2.50	3.00	3.00	.034	0.85	N.S
8	Family member buy food from the market	2.21	2.48	2.44	2.75	2.00	0.58	0.68	N.S
9	Family members buy food from the restaurant and eat	1.57	1.57	1.75	1.75	1.00	0.33	0.85	N.S
10	Buy food from the restaurant for my family members to eat instead of cooking food	1.66	1.38	1.37	2.50	2.00	1.25	0.29	N.S
11	Engage children in washing family plates and cooking utensils	3.46	3.42	3.18	3.25	3.00	0.63	0.64	N.S
12	Share the household chores to younger children in the home	3.34	3.10	2.94	2.50	4.00	2.31	0.06	N.S
13	Share the household chores among the members of the family	3.19	2.76	3.13	2.75	3.00	1.41	0.23	N.S
14	I did the home management activities alone	2.50	2.28	2.25	3.00	3.00	0.72	0.58	N.S
15	Keep food for my husband in the food flask before leaving for the work	2.98	3.05	3.06	3.75	1.00	1.55	0.19	N.S
16	Cook different kinds of food and keep inside refrigerator for easy access	3.39	3.57	2.69	3.75	3.00	4.02	0.00	Sign
17	Allocating time to some duties and adhering to it	3.37	3.19	2.87	3.50	3.00	1.40	0.24	N.S
18	Nanny or housemaid take responsibility of feeding the family	1.95	1.76	1.63	1.75	2.00	0.46	0.77	N.S
19	I take responsibility of buying food items by myself	3.46	3.19	3.38	3.50	2.00	1.63	0.17	N.S
20	Tidy up the surface and cooking utensil after cooking	2.95	3.52	3.00	3.50	3.00	1.66	0.16	N.S
21	Instruct anybody to buy food items	1.97	1.90	1.63	2.00	1.00	0.64	0.63	N.S

X_1 = mean of monogamy family, X_2 = mean of polygamy family, X_3 = mean of single parent family, X_4 = mean of Blended family and X_5 = mean of Adopted family

The result in Table II revealed that in item 1, item 2, then 3,4,item 5,6,7,8, item 9, time 10,11,12,13,14,15, item 17,item 18, item 19, item 20, item 21, there is no significant difference to compare with item 16 on mean respondents of coping strategies adopted in coping with feeding the family. This implies that all the different families cook different kinds of food in bulk and keep refrigerator for easy access, but there is significant difference in their mean responses. The mean response of blended family is the highest (X4 = 3.75) while the mean responses of single parent families is the lowest (X3 = 2.69) among all the families. It might be because blended families has more people and more demands of the mother's resources (time and Energy) then the single parent families.

The findings of the study revealed that most of the working mothers agreed on strategies working mothers should adopt in coping with family feeding while few of the respondents disagreed on mean responses on strategies adopted in coping with the feeding the family. The mothers do the following before leaving for work: prepare breakfast and serve, prepare lunch and feed the family members. This is supported by Aderson (2005) that working mothers perform multiple works at home before leaving for work.

The findings of the study revealed that, working mothers cook foods and serve foods before leaving for work working, which is supported by Yantzi and Rosenberg (2007) who advised mothers to make proper planning of a good adequate nutritious meal for the members of the family and make menu plan of how to prepare the meals and serve the members of the family before leaving for work. While Binanchi (2009) commended that sometimes preparation of family breakfast, serve all the members of the family affect working mothers because of children likes and dislikes in the home and nutritional requirement may be neglected in quest to complete and to meet all targets at home as well as at the place of work.

The findings also revealed that working mothers instruct family members to cook and serve themselves, engage children in washing family plates and cooking utensils and do share household chores to younger children in the house. This is supported by Center for parenting education (2017) which noted that those children who do have a set of chores have higher self-esteem, are more responsible, and are better able to deal with frustration and delay gratification.

The findings revealed that working mothers do cook different kind of food and keep inside refrigerators for easy access, and keep food for their husbands in the food flask before going for work. This is in agreement with Wentworth (2006), who advised working mother to cook food in large quality and put in freezer or refrigerator, so that anyone who want to eat can just go and collect the one she or he wants and just warm in the absence of the mother, in a situation where the husband cannot warm the food, the working mother can warm the food and put the food in a food flask before going to work.

CONCLUSION AND RECOMMENDATIONS

Working mothers are daily faced with a lot of problems both in their place of work, at their various homes, community or society at large. It is very difficult for working mothers to finish all the home management activities in the home and still meet up with their official duties or work. For working mothers to meet up with their official duties and home activities, steps in home management process which includes adequate planning, organizing, implementing and controlling, evaluation, and adequate use of time management should take place.

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

1. There should be enlightenment campaign for women/girls on the use of work simplification techniques through seminars, workshops, conferences, women meetings, village meetings and religious groups. This will help them to learn and improve their ways of managing their energy and time.
2. Working women should know that they have their dual roles, and each role must be taken care of like feeding of the family members.
3. They can allow other members of the family especially the adults' one to help in cooking and severing meals to other family members.
4. Working mothers should employ nannies, or house helps, who will be helping them in doing \ some household chores like cooking.

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ASSESSMENT OF MEAN BODY MEASUREMENTS FOR DEVELOPMENT OF BLOCK PATTERNS FOR SELECTED PRESCHOOL CHILDREN IN ABIA STATE.

***Ekumankama, Ijeoma-Oji Onu and **Igbo, Chinyere Anne**

*Department of Home Science / Hospitality Management and Tourism,
Michael Okpara University of Agriculture, Umudike, Abia State.
ijekumankama@yahoo.com

**Department of Home Economics and Hospitality Management Education
University of Nigeria, Nsukka.

ABSTRACT

The study established the mean body measurements of preschool children (2 to 5 years) in private and public schools in Abia State. The research design was a survey design. The sampleconsisted of 928 preschool children who were randomly selected from the population. The research instrument was a Body Measurement Chart (BMC). Data obtained on the measurement of the preschool children (2 to 5 years) in private and public schools were analyzed using means, standard deviation, and student t-test. Results on the comparison of the mean body measurements of the preschool children (2 to 5 years) in private and public schools showed that the differences in the mean body measurements of the subjects were significant (at 0.05 probability level) in most of the body parts that were measured for ages 3 and 5.However, non- significant differences were obtained in the mean body measurements of the subjects in most of the body parts that were measured for ages 2 and 4. Therefore, the null hypothesis was rejected (at 0.05 probability level) for variables with significant values and accepted for variables with comparable values. The mean body measurements established in this study were recommended for use as anthropometric data that can be useful in evaluating the nutritional and growth status of preschool children in private and public schools in Abia State, Nigeria.

Key words: Mean, body, measurements, preschool, children.

INTRODUCTION

Clothes are specifically designed to meet the special needs of children. Presently, children's wear is a separate and very important part of the clothing industry. The preschool years are between the ages of two (2) to five (5) years. It is an exciting and active period for young children. Research findings revealed that the preschool period is the period children develop fastest (Duncan, 2004; Papalia, Olds & Feldman, 2002; Simplicity Pattern, 2004).Garments for children can be manufactured as made- to-measure (custom-made) or ready -to- wear. They can be made with patterns. A pattern is a piece of paper, drafted and cut to size and shape which is used for sewing dresses. A designer uses a foundation pattern (block pattern) as a basis for making the pattern for a design (style pattern). Successful blocks can only be drafted if the personal measurements are taken accurately in the correct positions of the body (Duncan, 2004; Hosegood, 2006; Igbo & Iloeje, 2012).

Personal measurements refer to the body measurements needed for drafting the blocks for individual figures. Components of personal or body measurements required for drafting the blocks include, chest/bust, waist, hip/seat, across back/back width, neck size, shoulder, upper arm/biceps, wrist, scye depth, neck to waist/back waist length, waist to hip, cervical height, waist to knee, body rise/crotch, inside leg, sleeve length, head circumference, vertical trunk, leg base, foot, skirt length and trouser length. Accurate personal measurements are required for drafting patterns for constructing perfectly

fitted garments. Patterns for preschool children can be produced from the basic blocks namely front bodice, back bodice, front skirt, back skirt, sleeve, front trouser, and back trouser blocks. The use of patterns have been shown to facilitate large scale garment production (Aldrich, 1999; Cock, 2003; Duncan, 2004;; Igbo & Iloeje, 2012Simplicity Pattern, 2004).

Prior to the introduction of the Structural Adjustment Programme (SAP) by the Federal Government in July, 1986, commercial patterns were imported into Nigeria. However, with the introduction of SAP, government banned the importation of some textiles, ready-to wear clothes, second-handed clothes and commercial patterns in a bid to conserve foreign exchange as well as promote economic self-reliance. Commercial patterns which are important in large scale production of clothes are usually unavailable in the country. Even where they are available, the patterns are very expensive (Olori, 2005; Ugwoke, 2005).

However, Aldrich (1999) explained the age alone is an unreliable guide to garment fit as children's stature in relation to age is very variable. It is no wonder that Ekumankama and Igbo (2007) observed that commercial patterns that are produced from standardized body measurements of individuals in the Western World do not fit Africans accurately as a result of the difference in body structure. The authors opined that a conclusive study on standard body measurement of Nigerians that can be used in drafting patterns is not available.Research reports reveal that children in their rapid growth stage and growth patterns have been shown to differ from one locality to another (Papalia, Olds & Feldman, 2002; Santrock, 2005;WHO, 2000). Therefore, a comparative study on the establishment of mean body measurements for development of block patterns for constructing perfectly fitted garments of preschool children in private and public schools in Abia State was necessary. This is a measure towards meeting the clothing needs of Nigerian preschool children.

Objectives of the Study

The general objective of the study was to compare the mean body measurements of preschool children in private and public schools in Abia State.

Specifically, the study

1. took body measurements of preschool children of ages (2 to 5 years) in private and public schools in Abia State.
2. compared the mean body measurements of the preschool children in private and public schools in Abia State for age 2 years.
3. assessed the mean body measurements of the preschool children in private and public schools in Abia State for age 3 years.
4. determined the mean body measurements of the preschool children in private and public schools in Abia State for age 4 years.
5. assessed the mean body measurements of the preschool children in private and public schools in Abia State for age 5 years.

Research questions

1. What are the mean body measurements of preschool children of ages (2 to 5 years) in private and public schools in Abia State?
2. What are the differences between the mean body measurements of the preschool children in private and public schools in Abia State for age 2 years?
3. What are the differences between the mean body measurements of the preschool children in

private and public schools in Abia State for age 3 years?

4. What are the differences between the mean body measurements of the preschool children in private and public schools in Abia State for age 4 years?
5. What are the differences between the mean body measurements of the preschool children in private and public schools in Abia State for age 5 years?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There are no significant differences in the mean body measurements of the different parts of the body for preschool children (2years) in private and public schools in Abia State.
2. There are no significant differences in the mean body measurements of the different parts of the body for preschool children (3 years) in private and public schools in Abia State.
3. There are no significant differences in the mean body measurements of the different parts of the body for preschool children (4 years) in private and public schools in Abia State.
4. There are no significant differences in the mean body measurements of the different parts of the body for preschool children (5 years) in private and public schools in Abia State.

METHODOLOGY

Area of the study

The study was carried out in Abia State. The study was carried out in Abia State, Nigeria. Abia State is located in Eastern part of Nigeria. It is bounded in the south by Rivers State, South- East by Akwa-Ibom sharing boundary with Cross River State in the North- East while in the West and South, it shares boundaries with Imo, Anambra and Ebonyi respectively. It is made up of seventeen local government areas. Administratively, preschools and primary schools in the state are zoned under Umuahia, Aba and Ohafia. The Abia State Universal Basic Education Board (ASUBEB) takes charge of the pre-primary and primary schools in the seventeen local governments in Abia State, Nigeria.

The design and procedure for the study:

It was a survey design. The procedure for the study involved the following:

i. obtaining a sample of the preschool children (2 to 5 years) for measure.
ii. taking body measurement at 21 designated parts of the body of preschool children (2 to 5 years).
iii. Obtaining average body measurements of parts of the body measured.

Population for the study

The population for the study comprised the entire preschool children (males and females) (2 to 5 years) in one thousand and two (public and private) schools in Abia State. Information on the statistical data on school enrolment in Abia State was collected from the Abia State Universal Basic Education Board (ASUBEB). The registered private pre-schools were two hundred and twenty two (222) in number with the population of twenty two thousand one hundred and forty nine children (22,149) children. The public school classes were seven hundred and eighty (780) in number with a population of twenty- two thousand, seven hundred and sixteen (22,716) children. This gave a total of forty-four thousand, eight hundred and sixty five (44, 865) preschool children in Abia State.

Sample for the study
Multistage sampling procedure was used in selecting the sample for the study. Administratively, preschools and primary schools in the State are zoned under Umuahia, Aba and Ohafia. Two zones (out of the three zones) namely Umuahia and Aba were randomly selected for the study.

The first stage involved the selection of four local governments for the study. Sampling frame was drawn from the list of seventeen local governments in Abia State. Numbers were assigned to them for random selection of four local governments which were used for the study. One local government in the urban was chosen in each zone while a local government in the rural was also selected in each zone. A private and a public preschool was studied in each of the urban and rural preschool. Fifty percent of preschool children were randomly selected from each school. Two private and two public schools were selected in each zone while eight schools were used for the study. A Simple random technique was used in selecting the children in order to ensure that every child had equal chance of being selected. Altogether, 928 preschool children (males and females) were used as the sample size. The sample size was considered adequate owing to the fact that the population was homogenous.

Instrument for data collection
The research instrument was a Body Measurement Chart (BMC) developed by the researcher on essential body measurements needed for drafting flat patterns and constructing garments for accurate fit. The researcher developed the instrument through a review of literature. The form was developed to collect information in the following aspects: age, location of school, Local Government Area, including twenty-one different body parts to be measured namely height, chest/bust, waist, hip/seat, across back/back width, neck size, shoulder, upper arm, wrist, scye depth, neck to waist, waist to hip, cervical height, waist to knee, body rise, crotch depth, inside leg, sleeve length, head circumference, vertical trunk, leg base and foot.

The instrument was validated by five lecturers. Two lecturers each in Textiles and Clothing and Statistics at Michael Okpara University of Agriculture Umudike, Abia State as well as one lecturer in Textiles and Clothing at University of Nigeria, Nsukka, Enugu State validated the instrument. Validation of the instrument was based on content validity.

The body measurements were pretested on (10) pupils in a study area that did not form part of the study. The reliability of the instrument was established using test-retest reliability method. The mean body measurements of pre/post test was 0.84. This indicated high consistency reliability of the instruments.

Data analysis:
Data obtained on the measurements of preschool children in Abia State was analyzed using means, standard deviation and t-test. Mean was used in establishing the mean body measurements of preschool children ages 2 to 5 years in private and public schools in Abia State. Variation in the mean body measurements of height, chest/bust, waist, hip/seat, across back/back width, neck size, shoulder, upper arm, wrist, scye depth, neck to waist, waist to hip, cervical height, waist to knee, body rise, crotch depth, inside leg, sleeve length, head circumference, vertical trunk, leg base and foot of preschool children in private and public schools in Abia State were tested using mean and T-test.

RESULTS
Hypothesis 1 (HO1):
There are no significant differences in the mean body measurements of the different parts of the body for preschool children (2 years) in private and public schools in Abia State.

Table I: Mean and t-test body measurements of respondents (2 years old) in Private and Public Schools in Abia State

S/N	Body Parts			Means		Standard Deviation		t-test	Remarks
		S_A	S_B	X_A	X_B	SD_A	SD_B		
1	Height (X_1)	79	50	97.24	97.06	7.39	7.89	.132	Ns
2	Chest/Bust (X_2)	79	50	54.27	56.04	2.54	4.36	-2.922	*
3	Waist (X_3)	79	50	53.75	55.08	3.51	4.07	-1.976	*
4	Hip/seat (X_4)	79	50	57.81	59.84	4.01	5.66	-2.383	*
5	Across Back/Back Width (X_5)	79	50	21.13	21.86	2.62	3.92	-1.274	Ns
6	Neck size (X_6)	79	50	27.66	32.84	2.53	2.71	-11.041	*
7	Shoulder (X_7)	79	50	7.10	7.40	1.09	1.23	-1.441	Ns
8	Upper Arm (X_8)	79	50	19.85	22.32	2.40	3.48	-4.777	*
9	Wrist (X_9)	79	50	13.95	15.28	1.60	2.08	-4.089	*
10	Scye Depth (X_{10})	79	50	10.73	11.10	1.84	2.01	-1.059	Ns
11	Neck to waist (X_{11})	79	50	23.35	23.60	2.31	2.79	-.542	Ns
12	Waist to Hip (X_{12})	79	50	10.92	11.88	4.29	2.88	-1.389	Ns
13	Cervical Height (X_{13})	79	50	79.42	82.08	6.08	6.99	-2.285	*
14	Waist to Knee (X_{14})	79	50	27.61	29.50	4.93	6.26	-1.911	Ns
15	Body Rise /crotch Depth (X_{15})	79	50	13.35	14.78	2.24	2.89	-3.142	*
16	Inside leg (X_{16})	79	50	42.67	41.98	3.77	9.26	.591	Ns
17	Sleeve Length (X_{17})	79	50	38.18	40.84	5.08	5.61	-2.786	*
18	Head circumference (X_{18})	79	50	50.61	49.18	3.51	7.83	1.414	Ns
19	Vertical trunk (X_{19})	79	50	110.37	105.76	109.34	11.68	.296	Ns
20	Leg Base (X_{20})	79	50	17.91	17.56	2.55	2.37	.783	Ns
21	Foot (X_{21})	79	50	16.62	16.14	1.93	1.82	1.408	Ns

S_A = Private Sample; S_B = Public Sample; $\overline{X}_A$ = Mean for Private ; $\overline{X}_B$ = Mean for Public; SD_A =Standard Deviation for Private; SD_B =Standard Deviation for Public; Df = 127; P = 0.05;
*S =Significant; NS= Non-significant.

Table I reveals that the mean body measurements of the preschool children in the public schools were greater than those of their age mates in the private schools for most of the body parts of the subjects who were 2 years old. Significant differences between the mean body measurements of preschool children in private and their age mates in the public schools in Abia State were obtained in the chest/bust (t = -2.922), waist (t = -1.976), hip / seat (t = -2.383), neck size (t = -11.041), upper arm (t = - 4.777), wrist (t = - 4.089), cervical height (t = -2.285), body rise / crotch depth (t = -3.142), sleeve length (t = -2.786).

Hypothesis 2 (HO2):
There are no significant differences in the mean body measurements of the different parts of the body for preschool children (3 years) in private and public schools in Abia State.

Table II: Mean and t-test body measurements of respondents (3 years old) in Public and Private Schools in Abia State

S/N	Body Parts			Means		Standard Deviation		t-test		Remarks
		S_A	S_B	X_A	X_B	SD_A	SD_B			
1	Height (X_1)	79	50	99.82	100.61	8.07	8.07	-0.826		Ns
2	Chest/Bust (X_2)	79	50	56.24	56.49	3.22	3.46	-0.573		Ns
3	Waist (X_3)	79	50	55.78	55.55	3.05	3.13	0.505		Ns
4	Hip/seat (X_4)79	50	55.78	59.37	3.05	4.06	-6.474		*	
5	Across Back/Back Width (X_5)	79	50	22.90	23.11	3.39	3.20	-0.475		Ns
6	Neck size (X_6)	79	50	29.52	29.96	3.22	3.38	-0.827		Ns
7	Shoulder (X_7)	79	50	7.82	7.67	0.95	0.99	1.192		Ns
8	Upper Arm (X_8)	79	50	21.69	21.95	2.54	2.65	-0.657		Ns
9	Wrist (X_9)	79	50	15.13	15.35	1.70	1.68	-0.863		Ns
10	Scye Depth (X_{10})	79	50	11.75	11.65	1.83	1.80	0.395		Ns
11	Neck to waist (X_{11})	79	50	24.29	24.33	2.18	2.16	-0.141		Ns
12	Waist to Hip (X_{12})	79	50	11.35	11.19	1.84	1.69	0.619		Ns
13	Cervical Height (X_{13})	79	50	82.28	83.26	9.74	9.80	-0.734		Ns
14	Waist to Knee (X_{14})	79	50	28.78	28.15	5.20	5.13	0.876		Ns
15	Body Rise /crotch Depth (X_{15})	79	50	14.60	14.55	2.23	2.42	0.160		Ns
16	Inside leg (X_{16})	79	50	43.86	44.27	5.45	5.63	-0.547		Ns
17	Sleeve Length (X_{17})	79	50	39.97	40.35	5.37	5.49	-0.515		Ns
18	Head circumference (X_{18})	79	50	51.16	51.79	4.84	4.67	-0.935		Ns
19	Vertical trunk (X_{19})	79	50	103.10	103.21	10.48	9.72	-0.067		Ns
20	Leg Base (X_{20})	79	50	18.88	18.53	2.53	1.68	1.082		Ns
21	Foot (X21)	79	50	17.60	17.55	1.89	1.79	0.209		Ns

S_A = Private Sample; S_B = Public Sample; $\overline{X}_A$ = Mean for Private ; $\overline{X}_B$ = Mean for Public; SD_A =Standard Deviation for Private; SD_B =Standard Deviation for Public; Df = 127; P = 0.05; *S =Significant; NS= Non-significant.

The mean body measurements of the preschool children (3 years) in the private schools were higher than those of their age mates in the public schools in most of the body parts that were measured. However, the differences were not significant for twenty body parts (at 0.05 level of significance) with the exception of the hip / seat measurement (t = -.6.474) as presented in Table II.

Hypothesis 3 (HO3):
There are no significant differences in the mean body measurements of the different parts of the body for preschool children (4 years) in private and public schools in Abia State.

Table III: Mean and t-test body measurements of respondents (4 years old) in Private and Public Schools in Abia State

S/N	Body Parts			Means		Standard Deviation		t-test		Remarks
		S_A	S_B	X_A	X_B	SD_A	SD_B			
1	Height (X_1)	143	192	105.41	106.24	10.88	5.61	-.918		Ns
2	Chest/Bust (X_2)	143	192	58.01	59.71	5.58	5.16	-2.872		*
3	Waist (X_3)	143	192	56.77	56.35	3.96	4.45	.896		Ns
4	Hip/seat (X_4)	143	192	58.85	60.49	11.25	4.60	-1.823		Ns
5	Across Back/Back Width (X_5)	143	192	22.92	22.90	4.12	3.67	.064		Ns
6	Neck size (X_6)	143	192	28.97	32.64	2.53	3.72	-10.187		*
7	Shoulder (X_7)	143	192	7.88	8.07	1.83	1.13	-1.181		Ns
8	Upper Arm (X_8)	143	192	20.48	22.42	2.65	4.30	-4.758		*
9	Wrist (X_9)	143	192	15.45	15.58	3.52	2.01	-.423		Ns
10	Scye Depth (X_{10})	143	192	12.60	11.70	10.53	2.55	1.146		Ns
11	Neck to waist (X_{11})	143	192	25.71	25.02	3.69	3.03	1.879		Ns
12	Waist to Hip (X_{12})	143	192	15.77	12.95	12.77	6.85	2.601		*
13	Cervical Height (X_{13})	143	192	88.50	89.47	7.44	7.88	-1.142		Ns
14	Waist to Knee (X_{14})	143	192	29.17	32.03	8.28	6.46	-3.548		*
15	Body Rise /crotch Depth (X_{15})	143	192	18.29	15.97	9.44	8.88	2.307		*
16	Inside leg (X_{16})	143	192	47.83	49.17	6.86	4.68	-2.122		*
17	Sleeve Length (X_{17})	143	192	42.31	43.20	4.76	4.33	-1.794		Ns
18	Head circumference (X_{18})	143	192	52.66	53.92	4.38	7.61	-1.773		Ns
19	Vertical trunk (X_{19})	143	192	101.84	108.73	13.86	12.77	-4.709		*
20	Leg Base (X_{20})	143	192	19.03	18.28	2.02	2.40	3.029		*
21	Foot (X_{21})	143	192	18.42	17.63	2.01	2.00	3.478	*	

S_A = Private Sample; S_B = Public Sample; $\overline{X}_A$ = Mean for Private ; $\overline{X}_B$ = Mean for Public; SD_A =Standard Deviation for Private; SD_B =Standard Deviation for Public; Df = 333; P = 0.05; *S =Significant; NS= Non-significant.

Table III shows that the average body measurements of the preschool children in the public schools were greater than those of their mates in the private schools for most of the body parts of the subjects who were 4 years old. Significant values existed between the preschool children (4 - 5 years) in private and those in public schools in Abia State in the following body parts: chest / bust (t = -2.872), neck size (t = -10.187), upper arm (t = - 4.758), waist to hip (t = 2.601), waist to knee (t = -3.548), body rise / crotch depth (t = 2.307), inside leg (t = -2.122), vertical trunk (t = - 4.709), leg base (t = - 3.029) and foot (t = 3.478).

Hypothesis 4 (HO4):

There are no significant differences in the mean body measurements of the different parts of the body for preschool children (5 years) in private and public schools in Abia State.

Table IV: Mean and t-test body measurements of respondents (5 years old) in Public and Private Schools in Abia State

S/N	Body Parts			Means		Standard Deviation		t-test	Remarks
		S_A	S_B	X_A	X_B	SD_A	SD_B		
1	Height (X_1)	143	192	108.41	109.24	7.16	6.80	-1.465	Ns
2	Chest/Bust (X_2)	143	192	59.34	59.49	4.95	4.60	-0.349	Ns
3	Waist (X_3) 143	192	57.49	57.65	4.69	4.27	0.665	Ns	
4	Hip/seat (X_4)	143	192	61.19	61.49	6.65	4.41	-0.613	Ns
5	Across Back/Back Width (X_5)	143	192	23.99	24.47	4.84	4.62	-1.114	Ns
6	Neck size (X_6)	143	192	31.12	31.85	3.43	3.49	-1.972	*
7	Shoulder (X_7)	143	192	8.35	8.17	1.06	1.17	2.030	*
8	Upper Arm (X_8)	143	192	22.46	22.86	3.41	2.91	-1.301	Ns
9	Wrist (X_9) 143	192	16.08	15.93	3.12	1.85	0.596	Ns	
10	Scye Depth (X_{10})	143	192	12.83	12.21	2.44	2.19	3.213	*
11	Neck to waist (X_{11})	143	192	26.11	26.13	3.27	2.59	-0.075	Ns
12	Waist to Hip (X_{12})	143	192	12.32	12.07	5.90	5.85	0.454	Ns
13	Cervical Height (X_{13})	143	192	90.90	92.04	9.73	10.63	-1.285	Ns
14	Waist to Knee (X_{14})	143	192	31.37	32.78	7.93	7.32	-2.127	*
15	Body Rise /crotch Depth (X_{15})	143	192	16.19	16.81	4.19	7.68	-1.080	Ns
16	Inside leg (X_{16})	143	192	49.22	49.59	5.26	4.27	-0.859	s
17	Sleeve Length (X_{17})	143	192	43.72	43.87	4.63	4.31	-0.373	Ns
18	Head circumference (X_{18})	143	192	53.99	54.16	4.40	4.56	-0.415	Ns
19	Vertical trunk (X_{19})	143	192	108.15	109.49	9.13	9.27	-1.573	Ns
20	Leg Base (X_{20})	143	192	19.74	19.41	2.46	2.39	1.411	Ns
21	Foot (X_{21})	143	192	19.10	18.99	2.18	2.11	0.527	Ns

S_A = Private Sample; S_B = Public Sample; $\overline{X}_A$ = Mean for Private ; $\overline{X}_B$ = Mean for Public; SD_A =Standard Deviation for Private; SD_B =Standard Deviation for Public; Df = 333; P = 0.05; *S =Significant; NS= Non-significant.

The mean body measurements of the preschool children (5 years) in the public schools were lower than those of their age mates in the private schools in most of the body parts that were measured. However, significant differences (0.05 level of significance) between the average body measurements of the two groups were observed in only four body parts namely neck size (t = -1.972), shoulder (t = 2.030), scye depth (t = 3.213), waist to knee (t = -2.127) as presented in Table IV.

FINDINGS OF THE STUDY

The following findings were made:

1) The mean body measurements of the preschool children increased as the ages of the subjects increased for all the variables that were measured. (See Tables I, II, III and IV).
2) Result from this study showed that there were variability in the mean body measurements of the preschool children in the various locations that were used for the study.
3) Research result revealed that preschool children in private urban schools in Umuahia zones were taller than their age mates in the rural as well as their age mates in the public urban schools for all the ages (2, 3, 4 and 5 years) of the subjects that were studied. Highest mean height measurements obtained in private urban preschool children in Umuahia zone were 100.85cm, 104.66cm, 109.61cm, 115.00cm for ages 2, 3, 4 and 5 respectively as shown in Tables I, II, III and IV respectively.
4) The average body measurements of the subjects in the public schools were greater than those of their age mates in the private schools in most of the body parts that were measured for ages 2 and 4. On the contrary, the mean body measurements of the preschool children in the private schools were greater than those of their age mates in the public schools in most of the body parts that were measured for ages 3 and 5 respectively. Significant differences (at 0.05 probability level existed between the two groups of subjects in the mean body measurements of most of the body parts that were measured for ages 3 and 5.

DISCUSSION

The grand mean body measurements of preschool children (2 to 5 years) in private and public schools in Abia State, Nigeria were established for the following variables: height, chest/bust, waist, hip/seat, across back/back width, neck size, shoulder, upper arm/biceps, wrist, scye depth, neck to waist/back waist length, waist to hip, cervical height, waist to knee, body rise/crotch, inside leg, sleeve length, head circumference, vertical trunk, leg base, foot, skirt length and trouser length. Results from this study revealed that the average body measurements of the preschool children increased as the ages of the subjects increased for all the variables measured. A similar report was made by several authors (Aldrich, 1999; Aldrich, 2006;Cock, 2003) who recorded an increase in the mean body measurements of British preschool children as the ages of the children increased. According to Santrock (2005) changes in body proportion and appearance will be attributed to the growth of muscles and bones. Hence, bone growth results in increased stature. In view of this, Halliburton and Gable (2002) also reported that in early childhood, changes in bone proportions are prominent. Hence, a gradual lengthening of the body occurs as bone and muscle growth progress. The individual therefore changes from appearance of a baby to that of a young child.

The mean body measurements of preschool children in the public schools were greater than those of their age mates in the private schools for most of the body parts that were measured for ages 2 and 4 as shown in Tables 2 and 4. On the contrary, data from the study showed that the mean body measurements of the preschool children in the private schools were greater than those of their age mates in the public schools in most of the body parts that were measured for ages 3 and 5 respectively. Significant differences (at 0.05 probability level) existed between the two groups of subjects in most body parts that were measured for ages 2 and 4. However, non- significant differences existed between the two groups of subjects in most body parts that were measured for ages 3 and 5. The null hypothesis which states that there are no significant differences in the mean body measurements of the different parts of the body of the preschool children (2 to 5 years) in private and public schools was therefore rejected for variables with significant values (at 0.05 probability level) and accepted for variables with comparable values. In this regard, Santrock (2005) had shown that individual growth rates exist as well as different sports in growth and maturation and different rates of aging in later life. Furthermore, in a study of the development of infants and children, it is essential to remark

that all children are different (Halliburton & Gable; 2002). Several authors reported that the most marked secular trend has been in the degree of early physical maturity. Individuals who were born more recently do not only reach a maximum height earlier but also show an earlier growth spurt, so that they reach the maximum height at an earlier age (Papalia, Olds & Feldman, 2002).

Research studies have shown that individual differences become observed more frequently in early childhood. These characteristics are based on biological, cultural and social factors and are very noticeable in the difference between females and males for example, differences occur in the rate of growth, height, weight, motor skills, sex-role development, aggression and other related aspects (Lloyd & Lederman, 2002; Peisner-Feinberg, 2004;WHO, 2000). Other aspects where unique differences in development occur involve broader social class and ethnic group characteristics, personality difference due to birth order among siblings and expressions of creativity. In the study of the development of infants and children, it has been shown that all children are different. Similarly, Okeke, Madukwe, Eme and Nwagbo (2013) investigated the anthropometric and nutrient intake of pre-school children (2-5years) in Nsukka Local Government Area of Enugu State, Nigeria and reported that socio-economic/ cultural factors do affect child growth. Therefore, individual differences occur in the rate of growth, height, weight, and other related aspects of preschool children.

CONCLUSION

The mean body measurements of preschool children (2 to 5 years) in private and public schools in Abia State have been established in this study. Home Economics teachers and lecturers as well as their students in tertiary institutions can use the average body measurements in drafting patterns for different body sizes of preschool children. This is necessary for meeting the heavy demand for Nigerian children's clothing following the ban on importation of clothing. Hence, Nigeria can export children's commercial patterns and garments to other African countries with similar body structure.

RECOMMENDATIONS

The following recommendations were made based on the findings of this study:

1. The mean body measurements of preschool children in private and public schools should be provided to students who are undertaking courses in textiles and clothing for use in pattern drafting.
2. the mean body measurements of preschool children in private and public schools should form data base for commercial pattern production in Nigeria which is necessary for large scale garment production. Hence, Nigeria can export children's commercial patterns and garments to other African countries with similar body structure.
3. the mean body measurements of the preschool children (2 to 5 years) in private and public schools can serve as anthropometric data that can be useful in evaluating the nutritional and growth status of preschool children in Abia State.

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BREASTFEEDING PRACTICES OF STUDENT LACTATING MOTHERS AT UNIVERSITY OF EDUCATION, WINNEBA, GHANA

*** Adwoa Nyantakyiwaa Amoah, *Lucy Tettey and *Guy Eshun**
Department of Home Economics Education
University of Education,Winneba. Ghana.
Corresponding author: adwoason@gmail.com

ABSTRACT
The study sought to investigate the breastfeeding practices of student lactating mothers in the University of Education Winneba at the Winneba campus. The study examined the knowledge levels of student-nursing mothers on breastfeeding, identified the challenges that they face on campus, identified the coping strategies employed in dealing with these challenges and suggested measures to help address the challenges facing student-nursing mothers. A sample of ninety–eight (98)lactating mothers with babies of age 0-24 months were selected from the three most female-dominated departments using the purposive and snowball sampling techniques. Structured questionnaire was used to gather the required data. Data was analysed using SPSS, and presented using tables, percentages and graphs. Resultsof the study revealed that, almost half of the respondents for this study (49%) were aged between 31-35 years while over two-thirds of these students were in third or final year. Most mothers agreed that early supplementary feeding can lead to illness and infections among infants, and 78% considered colostrum as important to infant health and growth. Further, 88% of the mothers fed their babies directly from the breast and did not consider expressing the breast-milk to be fed for the infants in their absence. Respondents had no space or privacy for breastfeeding (43%)and difficulty in balancing demands of child-care and schooling (27%). Moreover, care givers were hired or a family member was used in providing support to cope with these challenges. Provision of a day care centre or crèche and availability of breastfeeding rooms in university buildings were suggested possible solutions to these challenges. It was therefore, recommended that the university management should build a day care centre for the university community where student lactating mothers could send their infants for care and breastfeed their babies during lecture breaks.

Key words: Breastfeeding, student lactating mothers, infants, breast milk, female education

INTRODUCTION
Education is important for everyone but it is especially significant for girls and women. It is noted that educated women were better able to contribute to national development and participate more effectively in the economic and political life of societies. Moreover, providing women education reduces the gap in the underrepresentation of women at the decision making levels. Providing women better opportunities and access to education also boasts the earning capabilities of women, making them financially independent to enable them raise better families and educated children.

In addition to all the aforementioned advantages of educating women, education in contemporary times is regarded not only as a tool for development, but also a right. The 1992 constitution of Ghana for example, provides every citizen in Ghana a right to education. At the basic level, it is illegal under the constitution for a child not to be in school. Consequently some developing countries including Ghana have various interventions to encourage the upward education of females to the tertiary level. For instance some universities have quota for female students in certain course areas especially in the sciences whiles others have the female admission cut-off grade point of some of the faculties lower than that of males United Nations Education Scientific and Cultural Organization (UNESCO, 1998).
However, societal norms, traditions, economic and social circumstances make it difficult for females

to attain desired higher levels of education. For instance, in the Ghanaian traditional society, it is perceived that the man is the head of the family and breadwinner and so needs to be educated for better employment and higher income. The woman on the other hand is seen as the keeper of the home and must be trained at the kitchen (Adams, 2008).

Furthermore, the reproductive roles of women are a major hindrance to attaining higher education. Marriage and housekeeping limit the role of women. The place of African women in most sub-Saharan countries is the home and hers is to cook, procreate, nurture young ones and care for the aged and the sick. Subsequently, a woman who gives birth while in school may discontinue with her education as little support may be received from their schools, lecturers or colleagues. A few others may combine child-birth with education.

Globally, breastfeeding is acknowledged to be the ideal food for infants because of its numerous benefits to both the mother and infant. Breastfeeding ensures adequate growth and child development, nutritional status, health and thus, the survival of infants and young children. Breastfeeding has been important since the beginning of mankind. Breast milk is a unique combination of nutrients essential to child's health and cannot be duplicated by any laboratory formula. It provides a number of health advantages beginning at birth and continuing throughout a child's life. In fact, a large number of health problems today's children face might be decreased or even prevented by breastfeeding the infant exclusively for at least the first six months of life. The longer the mother breastfeeds, the more likely her child will get the health benefits of breastfeeding (WHO, 2016).

However, statistics from the Ghana Health and Demographic Report (2014) revealed that, trends data on breastfeeding is decreasing as the percentage of children 0-5 months who are exclusively breastfed has decreased by 17% between 2008 and 2014 from 63% to 52%.
Because Ghana is one of the countries in the world with high infant mortality rate of 37 deaths per 1000 births, much more work is needed to help save more infant lives by promoting breastfeeding at all levels and among all groups of people. One of such group of people is student mothers.

University of Education, Winneba (UEW) has a student population of over 30,000 and has the mission to train competent professional teachers for all levels of education as well as conduct research, disseminate knowledge and contribute to educational policy and development in Ghana and beyond. Out of this population about 35 % are females. It has been observed that though all the universities in Ghana have adopted affirmative action to increase the enrollment of female and have gender desks to ensure their welfare, conditions of operation in the universities conflict with cultural expectations of a woman's roles in the family, such as breastfeeding, which appears to be static and do not always favour the intellectual development of females. It has been observed in some Ghanaian public universities that females often had to combine academic work and raising family and at times deferred their programmes due to child bearing problems unlike their male colleagues (Adusah-Karikari, 2008).

Because of the fragile nature of infants and how susceptible they are to diseases, they require special care and adequate nourishment through breastfeeding. But how are UEW lactating mothers feeding their infants in the light of the high academic demands? Also, what coping strategies are they using? It is in view of these concerns that this study was undertaken to find out the breastfeeding practices and coping strategies of lactating mothers on U.E.W campus.
Objectives of the study
The main objective of the study was to describe the breastfeeding practices of student nursing mothers on U.E.W campus.

Specific objectives
Specifically, the study sought to:
i. examine the knowledge levels of student-nursing mothers on breastfeeding.
ii. identify the challenges that lactating mothers face on campus in their attempt to combine academic work and child-care practice of breastfeeding.
iii. investigate the coping strategies in dealing with the challenges.
iv. suggest measures to help address the challenges facing student-nursing mothers in their attempt to seek higher education.

METHODOLOGY

The descriptive survey method was used in this study since it is a useful scientific tool to employ when a researcher is interested in the opinions and attitudes of respondents as well as the relationship of these attitudes to the respondent over behaviour.

The Winneba campus which is the main campus of the University was the study area. It is spread over three sites (North, Central and South) within the Winneba Municipality.
Total student enrolment for the 2013/2014 academic year was 44,053. This was a marginal increase of 1.36% over the 2012/13 student enrolment of 43,460. Total student enrolment for the 2013/2014 academic year comprised 20,615 Fulltime (47%), 13,256 Distance Learners (30%) and 10,182 Sandwich/Part-time (23%). Fulltime students increased by 7%, Distance Learners decreased by 6% and Sandwich/Part-time students decreased by 1% over the 2012/13 enrolment figures (UEW, 2014).
All lactating mothers who are pursuing their tertiary education at the University at the Winneba campus constituted the population of the study.

The total sample size of hundred (100) lactating mothers with babies of age 0-24 months were selected from three most female-dominated departments from the Winneba Campus. These departments were Home Economics Department, Art Education Department and the Department of Early Childhood Education. The purposive and snowball sampling techniques were employed to obtain the sample used for the study.

Structured questionnaire was used to gather information for the study. The questionnaire was based on the objectives of the study. Both close and open-ended questions were used to collect information, which gave more insight into the objectives.

The study received the approval from the Graduate Board of the Faculty of Science of the University of Education, Winneba. Moreover, the consent of participants was sought by indicating their readiness to participate in the study and those who declined to participate were excluded from the study.

The questionnaire was also used to gather information on variables like demographics knowledge on breastfeeding and breastfeeding practices, challenges faced and coping strategies of student lactating mothers. The questionnaires were given to the various respondents for two weeks after which it was collected. The respondents were briefed about the rationale of the whole procedure. They were also told to be honest in their responses and assured of their confidentiality as no name was to be written on the questionnaire.

The data collected was edited, coded and analysed using SPSS (version 19, Cary, NY) and presented using tables, percentages and bar graph.

RESULTS AND DISCUSSION

Background characteristics respondents

Table I: Demographic characteristics of respondents

Variables	Frequency	Percentage (%)
Age		
Below 25	6	6
26-30	26	27
31-35	48	49
36-40	12	12
Level of students		
100	14	14
200	17	17
300	38	39
400	29	30
Residential type		
University Hall of residence	0	0
Private Hostel/House	98	100
Age of breastfeeding child		
Below one month	13	13
1-6 months	44	45
7-12 months	19	19
13-18 months	12	12
18-24 months	11	11

It is evident from the table above that majority of the respondents were aged between 31 to 35 years old representing 49% and 27% of the respondents belonging to 26 – 30 years age group. These age groups are considered the appropriate age range for child bearing with average experience and preparedness to divulge information on child birth.

From Table I, it can also be seen that, respondents came from different levels in the University with level 300 dominating with 39% followed by level 400 with 30%. This shows that, most of the respondents give birth in their third year and forth year which could be because the students at this level may feel familiar with the university system and environment.

Moreover, all respondents lived in private hostels and houses. This is attributed to the fact that, the atmosphere of such private houses and hostels are much similar to that of their homes which is conducive for child-care compared to the University Halls of residence where there may be as high as eight people in a room or an average of three occupants per room.
In terms of the age of the breastfeeding child, 45% of the infants were between one and six months while 11% were 18 months and more.

Knowledge level of student-nursing mothers on breastfeeding
In this study, breastfeeding knowledge was assessed based on knowledge of respondents on the treatment of colostrum, the average number of times the infant should be fed daily, the appropriate age for breastfeeding and when to wean baby, the duration for breastfeeding, effects of early

supplementary feeding. The results are presented in Table II.

Table II: Duration for breastfeeding

Duration in minutes	Frequency	Percentage (%)
Less than 15	6	6
15-20	35	36
21-25	18	18
26-30	5	5
Above 30	34	35
Total	**98**	**100**

When respondents were asked about their opinion on how long should infants be fed on breast milk during breastfeeding, about 35% of respondents mentioned 30 minutes and above. Additionally, 18% mentioned of 21 to 25 minutes while another 36% were of the opinion that, babies should be fed for 15- 20 minutes. The WHO (2011) has documented that children should be breastfed within one hour of birth and exclusively breastfed for the first six months and then continue until age two. During the first few weeks the baby can enjoy the breast milk as long as the baby wants. The feeding is regulated by the baby's appetite and it is important to respond to the child's needs (WHO, 2016).
Table III presents results on how well informed respondents are on the influence of early supplementary feeding on breastfeeding.

Table III: Early supplementary feeding as important cause of infections and breastfeeding failure.

Opinion	Frequency	Percentage (%)
Strongly agree	40	41
Partially agree	22	22
Partially disagree	8	8
Strongly disagree	24	25
Do not know	4	4
Total	**98**	**100**

It can be seen that, close to half of the respondents (41%) strongly agreed to the assertion and 22% also agreed partially. On the other hand, one fourth (22%) strongly disagreed while 8% partially disagreed. About 8% neither agreed nor disagreed. The above results showed that, over 60% of the respondents either agreed or partially agreed to the above assertion that early supplementary feeding is a cause of diarrhea and breastfeeding failure. Early supplementary feeding is not advisable because it may inhibit breastfeeding and expose infants to illnesses like diarrhea. Moreover, according to WHO (2016), early supplementary feeding is associated with increased diarrheal disease and mortality among infants.
The opinions expressed by these mothers further confirm reports by the Ghana Demographic and Health Survey (2014) that, even though breastfeeding rates in Ghana is high (98%), only about half of this number(52%) are exclusively breastfed as most infants are given early supplementary feds like

other milk (7%), water (18%), solid or mashy foods(19%) and other liquids (4%) (Demographic and Health Survey (DHS), 2014).

Treatment of colostrum
The opinions of respondents were sought with regard to the treatment of colostrum and it turned out to be that more than two-thirds (78%) indicated that, it contains more antibodies, white blood cells, stimulate baby immature intestine and helps the baby to pass meconium, hence must be fed to the baby for the few days. The results of this study is similar to a study by Al-Binali (2012) on breastfeeding knowledge, attitude and practice among school teachers in Abha female educational district, southwestern Saudi Arabia which reported that about89% of the participants considered colostrum to be good for the baby. This supports Wardlaw (2004)'s assertion on colostrum that it contains antibodies and immune-system cells some of which pass on unaltered through the gastrointestinal tracts of the infant into the blood stream. These immune factors and the cells protect the infant from some gastrointestinal diseases and other infectious disorders, compensating for its own immature system during the few months of time.

Table IV: Types of breastfeeding mode

Breastfeeding type	Frequency	Percentage (%)
Sucking from the mothers breast	86	88
Expressing the milk and feeding from a bottle	12	12
Total	**98**	**100**

From Table IV it is evident that, majority of the respondents representing 88% breastfeed their babies directly by sucking from their mothers' breast while only 12% of the respondents expressed breast milk using breast pumps. This finding are in line with trends in breastfeeding in Ghana which shows that bottle feeding (which includes expressed milk) is not common in Ghana as only 4% babies under 2 months are fed with a bottle with a nipple while only 29% at age 6-9 months (DHS, 2014). Flaherman and Lee (2013) opined that when direct breastfeeding is not possible, a mother can express (artificially remove and store) her milk. With manual massage or by using a breast pump, a woman can express her milk and store it. It can be stored in freezer storage bags and containers made specifically for breast milk, a supplemental nursing system, or a bottle ready for use. However, most respondents were found not to be expressing milk because their babies were capable of sucking the breast milk directly from the breast. Other respondents also believed that, a bond is being established when babies suck directly from their mothers breast. However, milk expression could have been very useful to these mothers since it could enable another person to feed their infants while they were attending lectures.

Number of times lactating mothers breastfeed their babies during lecture hours
Table V: Number of times babies are breastfed during lecture hour

Number of times	Frequency	Percentage (%)
One	24	24
Two	30	32
Three	10	10
Four	10	10
Do not know/count	24	24
Total	**98**	**100**

From Table V, a little over half (56%) of the respondents said they feed their babies at most twice during lectures hours while 24% reported they did not count the number of times the babies were breastfed during lecture period.

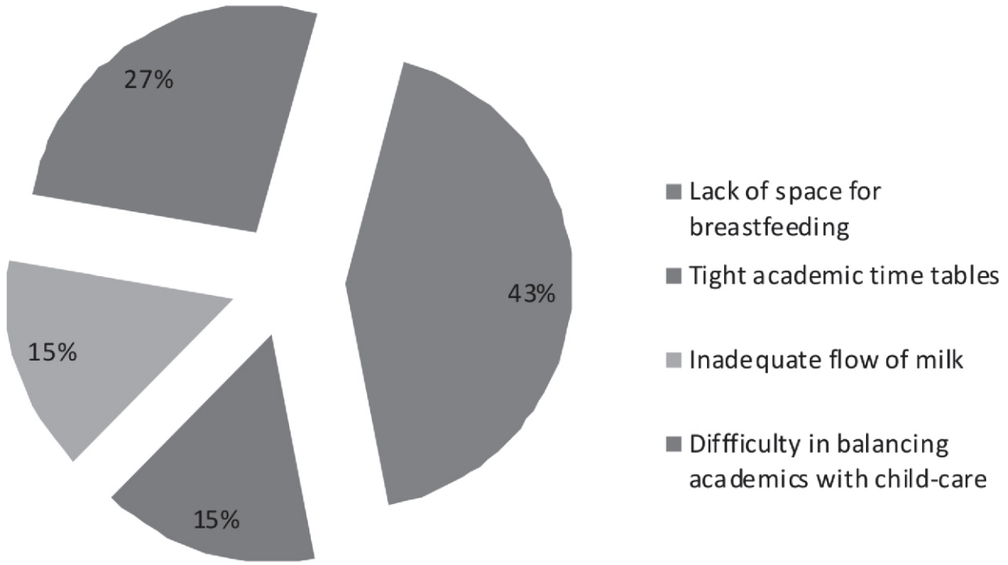

Fig 1: Challenges faced by lactating mothers on campus

From Fig. 1, the predominant challenge faced by respondents was the lack of space or privacy for breastfeeding during lecture breaks. This challenge was mentioned by approximately 47% of respondents while about 27 % indicated that difficulty in balancing demands for childcare and academics or schooling was a challenge to them.
Despite the challenges, about 77% of the respondents revealed that they were not ready to abandon schooling or defer their courses but were determined to complete their programmes of study.

Table VI: Effect of challenge/difficulty faced on campus on mother and child

Effect of challenges on mother and child	Frequency	Percentage (%)
Excessive stress and fatigue	45	46
Production of less milk for the child	14	14
Poor academic performance	10	10
Uncomfortable and low-self-esteem	8	8
Makes mother breastfeed the child less often	21	22
Total	**98**	**100**

It was realized that, most of the respondents experienced excessive stress and fatigue as a result of the challenges. Mothers also breastfed their babies less often as a result of the situation while others (10%) reported it led to poor academic performance. The result of the above gives evidence of the effects of the challenges student lactating mothers encounter on campus.

Coping strategies adopted by lactating mothers while on campus
Table VII: Coping strategies of respondents

Strategies	Frequency	Percentage (%)
Hired a care giver to assist me care for the child	33	34
Brought mother or family relative to help	55	56
Sought frequent attention of health experts and counselors	10	10
Total	**98**	**100**

It is evident in Table VII that, a little over half (56%) of the respondents indicated that they brought mother/relative to campus to help them as a way of strategy for coping with the challenge while about 34% percent said they go in for the services of a care giver to assist in catering for the child. The above information gives an indication that, support need be given to student lactating mothers. These results confirm a study by Agunbiade and Ogunleye (2012) which established that significant others like grandmothers, mother in laws and relatives are actively involved in the provision of child-care including sustenance of breastfeeding culture.

Measures that can help address the challenges facing student-nursing mothers in their attempt to seek higher education
Concerning measures that could help address those challenges presented in Table VII, respondents suggested that, the university should provide a daycare centre within the university premises. Also, it was suggested that lactating rooms could be provided in university buildings so that mothers could comfortably breastfeed their babies during lecture breaks.
Other suggestions included the need for support from family members. Also some were of the opinion that their course mates should encourage and support them in their academic work.

CONCLUSION AND RECOMMENDATIONS

The participants of this study had average knowledge on breastfeeding and mainly breastfed their infants directly from the breast. Their main challenge was balancing demands of schooling and childcare as well as the lack of breastfeeding rooms in university buildings. In coping with these challenges, the mothers hired nuns or brought family members to assist in breastfeeding.
Education of women is crucial for human and national development but while promoting female education to the highest level, it also becomes imperative for reproductive rights to be promoted given the demographic dynamics of female students at tertiary institutions such as the universities to help protect the health of the mother and infant. Hence, a clear and specific policy guideline or statement on issues about student-motherhood, issues and challenges of student-mothers (and their children) is needed.

In view of the findings of the study, the following recommendations are made for consideration:
A day care centre/crèche where young babies could be taken to during lecture hours by the university since the presence of such a place would enhance the recruitment and admission of more student lactating mothers into the University. Additionally, Universities should consider making provision for space conducive for breastfeeding where lactating mothers can breastfeed their babies when there is the need to during lecture hours. Brochures and leaflets on breastfeeding practices and coping strategies should be distributed freely to the student body by theGender Mainstreaming Directorate of U.E.W to create awareness about breastfeeding best practices.

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ASSESSMENT OF THE ATTITUDE OF FOOD HANDLERS TO FOOD HYGIENE PRACTICES IN PRIMARY SCHOOL IN ZARIA

Iliya, H. B.

Department of Home Economics Education,
Federal College of Education, Zaria
iliyahb@yahoo.com; 08067387991

ABSTRACT

This paper assessed the attitude of food handlers to food hygiene practices in primary schools in Zaria. The objectives of the study include assessment of the level of knowledge of food hygiene among the food handlers in Zaria and determining the attitude of food handlers towards food hygiene. The study adopted the survey research design. The population for the study was all the primary schools in Zaria local government and seventy food handlers were randomly sampled from ten schools in the study area. A questionnaire was used to gather responses from the respondents. Data was analyzed using simple mean. The results of the analysis revealed that the level of the knowledge of food handlers on food hygiene is fair and the concept vary from one person to another. The study concluded that despite the positive attitude of food handlers towards good hygiene, their knowledge of food hygiene varies from one person to another. This variation was attributed to the fact that many of the handlers were not trained in nutrition or related courses. It was recommended that school authorities should ensure maintenance of the hygiene practices by the food handlers for sustenance of healthy living among the pupils. Periodic training should also be organized for the vendors.

Key words: Food hygiene, Food handlers, Primary school, Attitude, Knowledge

INTRODUCTION

Food hygiene is a public concern. Apart from air borne and contaminable diseases, food is a major source of infection among school children. Parents are not usually with their children in school to monitor what they eat. Food hygiene deals with the prevention of contamination of food stuffs at all stages of production, collection, transportation, storage, preparation, sale and consumption.Food borne illness is defined as a disease, usually either infectious or toxic in nature, caused by agents that enter the body through the ingestion of food (World Health Organization, 2011).

World Health Organization (WHO) (1999) defines food as any substance, whether processed, semi processed or raw which is intended for human consumption. Ohiokpehai (2004) describes food as anything liquid or solid material which when taken and digested can provide the body with nourishment. Generally, food is any edible substance in liquid or solid form that provide nutrients to the body, when taken.

Food vendors or handlers according to Longree (1997) in Ozioko (2013) are small scale entrepreneurs normally seen in a simple set up facilities or stalls in public places in order to provide quick and cheap services to the people. The food vendors operate both in urban and rural schools, where they set-up their stalls adjacent to the schools or operate under a nearby tree. The items they sell include 'Wara', 'Gurasa', 'Dankali', 'Kosei', and fruits such as Mangoes, Oranges, and other edible items.

Simons (2006) in Ozioko (2013) asserts that school children exposed to poor and unhygienic diets not only experience poor health but also retarded academic development due to non-nutritive content. Simons also states that body first uses energy to maintain critical organs functioning. Poor families spend proportionately more of their income buying food from food vendors. Unfortunately, these cheaper foods are generally the least nutritious. They are often fatty oily foods, high in salt and sugar and un-hygienically prepared. The food stuffs as a result of poor storage are contaminated and vending of such food to school children and other people endangers their health. Agba (1994) in Ozioko (2013) observes that unhygienic practices by food vendors expose children to diseases like vomiting, abdominal pains, diarrhea and other forms of health risks in the environment. Although school children enjoy food from these food vendors, in many cases the food is of poor quality and it poses a serious health risk to the school children.

Food contamination can be prevented if adequate measures are taken such as food sanitation. Food sanitation includes keeping the preparation area clean and relatively germ-free. Mixing bowls, spoons, paring knives and any other tools used in the kitchen should be washed thoroughly before use. Kitchen countertops and cutting boards should also be cleaned and sterilized from time to time. Keeping a sanitary workplace will also cut down on the chances of some types of foodborne illnesses from developing when people consume a prepared food.

Everyone is at risk of foodborne illness but school children are at a higher risk because of their lack of discrimination of what goes into their mouth. So much emphasis is placed on food hygiene that necessitated the World Health Organization (WHO) formulating a general principle of food hygiene which basically was to prevent contaminating food with pathogens spreading from people, pets and pests; separate raw from cooked foods to prevent contaminating the cooked food; cook food for the appropriate length of time and at the appropriate temperature to kill pathogens; store food at the proper temperature; use safe water and raw materials.

Statement of the problem

The knowledge of food handlers about the food borne infections and their safety practices is an important issue in the outbreaks of food borne infection. Concept of food hygiene varies from one person to another thus ignoring the general standard of food hygiene. An adult can cross examine food items and the handler before consumption but school children take in food items without discriminating what is edible and what is not. This necessitates the need to for this study on the assessment of the attitude of food handlers to food hygiene in primary schools in Zaria.

Research objectives

The objectives of this study are to

i. assess the level of knowledge of food hygiene among the food handlers in Zaria
ii. determine the attitude of food handlers towards food hygiene;

Research questions

The following research questions were answered in this study.

I. What is the level of knowledge of food hygiene among local food handlers in primary and secondary schools in Zaria?
ii. What is the attitude of local food handlers in Zaria towards food hygiene?

METHODOLOGY

Design

This research adopted the survey research design. Afolabi (1993) posited that a survey research involves gathering of data about a target population through a sample and generalization by the findings. A survey study is one in which a sample of the total population is studied (Nworgu, 1991).

Best and Khan (1986) also opined that the method enabled the researcher to obtain the opinion of the representative sample from the target population in such a way that will permit inference to be made about the entire population. Therefore, the researcher adopted a simple survey approach because it is appropriate for the study as it gives the researcher the flexibility to test the hypotheses and predicts the possible outcome.

Population

All the food handlers in the public primary schools in Zaria Local Government Area of Kaduna State constitute the target population for the study. According to Zaria local government Primary Education Board, there are 118 public primary schools. Each of the schools has between four and five food vendors

Sample

Random sampling technique was used and seventy food handlers participated in the survey from ten schools. The respondents are usually found in clusters and this made administration of the instrument easier.

Instrument / Instrumentation

The instrument used to gather data for this research is a questionnaire titled Assessment of Food Hygiene Practices among Food Handlers in Primary in Zaria. The instrument was divided into three sections which includes Section A which contains the Demographic data, Section B on the level of knowledge of Food Hygiene and Section C on attitude to Food Hygiene.

The instrument was administered to the food handlers by the researcher who explains the meaning of the statements verbally to the respondents, one after the other. The answers were filled immediately by the researcher.

Method of data analysis

The data collected in this research was analyzed using suitable descriptive statistics. Simple mean was used to analyze the research questions.

RESULTS PRESENTATION

Research question one: What is the level of knowledge of food hygiene among local food handlers in primary and secondary schools in Zaria?

Table I: Level of knowledge of food hygiene among respondents.

S/N	STATEMENT	Mean	Decision
1	The environment where the food is prepared cannot affect item cleanliness.	1.54	Accepted
2	Washing of hands is part of food preparation hygiene	1.72	Accepted
3	Disease can be spread through food consumed	1.70	Accepted
4	Food should not be exposed openly before and after processing	1.45	Rejected
5	Water used in preparing the food can be a source of contamination	1.28	Rejected
6	Smoke or flames from the fire can contaminate the food	0.60	Rejected
7	Rats, cockroaches and other insects/rodents can contaminate food	1.70	Accepted
8	Licking of hands can contaminate food	0.60	Rejected
9	Skin infections can contaminate food	1.60	Accepted
10	The equipment used in the preparation of the food can be a source of contamination	0.90	Rejected

From Table I, item 1 contains the responses to the statement “The environment where the food is prepared does not matter, if the food is clean." and the mean was 1.54. This was above 1.50 which is the benchmark for acceptance. This shows that majority of the respondents accept that the environment where the food is prepared does not matter, if the food is clean
Item two contains the responses to the statement "Washing of hands is part of food preparation hygiene" and the mean was 1.72. This implies that majority of the respondents agree that Washing of hands is part of food preparation hygiene.

Item three contains responses to the statement "Disease can be spread through food consumed" and the mean was 1.70. This shows that majority of the respondents agree that Disease can be spread through food consumed.
Item four contains responses to the statement "Food should not be exposed openly before and after processing" and the mean was 1.45. This shows that majority of the respondents do not agree that Food should not be exposed openly before and after processing.

Item five contains responses to the statement "Water used in preparing the food can be a source of contamination" and the mean was 1.28. This shows that majority of the respondents do not agree that Water used in preparing the food can be a source of contamination.
Item six contains responses to the statement "Smoke or flames from the fire can contaminate the food" and the mean was 0.60. This implies that majority of the respondents do not agree that Smoke or flames from the fire can contaminate the food during cooking.

Item seven contains responses to the statement "Rats, cockroaches and other insects/rodents can contaminate food" and the mean was 1.70. This shows that majority of the respondents accept the fact that Rats, cockroaches and other insects/rodents can contaminate food.
Item eight contains responses to the statement "Licking of hands can contaminate food" and the mean was 0.60. This shows that majority of the respondents disagree that Licking of hands can contaminate food.
Item nine contains responses to the statement "Skin infections can contaminate food" and the mean was 1.60. This shows that majority of the respondents agree that Skin infections can contaminate food.
Item ten contains responses to the statement "The equipment used in the preparation of the food can be a source of contamination" and the mean was 1.50. This shows that majority of the respondents accept the fact that the equipment used in the preparation of the food can be a source of contamination.

Research question two: What is the attitude of local food handlers in Zaria towards food hygiene?

Table II: Attitude of local food handlers towards food hygiene

S/N	STATEMENT	MEAN	DECISION
1	Disease can be spread through the intake of unclean food	3.70	Accepted
2	Leaving food open after preparation can make it unsafe for consumption.	2.70	Rejected
3	Food hygiene is not important as it does not affect the consumer.	2.45	Rejected
4	Sources of water used in preparation of the food contributes to food hygiene	3.70	Accepted
5	I frown at inspection of my food for the purpose of checking its edibility	2.06	Rejected
6	Food hygiene can help to prevent disease outbreak and epidemic diseases	3.60	Accepted
7	I am more concerned with the profit I will make rather than the quality and edibility of my food	1.47	Rejected
8	Food handling is not a part of food hygiene practices	1.14	Rejected
9	Body hygiene is not in anay way related to food hygiene	3.70	Accepted

In Table II, item 1 contains the responses to the statement “Disease can be spread through the intake of unclean food" and the mean was 3.70. This was above 3.0 which is the benchmark for acceptance. This shows that majority of the respondents accept that Disease can be spread through the intake of unclean food.
Item two contains the responses to the statement "Leaving food open after preparation can make it unsafe for consumption" and the mean was 2.70. This implies that majority of the respondents disagree that Leaving food open after preparation can make it unsafe for consumption.

Item three contains responses to the statement "Food hygiene is not important as it does not affect the consumer" and the mean was 3.40. This shows that majority of the respondents agree that Food hygiene is not important as it does not affect the consumer.
Item four contains responses to the statement "Sources of water used in preparation of the food contributes to food hygiene" and the mean was3.70. This shows that majority of the respondents agree that Sources of water used in preparation of the food contributes to food hygiene.

Item five contains responses to the statement "I frown at inspection of my food for the purpose of checking its edibility" and the mean was 2.06. This shows that majority of the respondents disagree that I frown at inspection of my food for the purpose of checking its edibility.
Item six contains responses to the statement "Food hygiene can help to prevent disease outbreak and epidemic diseases" and the mean was 3.60. This implies that majority of the respondents agree that Food hygiene can help to prevent disease outbreak and epidemic diseases.

Item seven contains responses to the statement "I am more concerned with the profit I will make rather than the quality and edibility of my food" and the mean was 1.47. This shows that majority of the respondents disagree that they are more concerned with the profit I will make rather than the quality and edibility of my food.
Item eight contains responses to the statement "Food handling is not a part of food hygiene practices" and the mean was 1.14 this shows that majority of the respondents disagree that Food handling is not a part of food hygiene practices.

Item nine contains responses to the statement "Body hygiene is not in any way related to food hygiene" and the mean was 3.70. This shows that majority of the respondents agree that Body hygiene is not in any way related to food hygiene.

DISCUSSION

Food is one of the basic needs of every human. It is important for day to day sustenance of the body. This study found out that the attitude of food handlers in primary schools in Zaria is good. This agrees with the findings of Omemu and Aderoju (2008) who conducted a study in Abeokuta, Ogun state on the practices of street food vendors. They found out that many of the street food handlers. Many of the food vendors have a fair knowledge of hygiene practices in food preparation such as the spread of diseases through the intake of unclean food, the contribution of clean water to food hygiene, role of food hygiene in prevention of epidemic diseases, and the fact that food handling is an important food hygiene practice.

Despite the knowledge of this by the food handlers give little attention to personal/body hygiene. This is reflected in their response that body hygiene is not in any way related to food hygiene. Majority of the respondents also agreed that leaving the food open after preparation does not make it unsafe for consumption. Despite the fact that the positive attitude of the food handlers to food hygiene, their knowledge of food hygiene varies as they have varying opinions on how food hygiene practices in food preparation. This agrees with the findings of Otu (2014) who conducted a similar study on the food hygiene practices of among food handlers in Ahmadu Bello University, Zaria. He also found out

that the idea of food hygiene varies from one handler to another although they have general consensus on water and kitchen cleanliness.

CONCLUSION AND RECOMMENDATIONS

The knowledge and attitude about food hygiene amongst the food handlers was fair. Although their attitude to food hygiene was good, many of the food handlers have varying opinions about food hygiene. Schools should ensure the compliance of the food handlers to food hygiene practices. Since many of the food handlers are not trained in the field of nutrition or related courses, their idea varies. The deviation from the general idea of food hygiene was minimal.

Based on the findings from this study, the following recommendations are proffered:

1. Any prospective food handler seeking to operate in primary schools should be screened. The screening should include his/her level of knowledge of food hygiene by the school management.
2. After the individual has been successfully screened, medical examinations should also be conducted to ensure that the handler is free from communicable/ contagious diseases. They should undergo only periodic medical examination at the beginning of every session or term.
3. Food handlers should be placed in locations in the school environment where their items would not be contaminated.
4. The food items brought by the handlers should be sampled before they are allowed to make sales daily sales.
5. There should be periodic food safety training sessions should be organized by the school for all the food handlers hat operate within their premises.

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WORK-HOME INTEGRATION FOR MAXIMIZATION OF INHERENT POTENTIALS OF FEMALE WORKERS IN FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA, OGUN STATE

Adubi, K. O.
Department of Home Science and Management,
Federal University of Agriculture, Abeokuta
E-mail: kikeadubi@yahoo.com

Hamzat,A. A.
Agricultural Media Resources and Extension Centre,
Federal University of Agriculture, Abeokuta
E-mail: habeni62@gmail.com

ABSTRACT

The challenges of integrating work and family life are parts of everyday reality for the majority of working women. These challenges may vary depending on income, occupation, or stage in life. These challenges also cut across all socio-economic levels and are felt directly by both women and men but women are mostly affected. To determine these socio-economic levels, Quantitative survey approach was adopted for this study. Questionnaires were administered to One hundred and fifty-four (154) female staff of the Federal University of Agriculture, Abeokuta (senior and junior staff category) which represent (30%) of the entire female workforce in the University. One hundred and fifty-three (153) questionnaires were retrieved which represented the sample size. Data obtained were analyzed using descriptive statistics such as frequency count, percentages, and inferential statistics such as Pearson Product Moment Correlation (PPMC) and Chi Square. PPMC was used for variables measured at interval level while Chi Square was used for variables measured at nominal level. Findings showed there was no significant relationship (p>0.05) between age (r = -0.054), husband age (r = -0-007), years of marriage (r = -0.110), number of children (r = -0.117) and the effect of work integration on the family. This implies that the socio – economic characteristics of the women play little or no role on the effects of work integration and home management among female workers in the study area. The study therefore concluded that work integration with home management is essential for women in order to strike a balance between the job and the home front and that with years of experience on the job, women have, in the course of their service, developed coping strategies for job- family demands or have learnt by means of contact with colleagues on how best to cope with the demands.

Keywords: Work integration, Home management, Female workers, Family and social security

INTRODUCTION

Today, women represent over 40% of the global labour force, and approximately 70% of women in developed countries and 60% in developing countries are engaged in white collar jobs. Worldwide, more women than ever before are completing higher levels of education International Labour Organization (ILO, 2010).According to the Oxford Advanced Learner's Dictionary (8th Edition), work involves physical or mental effort, especially as part of a job. It can also mean to have a job. Integration is an adjective, which is the act or process of combining two or more things so that they work together. So work integration among women is simply the physical and/or mental process of combining their career and other activities (family, care for children, chores, etc.) together without one negating the other.

The new global economy, with its focus on round the clock availability of work, worsens the problems of working without having time for personal interests or domestic concerns (Heymann, 2000; Moen, 2001). However, integrating work and family life today requires a well-informed collaborative effort on the part of all who share interests and responsibilities for these issues like employers, trade unions, professional associations and advocacy groups, government, and communities have significant roles to play in women integrating work life and family life. Each of these groups must recognize and re-examine the prevailing assumption that an "ideal worker" is one who can subordinate all other elements of life to the requirements of the job. Working mothers are women who have remained in employment while still raising a family. To explore how balanced and what meaningfulness have been achieved by people combining work and family life remain a big challenge.

Concept of work integration

Female participation in the global workforce has grown dramatically over the past number of decades, this trend was speci? cally reported for countries such as the USA (Auster, 2001), Europe), and Ireland (Coughlan, 2002; Drew & Murtagh, 2005). The increased female labour force participation, particularly during childbearing years, has increased their challenges in managing time, roles and responsibilities (Fine-Davis, Fagnani, Giovanni, Hojgaard & Clarke, 2004; Marcinkus & Hamilton, 2006). The challenge for working mothers is how to facilitate the sharing of roles in a more fair and equitable way to relieve them of the double burden of employment and domestic duties (Fine-Davis et al., 2004). Additionally, there is the challenge of work organizations recognizing the dual roles of working mothers and according them ? exibility in work policies and rules (O'Connell & Russell, 2005).

Insights from scarcity theory inform us that personal resources such as time, energy and attention are ? nite (limited). Therefore, balancing the demands for commitment of resources to one role (e.g. career) results in the devotion of lesser resources to the other role (Edwards & Rothbard, 2000; Wayne, Musisca & Fleeson, 2004). However, there are generally two schools of thought regarding the integration of work and personal life domains: one that considers the relationship between domains to be con? ict-oriented and the other which suggests that the integration between and across domains can be facilitative with positive spill-over in operation.

Statement of the problem

Changes in the demographic constitution of the workforce have caused the increased focus on work and family issues. The entry of women and single parent (woman) in the workforce underline some significant trends. Work and home are the two primary life domains for most adults (Frone, Russell & Cooper, 1992). Traditionally, the guiding assumption has been that work and family were two incompatible domains. When work and home spill over into one another, conflict can arise. In recent years, there has been an increase in competitive pressure on organizations to increase productivity and increase time demands for workforce, leaving less time available for the employees, especially women to cater for their primary responsibilities in the home. Therefore, in a bid to place a balance between effects of work and family demands there is the need to know the effects of integrating work and home management among career women. To achieve this; the following research questions are formulated:

Research questions

1. What are the socio-economic characteristics of career women in the study area?
2. What led to combination of career and family responsibilities?
3. What are the effect of combining career and family responsibilities on the women?

Specific objectives

The specific objectives of the study are to:

1. identify socio-economic characteristics of career women in the study area;
2. determine factors responsible for work- family integration;
3. examine the effect of combining career with family responsibilities on the women; and
4. assess economic contributions of career women to the family sustainability.

Hypotheses of the study

Ho_1 There is no significant correlation between the socio- characteristics of the women and their work- home integration.

Ho_2 There is no significant relationship between the occupational factors of the women and work-home integration.

RESEARCH METHODOLOGY

The study was carried out in Federal University of Agriculture, Abeokuta. Descriptive survey research was used to investigate work integration and management of home by career women in the Federal University of Agriculture, Abeokuta (FUNAAB).The population of the study comprises the entire married Academic and Non-Teaching female staff of the FUNAAB.

Purposive sampling technique and respondents availability technique were used to select the subjects that responded to the questionnaires. There are five hundred and fourteen female staff (150 academic female staff and 364 non-academic female staff) in the university. Thirty percent of the respondents (both academic and non-academic) were selected for the study. Forty-five questionnaires were administered to the academic staff and one-hundred and nine non-teaching staff were interviewed for the study.

A total of 153 questionnaires were analyzed using both descriptive and inferential statistics. Descriptive statistics used were frequencies and percentages, while inferential statistics used were Pearson Product Moment Correlation (PPMC) and Chi Square. PPMC was used for variables measured at interval level while Chi Square was used for variables measured at nominal level.

RESULTS AND DISCUSSIONS

Socio-economic characteristics of respondents

Status of marriage/ years of marriage

The results in Table II show that, most respondents (87.6%) were married, 3.3% were divorced, 5.9% were widowed while 6.8% were separated. Marriage confers responsibility on individual. Furthermore, the results show that (43.8%) of the respondents had been married for over 15 years,19.6%, 22.9%and 13.7% have married for between 11 – 15 years, 6 -10 years and 1- 5 years, respectively. This shows that the respondents have been involved in marriage in one way or the other. This agrees with Ekong (2003) who pointed out that marriage in Nigerian society is highly cherished

Household size

The study further showed that almost half (51.6%) of the respondents had a household size of 4-6 persons with an average of 5 persons per household this could probably be due to multiple marriages caused by death of spouse or separation. The Nigerian society in the modern time is advocating for moderate household size.

Table I: Distribution of respondents based on age and their husbands' age (n= 153)

Characteristics	Frequency	Percentage (%)	Mean ($\bar{X}$)	Standard Deviation (SD)
Respondent age				
≤30	5	3.27		
31-40	59	38.6		
41-50	69	45.1	**42.0**	**7.0**
51-60	19	12.4		
>60	01	0.7		
Respondents' husbands' age				
31-40	27	17.6		
41-50	65	42.5	**49.0**	**9.3**
51-60	54	35.3		
>60	7	4.6		

Source: Field survey, 2017

Table II: Distribution of respondents based on their years of marriage, status of marriage and household size (n= 153)

Source: Field survey, 2015

Characteristics	Frequency	Percentage (%)	Mean ($\bar{X}$)	Standard Deviation (SD)
Years of marriage				
≤5	21	13.7		
6-10	35	22.9	**15.0**	**8.3**
11-15	30	19.6		
>15	67	43.8		
Status of marriage				
Married	134	87.6		
Divorced	5	3.3		
Widowed	9	5.9		
Living apart	10	6.5		
Household size				
1-3	17	11.1	**4.79**	**2.208**
4-6	79	51.6		
7-9	53	34.7		
>10	4	2.6		

Condition of women in the home front

Table III reveals that majority (82.4%) of the respondents do not have house help. Also, 77.1% of the respondents do not have in-laws cohabiting with them. The non-employment of house help may be attributed to individual family's personal choice and their financial capacity to pay the wages of such house help. Moreover, most families tend to be nuclear in structure in recent times, without any room for cohabitation of in-laws. This can be attributed to the unpalatable experiences of most families resulting from co-habitation with in-laws. However, 52.3 % of the respondents affirm that occasional visits by them have been supportive. It is therefore left to the spouse and children to fill the gap. However, participation of spouses and children in helping on the home front was found to be

insignificant at 15 and 20% respectively. Furthermore, time management skill application such as the prioritization of duties, allocation of time for each job and estimating its completion time appear to be unpopular and insignificant among the respondents with a value of just 5%. Regardless of this, work application techniques such as use of equipment in carrying out tasks for faster completion were significant among the respondents at 75%. This may be due to the fact that most households in recent times employ the use of equipment like blenders over the previously used grinding stone; vacuum cleaners over the use of brooms; washing machines in place of manual washing; etc.

Table III: Distribution of respondents by form of help in the home front (n= 153)

Conditions of women in the home front	Yes		No	
	Frequency	Percent (%)	Frequency	Percent (%)
Have house help	27	17.6	126	82.4
Spouse	23	15	130	85
Children	31	20	122	80
Cohabiting with in-laws	35	22.9	118	77.1
Presence of in-law supportive	80	52.3	73	47.7
Work application techniques	115	75	38	25
Time management skill application	08	05	145	95

Source: Field survey, 2015

Effect of work integration on home management on the Job

Table IV shows the mean of 29.2 indicating that respondents agreed with the assertion that family or spouse/partner demands interfere with work-related activities. Likewise, larger percentages of the respondents suspend some work activities because of demands at home for attention.

Also, majority of the respondents believed that work demands do not affect what they have to do at home. A greater percentage believes that their family life interferes with their responsibilities at work. These varied opinions gave a mean score of 36.0. Furthermore, a mean score of 29.8 and 34.7 indicates that larger percentage of the respondents do not believe to a great extent, the assertion that family related strain interferes with their ability to perform on the job.

Table IV: Distribution of Respondents based on the effects of work integration on home management on the job (n= 153)

S/N	STATEMENTS	Mean ($\bar{X}$)	SD
a.	The demands of my family or spouse/partner interfere with work-related activities	29.2	30.7
b.	I have to put off doing things at work because of demands on my time at home	34.8	25.5
c.	Things I want to do at work do not get done because of the demands of my family or spouse/partner	36.0	38.6
d.	My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime	29.8	27.4
e.	Family-related strain interferes with my ability to perform job-related duties	34.7	30.7

Source: Computed from field survey, 2017

Test of Hypotheses

Relationship between socio-economic characteristics and the effect of work integration on home management

Using Pearson Product Moment Correlation (PPMC) for variables measured at interval level, findings in Table V shows that there is no significant relationship between variables like age (r = -0.054), husband's age (r = -0-007), years of marriage (r = -0.110), no of children (r = -0.117) (p>0.05) and work integration effect on the family. This shows that the socio-economic characteristics of the women measured such as respondent's age, husband's age, years of marriage and number of children may have impact in real life but not be statistically significant.

Table V: Result of Pearson's Product Moment Correlation analysis of the respondents' socio characteristics affecting work-home integration

Items	r-value	p-value	Decision
Age of the respondent	-0.054	0.512	NS
Husbands age	-0.007	0.937	NS
Years of marriage	-0.110	0.181	NS
No of children	-0.117	0.158	NS

Source: Computed from field survey, 2015
*P<0.05
Decision criterion is reject null hypothesis when p<0.05
df= degree of freedom
S= significant
NS= not significant

Occupational factors influencing work-home integration

Table VI shows there were no significant relationship between factors responsible for work – family integration like; need to earn personal income ($\chi2$=8.477, df = 5), need for higher social recognition ($\chi2$=10.503, df = 5), need for practicing one's profession ($\chi2$=9.312, df = 5), need for leaving home and checkmating of boredom ($\chi2$=6.411, df = 5), need for financial security of the family ($\chi2$=4.027, df = 5) and its effect on job. This implies that most women tend to strike a balance between their jobs and family demands based on factors other than the listed ones.

Table VI: Chi-square analysis showing the relationship between occupational factors and work-home integration by the women

Variables	$\chi2$	df	p-value	Decision
Need to earn personal income	8.477	5	0.132	NS
Need for higher social recognition	10.503	5	0.062	NS
Need for practicing one's profession	9.312	5	0.097	NS
Need for leaving home and checkmating of boredom	6.411	5	0.268	NS
Need for financial security of the family	4.027	5	0.546	NS

Source: Computed from field survey, 2015
*P<0.05
Decision criterion is reject null hypothesis when p<0.05
df= degree of freedom
S= significant
NS= not significant

CONCLUSION

A nominal relationship could not be established between certain occupational factors responsible for women integrating work with home services. However, there may possibly be other factors not covered by this study.

Furthermore, certain effects of the integration could be ascertained by the mean response of the respondents. These include: inability to do what needs to be done when one desires to do it, as well as the interference of family issues on work performance which cannot be ignored.

RECOMMENDATIONS

1. Family is the primary institution on which all other social institutions in the society are based. Thus, for more effective work integration with housekeeping, it is expected that female staff is encouraged on how best to harmonize work demands with family responsibilities.
2. Social security should be made available for women so that they can enjoy flexibility in their jobs when needed attention is required of them in the home front.

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DEVELOPING SELF ADVOCACY AND RESILIENCY SKILLS AMONG CHILDREN WITH SPECIAL NEEDS IN FOSTER HOMES IN LAGOS STATE

1Seriki-Mosadolorun, J.S., 1Abiamuwe, N.O., 1Lucas, B. O., 1Enamudu, G. P. & 2Adeniji, O. O.

1School of Technical Education,
Yaba College of Technology, Yaba, Lagos

2Community Vocational Centre, Festac, Lagos
Correspondences:jummaitt@gmail.com&ngozicyn@yahoo.com

ABSTRACT
This study assessed the methods of teaching and learning self-advocacy and resiliency skills among children with special needs in foster homesin Lagos state.A descriptive survey design was adopted for the study. A total of 99 care-givers were purposively selected from five special homes. Validated questionnaire was used to elicitnecessary data from the respondents which were analyzed using percentages, mean and standard deviation. Findings revealed that among others, the methods of teaching self-advocacy and resiliency skills include: allowing children to make counter arguments to points made in class (mean = 3.3), teach and advocate power dynamics in the classroom (mean = 3.3), and invite a non-traditional advocate to talk to the children (mean = 3.1). Challenges encountered by caregivers in teaching and learning self-advocacy and resiliency skills are include less access to general education curriculum (mean = 2.7), poor learning environment (mean = 3.3) children have limited confidence and low self-esteem (mean = 2.9). Providing a supportive learning environment (mean = 3.4) and, nurturing positive emotions (mean = 3.3) are some of the strategies for improving teaching and learning self-advocacy and resiliency skills among children with special needs. It was concluded that promoting self-advocacy and resiliency skills helps to reduce the effects of significant adversity on children's healthy development which is essential to the progress and prosperity of our society. Therefore, the statutory framework for advocacy provision should be strengthened to improve access to advocacy services for children and young people.

Keywords: Children with special needs, Advocacy, Resiliency, Foster homes

INTRODUCTION
Children with special needs include those with various difficulties such as physical, emotional, behavioral or learning disability or impairment that causes them to require additional or specialized services or accommodations such as in education or recreation (Innovative Practice Council, 2017). These children may have mild learning disabilities or profound cognitive impairment, terminal illness, developmental delays, occasional panics. The designation (Self advocacy and Resiliency skills) is useful for getting needed services; setting appropriate goals, and gaining understanding for a child and stressed family. Self-advocacy is the ability to speak on one's behalf and represent personal needs and interests. It involves understanding one's learning strengths and developing the ability to communicate learning needs and required accommodations (Merchant & Gajar, 2010).

Advocacy is instrumental in ensuring that the views, wishes and feelings of children are heard when decisions are made about their lives.The advocate's role includeensuring that the child's views and experiences are considered when decisions are made about their future which is different from representing the 'best interests of the child as is the case with other professionals. The advocate takes time to develop a relationship with a child and does it at a pace suited to each child. Research shows that the quality of the relationship between a young person and their advocate is the most significant

component in facilitating children's participation in decision-making and enabling young people to talk about things that they do not feel able to talk about with other professionals (Knight&Oliver, 2012). Young people see the independence of the advocate, respect for their views and their friendship as important characteristics of this relationship(Ofsted, 2008). It is important to recognize that not all children will be able to participate in decision making. Many of them find formal decision making settings quite intimidating and many will need help of a trusted adult to make sense of their feelings and to express these feeling to the other adults making decisions about their lives. That is the role of the independent advocate.According to Mishna (2011), self-advocacy is especially important for students with Learning Disabilities, and is necessary to achieve maturity, confidence, and a sense of identity. Self-advocacy is essential in achieving the best life possible (Vash, 2015). Regardless of age or disability type, self-advocacy is an invaluable life skill. It is a 'developed ability' comprised of specific skills that can be learned, formally or informally, through a number of venues. Some of the specific skills include having an accurate understanding of one's disability, knowing one's personal strengths, limitations, and abilities and being aware of the services or accommodations needed (Thompson & Nary, 2010). Self-advocacy is empowering and knowing how to acquire all necessary services or products which enables the disabled to have full inclusion and participation in life activities.Self-Advocacy is about speaking up for oneself and ensuring that individual views and wishes are heard and acted upon by decision-makers." (Guidance Department for Education and Skills, 2004).It is the ability to communicate one's needs and wants and to make decisions about the supports needed to achieve them. It means ensuring that you have the same chances in life, the same rights and the same choices as everyone else (Shek & Sun, 2010).
The ways in which people learn advocacy skills are likely to vary and evolve over time; however, the more adept persons with disabilities become, the easier it will be for them to self-advocate across settings and throughout their lives. Perhaps, the most obvious benefit is that it helps people fight discrimination and lack of access to services. When people cope with and overcome oppression, through their ability to self-advocate, they learn to be more resilient (Beart, 2015).

Resilience may be viewed as positive development despite adversity.The American Psychological Association (APA, 2011) defines resilience as "the ability to adapt well to adversity, trauma, tragedy, threats, or even significant sources of stress". According to Hart and Brehm (2015), resilience is evident where people with persistently few assets and resources, and major vulnerabilities have better outcomes than we might expect given their circumstances, and in comparison to other children in their contexts. Resilience is important because it is the human capacity to face, overcome and be strengthened by or even transformed by the adversities of life" (Grotberg, 2009). Developing this capacity relies on protective factors within individuals as well as in the family and community. Resilience is the capacity of an individual or system to absorb disturbance, re-organize, and keep functioning in much the same way as before. Many children especially those with disabilities lack resiliency skills. They do not have coping mechanisms, as a result feel rejected and depressed when they find themselves in an unusual situation (Walker, 2013). Some children in foster homes lack advocacy and resilience. The Innovative Practice Council (2017) defined foster care as a situation where children are placed by a competent authority for the purpose of alternative care in the domestic environment of a family other than the children's own family. It is a place that has been selected, supervised, qualified and approved for providing such care.According to Adoption and Foster Care Analysis and Reporting System (AFCARS, 2014), Foster care is a "24-hour substitute care for children outside their own homes." Foster care settings include, but are not limited to, non-relative foster family homes, relative foster homes (whether payments are being made or not), group homes, emergency shelters, residential facilities, and pre-adoptive homes. Foster homes cater for all kinds of children ranging from the gifted to those with learning difficulties.

Students with learning disabilities often lack the ability to articulate personal strengths and needs clearly and appropriately. This is as a result of expressive language difficulties, weak social skills or lack of practice in describing their needs. Some find it difficult to self-advocate because of personal

fears relating to disclosing information about their disabilities and by exposing themselves to the possibility of negative reactions (Walker, 2013). Such concerns are valid because it requires opening one's 'self up to others and risking not being listened to (Nakashima, Chapin, McMillan & Ziammerman, 2014), being labeled or categorized (Beart, 2015), or being told they do not need the requested service or accommodation. Negative reactions can feel personally invalidating, disempowering, and frightening, especially when they are associated with rejection (Beart, Hardy & Buchan, 2010).People with disabilities are often subject to less humane treatment than people who do not have disabilities (Schreiner, 2012).Many people encounter attitudinal, employment, learning, medical/professional, societal, and environmental barriers all of which have the ability to prevent them from participating in life to the fullest extent (Smart, 2009). These barriers reveal the need for persons with disabilities to become skilled-advocates. People who are not able to self-advocate often rely on professionals or family members to assist them. Regardless of who is doing the actual advocating, those involved must understand its value so that persons with disabilities can achieve the best quality of life possible – one that includes full inclusion and integration. This study sets out to investigate ways in which Self Advocacy and resilience skills could be developed among children with special needs in foster homes in Lagos State.

Research questions

The following research questions were raised to guide the study.

1. What are the methods of teaching self-advocacy to children with special needs?
2. In what ways can resiliency skills be taught to children with special needs?
3. What are the problems associated with teaching and learning of self-advocacy and resiliency skills among children with special needs?
4. What are the strategies for improving the teaching and learning of self-advocacy and resilience skills among children with special needs?

METHODOLOGY

Design of the study: The study adopted a descriptive survey design to assess the method of teaching and learning self-advocacy and resiliency skills among children with special needs in five special homes in Lagos State.

Area of the study: The study was carried out in five special homes in Lagos state. These special homes are Ore-Ofe Inclusive Unity, Dopemu; Morgan Hill Children Foundation, Ikeja; Little Saints Orphanage, Akowonjo; Modupe Cole Memorial Child Care and Treatment Home School Akoka,Yaba; and Heart of Gold, Marsha, Surulere, Lagos State.

Sample and sampling technique: All the ninety-nine (99) caregivers in the five homes participated in the study using purposive sampling technique.

Instrument for data collection: The instrument used for data collection was a structured questionnaire. The instrument was titled Self Advocacy and Resiliency Skills among Special Needs Children (SARSASNC). It consisted of two sections. Section A elicited information on socio demographic characteristics of the respondents while section B was based on the purposes of the study. The structured questionnaire was coded with nominal values which are assigned to each possible response expected from the respondents. A four-point scale coded as follows were used: Strongly Agreed, Agreed, Disagreed, and Strongly Disagreed.

Method of data collection: The instrument was administered to the care givers and retrieved on the spot by the researchers. Efforts were made to ensure that the items were filled correctly without omitting any of the needed information.

Method of data analysis: The data collected were analyzed using percentage, mean and standard deviation. Mean rating from 2.5 and above were considered agreed upon while mean rating of 2.49 and below were considered as disagreed upon. The total number of respondents was used as a basis to calculate the percentage of each of the respondents in the questions.

RESULTS

Table I: Demographic Characteristics of the Respondents n = 99

Characteristics	Frequency	Percentage
Sex		
Male	39	39.5
Female	60	60.0
Age		
22-30	35	35.4
30-40	48	48.5
40-50	13	13.1
50-60	3	3.0
Educational qualification		
SSCE	4	4.0
NCE	55	55.6
BSc	40	40.4

The result on Table I shows that majority (60%) of the caregivers were females, majority (48.5%) of the caregivers were between the ages of 30 – 40 years, 35.4% were between the ages of 22 and 30 years while majority (55.6%) of the caregivers have the Nigeria Certificate in Education, 40.4% were BSc holders.

Table II: Mean Responses on Methods of Teaching Self-Advocacy to Children with Special Needs.

S/N	Methods of teaching self-advocacy to children with special needs.	SA	A	D	SD	Mean	SD	Decision Rule
1	Allow students the space to disagree or make counter argument to issues raised in class	31	67	1	1	3.3	0.5	Agreed
2	Teach and acknowledge power dynamics in the classroom	45	48	3	1	3.3	0.7	Agreed
3	Invite a non-traditional advocate to speak to the students	40	52	7	0	3.1	0.6	Agreed
4	Encourage speaking and listening in all forms	40	38	15	6	3.2	0.9	Agreed
5	Explain the power of advocacy and build in advocacy with arguments.	30	66	2	1	3.3	0.6	Agreed

Table II showed that all the items were accepted as methods of teaching advocacy to children with special needs. The mean ratings of the respondents ranged from 3.1 to 3.3 while the standard deviation ranged from 0.5 to 0.9 showing that the respondents expressed similar opinions.

Table III: Mean Responses on Ways of Teaching Resiliency Skills to Children with Special Needs.

S/N	Ways of teaching resiliency skills to children with special needs	SA	A	D	SD	Mean	Standard Deviation	Decision Rule
1	Resist the urge to fix a problem and ask questions instead	64	35	0	0	3.6	0.5	Agreed
2	Teach problem solving skills and demonstrate coping techniques	49	33	15	2	3.3	0.8	Agreed
3	Read stories that reflect compassion, kindness and understanding others	40	50	8	1	3.3	0.7	Agreed
4	Develop children physical, imagination and social skills through play	38	50	10	1	3.3	0.7	Agreed
5	Make children feel secure, loved and accepted by giving attention and affection	48	40	11	0	3.4	0.7	Agreed
6	Promote independence	48	40	11	0	3.4	0.7	Agreed
7	Create a sense of purpose	40	38	16	6	3.2	0.9	Agreed
8	Encourage a focus on mastery	65	34	0	0	3.6	0.5	Agreed

Table III revealed that all the items were agreed upon as ways of teaching resiliency skills to children with special needs. All the items had mean ratings above 2.50. Items 1 and 8 had the highest mean value (3.6). The standard deviation of the respondents ranged from 0.5 to 0.8 showing that they expressed similar opinions.

Table IV: Mean Responses on Problems Associated with Teaching and Learning Self-Advocacy and Resiliency Skills.

S/N	Problems associated with teaching and learning self advocacy and resiliency skills	SA	A	D	SD	Mean	Standard Deviation	Decision Rule
1	Poor learning environment	48	31	20	0	3.3	0.8	Agreed
2	Lack of confidence in the children's abilities and low self esteem	32	34	26	7	2.9	0.9	Agreed
3	Lack of parents participation and involvement in education planning, life planning and decision making	16	24	37	22	2.3	1.0	Disagreed
4	Non-availability of a qualified workforce to address the transition needs of children with disabilities	24	30	25	20	2.6	1.1	Agreed
5	Less access to education curriculum and method of teaching	23	33	38	5	2.7	0.9	Agreed

Table IV showed that all but one of the items were accepted as problems associated with teaching and learning of advocacy and resiliency skills among children with special needs. All the items had mean ratings ranging from 2.6 to 3.3. Item 3 had the least mean value of 2.3 which was regarded as disagreed upon. The standard deviation of the respondents ranged from 0.8 to 1.1 showing that they had similar views.

Table V indicated that all the items were agreed upon as strategies for improving teaching and learning of self-advocacy and resiliency skills among children with special needs. All the items had mean ratings ranging from 3.0 to 3.4 while the standard deviation ranged from 0.6 to 0.9.

Table V: Mean responses on Strategies for Improving Teaching and Learning of Self-Advocacy and Resiliency Skills

S/N	Strategies for improving teaching and learning of self advocacy and resiliency skills	SA	A	D	SD	Mean	Standard Deviation	Decision Rule
1	Provide a caring, supportive learning environment	52	39	8	0	3.4	0.7	Agreed
2	Encourage volunteerism by creating opportunities for students to contribute to the wellbeing of others	40	51	7	1	3.3	0.7	Agreed
3	Be a model and nurture positive emotions such as respect, forgiveness and empathy	41	52	6	0	3.3	0.6	Agreed
4	Use role-play and humor to rework situations that proved uncomfortable in the past or to stimulate solutions for problems	41	49	7	2	3.3	0.7	Agreed
5	Use your own creativity to help the child develop the skills he/she needs	17	39	17	8	3.0	0.9	Agreed

DISCUSSION OF FINDINGS

Findings from the study revealed the various methods of teaching self-advocacy to children with special needs. These methods include giving the students room to make counter arguments to points made in class; explain the concept of advocacy by linking current case studies in the community; teach and acknowledge power dynamics in the classroom; invite a non-traditional advocate to talk to the children; encourage speaking and listening in all forms. This showed that schools can help children to develop advocacy skills by allowing them to freely express their feelings without being afraid of doing so. Advocacy involves speaking and acting on behalf of oneself or others. It refers to the efforts of an individual or group to effectively communicate, convey, negotiate or assist the interests, desires, needs and rights of yourself or another person. Self-Advocacy is about speaking up for oneself and ensuring that individual views and wishes are heard and acted upon by decision-

makers. While children have difficulties in speaking for themselves because of fear and low self-esteem, caregivers are to ensure that all these methods are put into use to train children on how to be a self advocate (speak for themselves). Schreiner (2012) posited that children should be allowed to make counter arguments to issues raised in the classroom. By establishing a normative surrounding argument, the care-giver can encourage the use and appropriateness of respectful disagreement. The care-giver should establish ground rules of when and how students should present arguments or counter arguments. According to Schreiner (2012), children with special needs learn to self advocate as part of their Individualized Educational Plans. They may learn through agency or community-based groups when a specific need has been identified (Gilmartin & Slevin, 2009). Still, others, perhaps the majority, discover the need for self-advocacy from personal experiences.Sebag (2010) posited that children are to identify personal barriers that hinder them while trying to self-advocate and they should strategize the ways they can enhance their ability to self-advocate. Children with special needs are to process their ability to emotionally handle challenging situations such as rejection and confrontation (Hart &Brehm, 2013; Walker &Test, 2011); assess and reassess personal progress in learning how to effectively self-advocate (Sebag, 2010). Also, encouraging speaking and listening skills are essential in building up self advocacy. This can be done by organizing speaking and listening conferences for the children. This will in-turn help them develop advocacy skills and persuasive voice. It is essential that the care-givers ask students questions that allow them to fully develop their critical thinking skills and their oral advocacy skills at the same time. If time does not allow for speaking and listening conferences, it iscrucial to engage the children in Socratic dialogue in the classroom so that they begin horning their spoken literacy skills to properly advocate. Socratic dialogue encourages students to think like an advocate, a problem solver, and like an active member of his or her community (Schek & Sun, 2010).Self advocacy helps people fight discrimination and lack of access to services. When people cope with and overcome oppression, through their ability to self-advocate, they are happy and become more resilient (Beart, 2015).

The results of findings from the study revealed that resiliency skills can be taught to children with special needs through many ways which include resist the urge to fix a problem; teach problem solving skills, promote independence; demonstrate coping techniques; developing physical, imagination and social skills through play and the likes. This implied that care-givers could play prominent roles in developing resiliency in children as well as in those with special needs. Resilience is how well a person can adapt to the events of life such as tragedy, natural disaster, health concern, relationship, work or school problem. It is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress such as family relationship, health or workplace problems as well as financial stressors (Duckworth, 2015). Hart and Brehm (2013) opined that children can be more resilient if caregivers express love, affection and being comforted when they are hurt or frightened. This helps children get closer to caregivers and motivate them to learn healthy ways of comforting and playing with others. Play is a way to connect, get to know other children better and have fun. It is also a great way to develop physical, imagination and social skills which help to build children resilience. Resilient people do not allow adversity define them. They find resilience by moving towards a goal beyond themselves, transcending pain and grief by perceiving bad times as a temporary state of affairs. Those who master resilience tend to be skilled in preparing for emotional emergencies and accept what comes their way with flexibility rather than rigidity (American Psychology Association, 2018). In the same vein, Catalano, Berglund, Ryan, Lonczard and Hawkins (2014) asserted that schools can arrange curricula-based programs to enhance students' bonding, core competencies, and optimism through which students build up resilience.

Findings from the study indicated that the problems associated with the teaching and learning of advocacy and resiliency skills include poor learning environment, lack of confidence; lack of parents' participation and involvement in education planning, life-planning and decision making. Without a conducive environment, children cannot learn to advocate for themselves as well as being

resilient. To gain the knowledge and skills needed for success in a variety of settings, children with special needs must have more than mere access to school buildings and placement in the least restrictive environment; they must have access to educational curriculum and instruction designed to prepare them for life in the 21st century (Wehmeyer & Schwartz, 2009). All these can be achieved according to Wehmeyer and Schwartz (2009) through readiness of the caregivers, which will in turn encourage self-determination skills in the children. Self-determination is a concept reflecting the belief that all individuals have the right to direct their own lives. Students who have self-determination skills are more likely to be successful in making the transition to adulthood, including employment and community independence (Wehmeyer & Schwartz, 2009). Educators, parents, and students consistently recommend that self-determination instruction begin early, well before high school. This recommendation is consistent with published recommendations for self-determination instruction (Wood & Test, 2011).

Findingsfrom the study showed that the strategies for improving teaching and learning of self advocacy and resiliency skills include; provision of caring, supportive learning environment; encourage volunteerism by creating opportunities for students to contribute in their homes, school and community. Positive attitude towards children help them believe that they can succeed when they try. Providing situations in which students are able to succeed; present frame failure as a learning opportunity; teaching students how to re-evaluate and adjust strategies that may not be working are crucial for developing self advocacy and resiliency in children (Twoy, 2009). According to Mullin and Chaney (2009), it is imperative to teach children to set realistic goals and obtain necessary resources through self-awareness. Self-awareness helps them articulate their growing understanding by practicing how to ask for help in a positive way. It is however necessary to use role-play and humor to rework situations that proved uncomfortable in the past or to simulate solutions for problems that lurk in the child's vivid imagination (Vash 2015). Vash (2015) stressed further that it is essential to teach children conflict resolution and peer mediation skills, strategies for standing up to bullies and violence-preparation strategies. All these strategies enhance teaching and learning among children with special needs (Nakashima, et al., 2014).

CONCLUSION

Based on the findings of the study, it is concluded that teaching and learning self-advocacy and resiliency skills affects the success of children with special needs. Care-givers have major roles to play in developing advocacy and resiliency in young children. They are models which children cautiously and un-cautiously emulate. Promoting self advocacy and resiliency will help to reduce the effects of significant adversity on children's healthy development which is essential to the progress and prosperity of our society. Resilient children do not allow adversity to define them; instead, they perceive bad times as a temporary state of affairs. They are able to establish a state of equilibrium subsequent to disturbances to a system caused by significant adversity.

RECOMMENDATIONS

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

1. The statutory framework for advocacy provision should be strengthened to improve access to advocacy services for children and young people
2. Caregivers should provide the necessary supports to help foster children's resiliency and train them to be self advocates by listening, giving them attention and showing the children affection.
3. Foster homes need to increase their involvement in promoting resiliency skills of children through counseling intervention and services.
4. Government and Non-Governmental Organizations should make available qualified workforces and access to education curriculum and method of teaching.
5. Local authorities should incorporate into their commissioning arrangements a requirement for advocacy services to produce an annual monitoring report which should go to the chair of the Children in Care Councils, the Director of Children's Services, the lead member, the principle child and family social worker and social work team managers.

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EVALUATION OF TEN CASSAVA (Manihot esculenta Crantz) VARIETIES AT A DERIVED SAVANNA LOCATION IN NIGERIA

Umeri, Clifford (Ph.D)
Agricultural Science Education Department,
College of Education, Agbor, Nigeria
Cliffordumeri@gmail.com +2348033771837

ABSTRACT
Growth and tuber yield of ten cassava varieties at a Derived Savanna location in Nigeria were evaluated. Cassava varieties used for the study were: 01/0098,01/0131,TME 419, TME 1, TME 693, 01/1371, 01/1797, 01/1368, 92/0326 and 00/0388. The design was a randomized complete block with three replicates. The plant parameters measured were: plant height, number of leaves/plant, leave area, stem girth and number of branches per plant. These were taken at 2,4,6,8 and 10 months after planting (MAP).Fresh tuber weight, fresh peel weight, dry matter of tuber, dry peel weight, dry matter% of peels and tuber were also determined. The most outstanding variety among the ten evaluated, was 01/1797 (8.50t/ha) and therefore it is recommended for cultivation at Igbodo in a derived savanna zone of Delta State.
Keywords: cassava, growth characters, yield performance.

INTRODUCTION
Cassava is grown as a sole crop or intercropped with other crops like yam, maize or sorghum. Cassava is usually propagated by stem cutting and rarely from seed (except for breeding purposes) (Gibbon & Pain, 1988). These stem cuttings are usually taken from the middle of the stem (Purseglove, 1991). According to Eke-Okoro, Ekwe,and Nwosu(2005), cuttings may be planted vertically or at an angle of 450 buried completely or to only half of their length, or they can be buried horizontally about 10cm deep. Recommended spacing for sole cassava crop is 1mx1m which gives an equivalent population density of 10,000 plants per hectare (Onwueme & Sinha, 1999; Eke-Okoro et al., 2005). This may be varied according to the cassava cultivar used, kind of land preparation and cropping system (Onwueme&Sinha, 1999). In the opinion of Ekanayake, Osiru, and Porto (1997), no universal recommendation exists in Africa and plant density of 10,000 – 15,000 plants/ha gives a good crop.

In Nigeria, many varieties are in cultivation. Apart from the local varieties, some of the best known improved varieties are TMS82/00661, TMS50395, TMS30001, 01/0098, TMS81/00110, 01/0131, TMS91934, TME419, TMS30572, TMS4(2)1425, TME1, TMS30555, TMS98/0581, 01/1371, TMS98/0510, 01/1797, 01/1368, 92/0326, TME693, 00/0388, TME419, NR41044, NR8212, NR8082, NR8083, NR8208, 01/1371 and NR83107. This is because of their higher resistance to the effect of destructive pests and diseases e.g. green spidermite, cassava mealy bug, viral infection, cassava mosaic disease, cassava bacterial blight, cassava anthracnose, cassava root rot (Nweke, Spenser, & Layman, 2003). Cassava can be classified on the basis of the level of cyanide content into sweet and bitter varieties. The bulk of cassava produced in the forest and savanna ecologies of Nigeria are the bitter high cyanide containing varieties.

Cassava is one of the most important stable food crops grown in tropical Africa. Because of its efficient production of food energy, all year round availability, tolerance to extreme stress conditions, and suitability for peasant farming and food system in Africa, cassava is playing a major role in efforts to alleviate the African food crisis (Purseglove, 1991). Ekanayekeet al. (1997) reported that over two third of the total production of cassava is consumed in various forms. Omoregie (2005) reported that cassava serves some useful economic purposes. These include: (i) garri, the traditional product which is consumed in granule form, (ii) fufu/akpu which has assumed a

national spread in consumption, (iii) tapioca and usi (starch) which are delicacies among the Urhobos, Itsekiris, Ijaws of the Niger Delta, materials for industrial and domestic uses, (iv) the leaves are used as vegetable and (v) as livestock feed.

In order for cassava to reach its full production capacity, there is need to address those issues. Reports on the adaptation, and nutrient requirements and response of cassava to fertilizer in Delta State are limited. Consequently, there is need to provide information on the missing link for better production of cassava in Delta State.

The broad aim of the study is the adoption of ten varieties of cassava yield in a derived savanna zone of Delta State.

The specific objectives of this study were to:
1. Evaluation of ten cassava varieties in derived savanna zone of Delta State with a view to determining their adaptability and suitability for production;
2. Assessment of the yield performances of proven cassava varieties in the area of study.

MATERIALS AND METHODS
The climatic conditions of Delta State are similar to other parts of Southern Nigeria. There are two distinct seasons. That is, the dry season and the rainy season. The rainy season starts in February and continue till the end of October. The rainfall regime shows a double maxima which is separated by a comparatively low rainfall period (dry period) in August called August Break. The length of wet season is at least seven months, i.e. about 220 – 250 days, with average rain days of 159. Temperatures are very high during day with cool night (Wikipedia, 2006).

Ten varieties of cassava obtained from the International Institute for Tropical Agriculture (IITA) Ibadan were used in this study without fertilizer application to evaluate their adaptation under native nutrient condition. The design was randomized complete block with three replicates. Each plot measured 5 x 4 (20m2). The cuttings were planted at a spacing of 1m x 1m within and between rows, and 1.5m between plots. Each plot had 20 plants (10,000 plants/ha). There was a total of 30 plots. The experimental area was 1071m2. Plantings were done by using stem cuttings of 25cm length. First weeding was carried out manually, by hoeing at 3 weeks after planting (WAP) while the second weeding was at 8 weeks after planting (WAP) and subsequent weeding operations were done by slashing with cutlass at 14 and 20 weeks after planting (WAP).

Data collection was carried out at 2,4,6,8 and 10 months after planting (MAP). Four plants from the centre were randomly selected per plot, tagged and sampled as necessary.

M Assessments of the following parameters were done: A tape rule was used to measure the height of plants from soil surface to the top on the main branch. The leaf area was determined by measuring the length and breadth of selected leaves at the middle from four marked plants per plot and multiplied with a constant (6.11) according to Hammer (1980) and Lutaladio (1986). The stem girth was determined by using a string around the plant at the first internode and later spread on a ruler.
Fresh Tuber Weight: Four mature tagged cassava plants at the centre rows (net plot) were selected from each plot for harvesting and weighing. Fresh peel weight: Four tagged cassava plants per plot were harvested, peeled and weighed. Dry Matter yield of tuber: The dry matter weight of cassava was taken by drying to a constant weight (after 48hrs) in force air oven at 800C. All weights were

taken with a top loading balance. Dry matter yield of peel: The peel dry weight of cassava was taken by drying to a constant weight (after 48hrs) in force air oven at 800C. All weights were taken with a top loading balance. The DM% of both tubers and peels were estimated as

$$\frac{\text{Dry weight}}{\text{Fresh weight}} \times \frac{100}{1}$$

Data Analysis: All data of parameters were subjected to appropriate statistical analysis such as ANOVA and Correlation (Steel &Torrie, 1980).

RESULTS

The second week after planting (WAP), more than 90% of the planted cassava stem cuttings of all varieties had sprouted. At 2 months after planting (MAP), the cassava plants had established in the field. All cassava varieties had commenced a rapid phase of growth which continued till the 6th and 8th MAP. Thereafter, the rate of growth became slow at 10 MAP. At 2 MAP, there was a significant difference among the varieties with 01/1797 having the highest plant height (65.17cm) and TME 1(28.00cm) being the shortest (Table I). At 4, 6, 8 and 10 MAP, there was no significant difference among the varieties. The tallest plants in were observed in variety 01/1797 and the shortest as 01/0388

Table I: Plant height (cm) of some cassava varieties at derived savanna zone in Delta State

Varieties	(MAP)				
	2	4	6	8	10
IGBODO (Derived savanna zone)					
01/0098	40.67b	133.00ns	146.67ns	206.27ns	220.00ns
01/0131	41.00b	183.17	203.67	241.17	274.33
TME 419	48.17ab	202.83	166.50	237.17	255.00
TME 1	28.00b	123.67	131.67	164.50	208.00
TME 693	44.67ab	181.00	194.50	218.17	235.83
01/1371	44.50ab	148.00	158.50	175.00	184.00
01/1797	65.17a	236.17	214.17	269.33	278.32
01/1368	24.17b	130.00	136.00	153.00	194.70
92/0326	34.33b	123.17	135.83	185.17	250.67
00/0388	34.50b	122.50	142.17	162.17	171.50
Mean	40.55	158.42	163.00	201.21	227.22

Means within the same column followed by the same letter (s) are not significantly different at 5% level of probability for each location.
NS = Not significant.

Number of leaves as shown in Table II, the ten varieties actively developed foliage up till 4 MAP. Thereafter, there was a decrease at 6 MAP. However, there was an increase of foliage between 8 and 10 MAP. There was a significant difference among the 10 varieties in the number of leaves produced

at all growth stages. Variety 01/0131 had the highest number of leaves (137.31) and the least was TME 693 (58.83) at 10MAP.

The cassava leaves exhibited consistent and gradual increase in leaf area at successive months (Table III). The leaf area of the ten varieties increased rapidly up till 4 MAP; beyond which increases in leaf area were only slight. However, increase in leaf area improved from 8 to 10 MAP. There was a significant difference among the ten varieties in leaf area at all growth stages. 92/0326 had the highest leaf area with 579.31cm2 followed by TME 1 with 560.50cm2. 01/0131 had the lowest value among the varieties with 152.33cm2.

The stem girths of the 10 varieties of cassava are presented in Table IV. Generally, stem girth increased steadily from 2 MAP to 10 MAP. There were no significant differences among the ten varieties in stem girth at 4 and 10 MAP, but there were at other growth stages. At 2 MAP, the stems of 01/1797 were thicker (4.50cm) than other varieties while those of 01/1368 were least (3.00cm). Subsequent, determination at 4, 6, 8 and 10 months after planting (MAP), revealed that at maturity (10 MAP) the stem of TME419 plants were thickest with a mean value of 8.4cm compared to those of other varieties.

Table II: Number of leaves/plant of some cassava varieties at derived savanna zone in Delta State

Varieties	(MAP)				
	2	4	6	8	10
IGBODO (Derived savanna zone)					
01/0098	17.83a	62.33bc	40.67bc	63.00b	80.33ns
01/0131	18.67a	112.50a	77.83a	190.33a	137.33
TME 419	19.33a	82.17abc	30.50c	106.17b	69.50
TME 1	17.17a	43.33c	29.00c	67.67b	65.50
TME 693	14.33ab	66.50abc	63.33ab	93.33b	58.83
01/1371	14.17ab	76.17abc	18.17c	83.67b	128.83
01/1797	16.33a	70.83abc	24.83c	65.50b	77.00
01/1368	10.83b	96.00ab	28.83c	87.83b	141.67
92/0326	14.67ab	39.33c	30.83c	66.83b	79.50
00/0388	15.00ab	40.67c	21.33c	93.17b	67.17
Mean	15.78	69.12	36.45	90.67	90.45

Means within the same column followed by the same letter (S) are not significantly different at 5% level of probability for each location. NS = Not significant.

Table III: Leaf area/plant (cm2) of some cassava varieties at derived savanna zone in Delta State.

Varieties	(MAP) 2	4	6	8	10
IGBODO (Derived savanna zone)					
01/0098	398.22ab	573.78ab	303.66ns	405.67a	281.75bc
01/0131	230.87ab	443.45ab	215.00	224.78b	228.11bc
TME 419	464.86a	647.65ab	317.00	502.31a	423.78ab
TME 1	237.47ab	732.86a	389.41	497.42a	560.50a
TME 693	169.56b	594.40ab	148.50	399.66a	254.00bc
01/1371	224.88ab	405.32ab	174.56	211.85b	152.33c
01/1797	312.30ab	623.21ab	276.67	453.67a	220.67bc
01/1368	188.10b	362.56ab	255.45	235.20b	251.12bc
92/0326	375.21ab	689.42a	244.67	529.41a	579.31a
b00/0388	312.87ab	308.30b	314.20	235.78b	249.30bc
Mean	291.45	538.12	263.88	369.58	320.09

Means within the same column followed by the same letter (s) are not significantly different at 5% level of probability for each location.
NS = Not significant

Table IV: Evaluation of stem girth (cm) at derived savanna zone in Delta State

Varieties	(MAP) 2	4 (cm)	6	8	10
IGBODO (Derived savanna zone)					
01//0098	4.40ab	6.75ns	6.82a	6.75ab	7.21ns
01/0131	3.97ab	6.50	6.20ab	7.75a	7.86
TME 419	4.42ab	7.75	5.83ab	7.83a	8.42
TME 1	4.13ab	7.25	6.55ab	6.92ab	8.17
TME 693	3.67abc	6.50	6.20ab	7.00ab	7.11
01/1371	3.75abc	6.08	5.45ab	6.25ab	6.95
01/1797	4.50a	7.25	6.02ab	5.75ab	7.08
01/1368	3.00c	5.67	4.60b	5.00b	6.17
92/0326	3.97ab	6.50	6.55ab	7.08ab	8.08
00/0388	3.62bc	5.50	5.67ab	5.83ab	6.17
Mean	4.01	5.56	6.00	6.56	7.31

Means within the same column followed by the same letter (s) are not significantly different at 5% level of probability for each location. NS = Not significant

The number of main branches on the ten varieties is presented in Table V. Generally, commencement of branching differed among the varieties. Branching commenced for most varieties at 4 MAP. The differences in branching were not significant at early vegetative stages at 2 to 4 MAP.

Table V: Branches/plant of cassava at derived savanna zone in Delta State

Varieties	(MAP) 2	4	6	8	10
IGBODO (Derived savanna zone)					
01/0098	0.00ns	0.00ns	3.67bc	4.33bcd	5.67bcd
01/0131	0.00	0.33	11.00a	11.83a	13.00a
TME 419	0.00	1.00	5.67bc	6.50abcd	7.00bc
TME 1	0.00	0.32	2.17c	3.00dc	4.33cd
TME 693	0.00	0.32	5.17bc	5.67bcd	6.33bc
01/1371	0.00	0.33	8.00ab	8.67abc	9.67ab
01/1797	0.00	0.32	4.00bc	5.00bcd	5.67bcd
01/1368	0.00	0.33	8.83ab	9.33ab	10.00ab
92/0326	0.00	0.33	0.36c	0.67d	1.00d
00/0388	0.00	0.67	1.67c	3.00cd	3.66cd
Mean	0.00	0.43	5.05	5.82	6.63

Means within the same column followed by the same letter (s) are not significantly different at 5% level of probability for each location.
NS = Not significant.

The yield of fresh tubers of the cassava varieties differed significantly (Table VI). Variety 01/1797 was the best yielding variety followed by 01/0098, while the least was 00/0388. The dry matter yields of the cassava varieties were significantly different at Igbodo. Variety 01/1797 produced the highest dry matter value of 2.60 t/ha. This was followed by 01/0098, TME 419, 01/1368, 01/0131, 01/1371, TME 1, 92/0326, TME 693 and 00/0388 in that order. The fresh peel weights of the varieties were significantly different. Variety 01/1371 gave the highest fresh peel weight with a value of 2.17 t/ha. This was followed by 01/0131 (1.53 t/ha), 01/0098 (1.37 t/ha), TME 419 (1.30 t/ha) and 92/0326 (1.27 t/ha) in that order. The dry weights of peels of cassava tubers were significantly different at Igbodo. Variety 00/1797 had the highest dry peel weight with a mean value of 0.14 t/ha followed by 00/0131, 00/0098, TME 419, 00/1368, 92/0326, in that order. At derived savannah zone % dry matter of peels of tubers were significantly different among varieties (Table VI). Varieties 01/1797 had the highest % peel dry matter at a value of 11.4%. The % dry matter of cassava tuber was not significantly different at the Igbodo farm site. TME 1 had the highest dry matter percentage with a mean value of 31.5%. This was followed by 01/1371, 01/0098, TME 693, 01/0388, 01/1797, 01/1368, 01/0131, 92/0326 and TME419, in that order.

Table VI: Yield of some cassava varieties at derived savanna zone in Delta State

Variety	Fresh tuber weight	Dry Matter weight	Fresh peel weight	Dry peel Peel	Dry Matter tuber	Dry Matter tuber
	← t/ha →				← % →	
IGBODO (Derived savanna zone)						
01/0098	7.67ab	2.30ab	1.37bc	0.10b	7.30b	30.0ns
01/0131	5.87bc	1.80cd	1.53b	0.11b	7.19b	30.7
TME 419	6.93ab	2.13bc	1.30bc	0.10b	7.69b	30.7
TME 1	4.66cd	1.47de	1.17cd	0.09b	7.69b	31.5
TME 693	4.10de	1.27e	0.90de	0.07c	7.78b	31.0
01/1371	4.90cd	1.53de	2.17a	0.10b	4.61c	31.2
01/1797	8.50a	2.60a	1.23c	0.14a	11.4a	30.6
01/1368	6.23bc	1.83cd	1.13cd	0.10b	8.85b	29.4
92/0326	4.60de	1.30e	1.27bc	0.10b	7.87b	28.3
00/0388	2.63e	0.80f	0.70e	0.05d	7.14b	30.4
Mean	5.61	1.70	1.28	0.10	7.75	30.4

Means within the same column followed by the same small letter(s) are not significantly different at 5% of level of probability for each location.
NS = Not significant.

DISCUSSION

The adaptation of some selected cassava varieties on the growth and yield of ten cassava varieties at Igbodo without fertilizer application were carried out in order to determine their adaptation under native nutrient condition. The differential responses of the cassava varieties with respect to vegetative characters and tuber yield at the derived savanna zone is in consonance with previous finding of Hahn and Chukwuma (1986), Hahn et al. (1986), Otoo (1986), Ezedinma (1989), Kalabare and Momoh (1989), Otoo et al. (1989), Utomakili & Enobakhare (1995); and Agba,Ogar, and Odeh (2005).

Consequently, the results from this study showed that the most outstanding variety among the ten evaluated, was 01/1797 (8.50t/ha) and therefore could be cultivated at Igbodo in a derived savanna zone of Delta State. This observation is indicative of the effect of varieties on performance of cassava (Otoo, 1986). The difference could be as a result of variation in soil native nutrient status and micro-climatic conditions.

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ASSESSING THE PROFITABILITY OF LOCAL EATERIES IN IFE CENTRAL LOCAL GOVERNMENT AREA OF OSUN STATE.

Ojubanire, O. A., Oye, G. A. and Uthman, D. S.
Department of Family, Nutrition and Consumer Sciences,
Obafemi Awolowo University, Ile-Ife.

Correspondence email: banireoa@gmail.com,

ABSTRACT
This research assessed the profitability of local eateries in Ife Central Local Government Area of Osun State. Specifically, the study assessed the socio-economic characteristics of the respondents, identified purchasing practices prevalent among local eateries, identified inventory management practices and examined the extent of collaboration and integration between the eateries and their raw material suppliers. Convenience sampling was used to select 65 local eateries while closed ended questionnaire was used to elicit data from the respondents. The data collected were analyzed using descriptive statistics such as frequency counts, means and percentages. The hypothesis was tested using the Pearson's correlation analysis. The findings revealed that 55.4 percent of the respondents were male and 43.1 percent had a Higher National Diploma or Bachelor's degree, 66.2 percent had a multiple-supplier base, 67.7 percent encountered problems due to supply and most (83.1% & 66.1%) used negotiation and bargaining and had good supplier relationship respectively. Also, non-specific method of inventory management was mostly in use (40.0%), physical surveys were often used to determine when to restock (46.1%) while new stocks were immediately received on ordering (58.5%) and crosschecked on delivery (75.4%). A fairly high grand mean (3.49) showed that most of the respondents agreed to the various statements on the extent of collaboration between the buyers and sellers. The correlation results showed a significant relationship between purchasing practices (r=0.261, p=0.036), inventory management practices (r=0.314, p=0.011) and profitability. The study concluded that although the local eateries showed increased profitability, they practiced fair purchasing and inventory management practices.

Keywords: Purchasing practices, inventory management, local eateries, profitability

INTRODUCTION
Purchasing and inventory management are an integral part of production. They are two sides of the same coin. Purchasing has obtained popularity, and is now seen as a key value adding function that is viewed as strategic to the firm's successful performance (Cousins, 2005). As a result, organization can no longer avoid the importance of purchasing function as every business is striving hard to reduce its cost of delivering its unique products and services to their customers and in the meantime protect the interest of stake holders in the current uncertain and volatile business environment (Monczka, Trent & Handfield, 2004). Many researchers on supply chain agreed commonly that new millennium competition will be focusing on firms efficient and effective supply chains (Carter & Ellram, 2003). Purchasing is a prominent support activity in manufacturing process to create value through purchase of inputs, services and facilities needed to produce a firm's product. Cost of purchase reduction has bigger impact in increasing the profit of an organization compare to other functional activities in an organization (Arnold & Chapman, 2004).

In this context the lean production principle pioneered by Womack, Jones & Roos (1990) has been linked with reduced level of inventories (Rajagopalan & Kumar, 1994; Herer, Tzur, & Yucesan, 2002; Wickramatillake, Koh, & Gunasekaran, 2006) even if volatility of demand may limit the application of this principle. On the other hand, too little inventory often disrupts manufacturing operations, and increases the likelihood of poor customer service. Good customers may become incensed and take their business elsewhere if the desired product is not immediately available. A lot of resources have been devoted into research in the inventory management practices of

organizations. It represents one of the most important assets that most businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company. In the manufacturing companies, nearly 60% to 70% of the total funds employed are tied up in current assets, of which inventory is the most significant component. Thus, it should be managed in order to avail the inventories at right time in right quantity. Inventory can be also viewed as an idle resource which has an economic value. So, better management of the inventories would release capital productively (Carter, 2002).

Any organisation or firm that seeks to thrive in a competitive market must realise that one of the most important factors to take note of is cost management. Effective cost management refers to identification of cost considerations beyond unit price, transport and tooling. This process considers various cost components which not only add value to product or service such as quality, technology, flexibility, service and cycle time (Giunipero, Handfield & Eltantawy, 2006) but also emphasize on negative elements which increase the cost such as late delivery, poor quality and other forms of non-performance of supplier. This will be key element as driving forces in global competition and determine purchasing decision on business awarding process. This factor is considered a major part of purchasing affecting performance and profitability in manufacturing. Janda and Seshadri (2001) found that each percentage saved in purchasing price can save 0.5% in sales thereby contributing significantly to reducing costs. In dealing with food commodities, buyers face not only the risk of inadequate supply but also the price risk inherent in seasonal and potentially volatile commodity markets. For example, seasonality and the need for buying products globally (e.g., coffee or cocoa) extends the lead time between when the purchasing commitment could be made and when the actual product is needed/used. This extended lead time increases price risk but also increases the need for assurance of supply (Egberi & Egberi, 2011). Perishability and quality add risk components as well. Hayenga (1979) points out that the timing of commodity purchases can have a significant influence on unit costs for a firm. Commodity purchasing therefore represents an area on which food buyers should focus in order to improve profit, service, and/or quality and to with- stand pressures to reduce price. The most basic function of a food buyer's commodity-purchasing department is to maintain commodity supply in order to meet production demands. Managing supply risk is an essential element of this function and is critical to successful supply management (Zsidisin & Ellram 2003).

Therefore, for an organization to obtain maximum profit in its production there is need for the organization to ensure adequate and efficient utilization of its resources through its management of materials. Inventories exist in a manufacturing organisation in forms of raw materials, work-in-process, as well as finished goods (Pandey, 2007). Adeniyi (2004) was of the opinion that, a firm can also keep adequate inventories on materials in various forms to ensure profit for the organization. This shows that inventories serve as a link between the production and consumption of goods. With inventories held, there is the need for adequate utilization of these resources to achieve the objectives of the organization which is the essence of management (Hirst, 2013). The essence of this study is to explore the practices of purchasing and inventory management of fast food companies and its effect on company's profitability. Purchasing is viewed to deliver value by reducing cost of acquiring products or services in firms which will directly improve the profit margin (Giunipero, Handfield & Eltantawy 2006).

Joel (1990), defines profit as income occurring to the equity holders, in the same sense as wages accrue to the labor, rent to the owners of rentable assets, and interest accrue to money lenders. Numerous studies have pointed out the importance of gross-margin management in the profitability of a company (Stasz, 2003), even though a company is selling more than a year before, profits can still be sinking (Thompson, 2010). Profitability in a restaurant can be improved but this should not be done to the customers' expense. In a quick service restaurant, profitability can be affected by even small everyday actions such as a make or buy decision, service process among others (Thompson, 2010). This study is of the view that the operators in the industry should adopt a holistic operating

model that improves inventory productivity, enhances sales margin, and saves millions of naira in operating costs and especially on costs associated with purchasing and inventory. Saving costs on inventory starts with a comprehensive organizational focus on inventory management. Therefore, the focus of this study is achieving profitability through effective management of inventory with emphasis on purchasing, receipt of materials, holding and ordering costs, inventory control, and buyer-supplier collaboration.

Statement of the problem

Recent development in Nigeria's economic climate creates uncertainty on business environment. The wide distance between the source of raw materials and local manufacturers which include food production outlets in Nigeria has posed a great problem to management. Thus most local eateries may not predict with certainty as per delivery time of their daily operations.

In Nigeria today, eateries especially local small scale producers, are in tremendous pressure to save their businesses while protecting the stakeholders' interest. Although purchasing only plays supporting role in manufacturing organization but its strategies creates significant contribution on manufacturing performance. Therefore, firms should emphasize focusing on purchasing strategies such as effective negotiation, supplier relationship and interaction; and effective cost management as drivers for their excellent performance in this uncertain market condition. Research has shown that the study of inventory management or administration started late, unlike the study of other fields of human endeavour, such as medicine, engineering and law, to mention a few. Therefore, how does the management of local eateries ensure that there is no hitch and delay in the purchase and supply of raw materials to satisfy their day to day requirements without necessarily keeping excessive stock of raw materials? And if excessive stock is kept, how well managed are they? This research aims to provide answers to these questions.

Objectives of the study

The main objective of the study is to assess the profitability of local eateries in Ife Central Local Government Area of Osun State. The specific objectives were to:

i. assess the socio-economic characteristics of the respondents
ii. identify purchasing practices prevalent among local eateries;
iii. identify inventory management practices; and
iv. examine the extent of collaboration and integration among the eateries and their suppliers.

Hypothesis

Ho: There is no significant relationship between purchasing practices,inventory management practices and profitability.

METHODOLOGY

The study was carried out in Ife central Local Government Area of Osun State. A pre-pondering majority work in public institutions while others are traders and artisans. The local Government is thickly populated by Yoruba speaking people of south west zone of Nigeria and other ethnic groups like Hausa, Igbo, and foreigners. Due to the increasing population of students, a large number of eateries are found in Ife central local government. The most popular and most recognised ones include Mr. Biggs, Tantalizers, Captain Cook, Banwill Cuisines, Guess, Ongbona, Indulge, Rotunda (Gruby's), Kay's Chippy, to mention a few. There are also many other nameless roadside local eateries which were the major focus this study. The target population of the study were purchasing officers, inventory managers or stock keepers of eateries in Ife Central Local Government, Convenience sampling was used to select 65 eateries. A structured closed-ended questionnaire was used to collect information from 65 purchasing officers and inventory managers. The data collected from the respondents were analysed using Statistical Package for Social Sciences version 20. Specifically, objectives were analysed and described using frequency distributions and percentages. The hypothesis was tested using Pearson's correlation analysis.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

Table I shows that 55.4 percent of the respondents were male, 44.6 percent were female and the mean age was 37 years. Majority, (60.1%) were Christians, 36.9 percent were Muslims while 3.0 percent were traditional worshipers. 43.1 percent were married while 43.1 percent had a Higher National Diploma or Bachelor's degree. This implies that the local eateries were managed mostly by men with Higher National Diploma or Bachelor's degree.

Table I: Socio-economic characteristics of respondents n= 65

Socio-economic characteristics	Frequency	Percentage
Gender		
Male	36	55.4
Female	29	44.6
Age (years)		
≤20	04	6.1
21 – 30	23	35.3
31 – 40	09	13.9
> 40	29	44.7
Mean ±SD = 37±3.17		
Religion		
Christian	39	60.1
Muslim	24	36.9
Traditional worshipers	02	3.0
Marital Status		
Single	24	36.9
Married	28	43.1
Separated/Divorced	03	4.6
Widowed	10	15.4
Highest Educational Qualification		
Senior School Certificate	18	27.7
National Diploma	06	9.2
Higher National Diploma/Bachelors	28	43.1
Others	13	20.0

Source: Field survey, 2017

Purchasing practices of respondents

Table II shows that most (66.7%) of the respondents operated multiple supplier, 83.1 percent used negotiation and bargaining while 16.9 percent did not. In bargaining, majority (67.7%) sought to get the most possible value for their money while 32.3 percent sought to ensure both buyer and suppliers were favored from the deal. Also, 67.7 percent had encountered various problems such as delayed supply, supply of substandard products and so on, in purchasing, most (87.7%) of the respondents rarely encountered supply problems while 21.3 percent encountered such problems very often. This shows that most eateries in the study area practiced multiple-supplier purchasing system, using bargaining and negotiation power to get the most value for their money. This agrees with Ramsay (2004), who reveals that the key to managing business relationships between sellers and buyers lies

in the process of negotiation Purchasing problems such as delay, disappointments and supply of sub-standards were rarely encountered.

Furthermore, 69.2 percent did not make any of the materials used in production, 90.8 percent used a pay-on-delivery payment system, and 66.1 percent had good relationship with their suppliers. This implies that most materials used in the eateries were purchased, payments were made on delivery and there were good buyer-supplier relationship. This corroborates Trent (2004) which opined that firms want to develop partnership relationships rather than simply having a traditional relationship where buyers just receives supplies from suppliers.

Table II: Purchasing practices of respondents n = 65

Purchasing practices	Frequency	Percentage
Type of supplier base		
Single-supplier	15	23.1
Multiple-supplier	43	66.2
No definite supplier	7	10.8
Use of Negotiation and bargaining		
Yes	54	83.1
No	11	16.9
What do you seek in bargaining		
Seek to get most possible value for money	44	67.7
Seek to ensure both you and your supplier are favoured	21	32.3
Encountered problems due to supply		
Yes	44	67.7
No	21	32.3
How often do you Encountered problems due to supply		
Very often	8	12.3
Rarely	57	87.7
Do you make your production inputs		
Yes	20	30.8
No	45	69.2
Payment type		
pay on delivery	59	90.8
Installment payment	3	4.6
Credit purchase	3	4.6
Relationship with supplier		
Good	43	66.1
Fair	19	29.3
Non-existent	3	4.6

Source: Field Survey, 2017

Inventory management practices

Results in Table III show that 40.0 percent used a non-specific interval of inventory, 46.1 percent used physical survey to determine when to restock, also, more than half (58.5%) received new supplies immediately after ordering, 75.4 percent assessed the goods supplied by cross-checking while 56.9 percent varied the quantity of raw materials bought. This implies that the inventory interval was non-specific and based on physical survey and new stocks were received promptly. This agrees with Slack, Chambers and Johnston(2004), that traditional inventory management is just to purchase goods from outside seeking best and prompt supplier per time.

Table III: Inventory management practices. n = 65

	Frequency	Percentage
Inventory interval		
Just In Time	10	15.4
Weekly	20	30.8
Monthly	9	13.8
Non-specific	26	40.0
Determinants of restocking		
Physical survey	30	46.1
Fixed-order-Quantity	16	24.6
Fixed-period-ordering	19	29.3
Promptness of new stock arrival		
Receive new supplies immediately	38	58.5
Wait a period of time for new stocks to arrive	27	41.5
Method of assessing goods supplied		
Cross check	49	75.4
Based on trust	16	24.6
Quantity of raw materials		
Fixed	28	43.1
Varied	37	56.9

Source: Field Survey, 2017

Constraints affecting purchasing and inventory management practices

Results in Table IV show that the major constraints affecting purchasing and inventory practices include storage requirements (70.8%), budget constraints (66.2%), price risk (63.6%), and perishability (60.0%). This implies that storage requirements, budget constraints, price risk and perishability are major constraints affecting purchasing and inventory management practices in the food industry. This agrees with Jones et al (2007) that the aforementioned constraints affect the methods of purchasing and inventory in the food industry.

Table IV: Constraints affecting purchasing and inventory management practices

Constraints	Frequency	Percentage
Storage requirements	46	70.8
Budget constraints	43	66.2
Price risk	42	63.6
Perishability	39	60.0
Market efficiency	38	58.5
Seasonality	34	52.3
Storage availability	33	50.8
Supplier service level	30	48.1
Volume	29	44.6
Traceability	25	38.5
Commodity cost share	25	38.5
Sales forecast accuracy	25	38.5
Sales promotion	22	33.8

Source: Field Survey, 2017

Extent of collaboration and integration betweenlocal eateries and their suppliers

Results in Table V show a high agreement index (4.07) with the statement "our suppliers are business partners". The statement "we retain the supplier for more than two years" had a strong agreement index of 3.89, exploration of solutions provided by suppliers had a fairly high agreement index of 3.66 while knowledge of the strengths and weaknesses of suppliers had a somewhat strong agreement index (3.54). Also, more of the respondents agreed to the statements "we present strategic information to our suppliers" (3.49), "we involve our suppliers in product improvement" (3.41), "we involve our suppliers in new product development" (3.34) while "our suppliers could access our technical and managerial know-how" had a negative response with an agreement index of 2.54 which revealed that majority disagreed to the statement. However, the grand mean (3.49) showed that most of the respondents agreed to the various statements. It can be inferred that the buyers and sellers were partners, always sharing information and there is a good and collaborative buyer – seller relationship among the eateries and the suppliers. This validates the theory from Shin, Collier and Wilson (2000) which supported the idea that within partnership relationships, suppliers and customers always share information, for the supplier, the advantages included reduced uncertainty from the purchaser, and on the other side, the purchaser also hopes to achieve improved supply continuity.

Table V: Extent of Collaboration between eateries and their raw material suppliers

Statements	SA	A	D	SD	U	Mean	SD
Our suppliers are business partners	33.8	53.8	4.6	1.5	6.2	4.07	0.70
We present strategic information to our suppliers	13.8	55.4	12.3	3.1	15.4	3.49	0.94
We retain the same suppliers for more than two years	23.1	63.1	3.1	1.5	9.2	3.89	0.58
We involve our suppliers in product improvement	13.8	55.4	7.7	4.6	18.5	3.41	0.93
We know the strength and weaknesses of our suppliers	13.8	56.9	10.8	6.2	12.3	3.54	1.10
Our suppliers could access our technical and managerial know-how	10.8	7.7	26.2	35.4	20.0	2.54	1.73
We explore solutions provided by our suppliers	20.0	58.5	3.1	4.6	13.5	3.66	0.86
We involve our suppliers on new product development	12.3	50.8	13.8	4.6	18.5	3.34	1.05

Source: Field Survey, 2017 **Grand mean = 3.49**

Profitability of local eateries

Results in Table VI show that 83.1 percent stated that sales had grown in the past two years, 69.5 percent indicated that their business had expanded in last two years and 52.3 percent of them asserted their employee base had increased in the past two years. Given the growth in sales, expansion in business and increased employee base, it can be inferred that the food industry is profitable. This corroborates Jones (2004) which stated that although food waste in fast food industry can be up to 9.55 percent, the industry is still a profitable one.

Table VI: Profitability of local eateries

Indicators	Frequency	Percentage
Sales have grown in past two years	54	83.1
Business expanded in last two years	45	69.5
Employee base has increased in past two years	34	52.3
Sales of asset will cover outstanding debt	10	15.4
Employee downsized in past two years	9	13.8
Business has outstanding debt	08	12.3

Source: Field Survey, 2017 *** Multiple Responses**

Hypothesis testing

Ho: There is no significant relationship between purchasing practices,inventory management practices and profitability.

The results of correlation analysis in Table VI show a positive and significant relationship between purchasing practices (r=0.261, p=0.036), inventory management practices (r=0.314, p=0.011) and profitability. This means that improvement in purchasing practices and better inventory management practices cause increase in profitability. Hence, the null hypothesis is rejected.

Table VII: Result of Correlation analysis showing relationship between purchasing practices, inventory management practices and profitability

Variables	Correlation coefficient(r)	Determinant of coefficient (r2)	Significant level (p)
Purchase practices	*0.261	0.068	0.036
Inventory management	**0.314	0.099	0.011

*correlation is significant at 0.05 level.
** correlation is significant at 0.01 level

CONCLUSION AND RECOMMENDATIONS

The study concluded that local eateries used multiple-supplier purchasing method, paid for goods purchased upon delivery and inspection, and had good relationships with their suppliers Also, a non-specific inventory interval was prevalent, restocking was determined by physical survey and order quantities were not fixed. Furthermore the study revealed that local eateries maintained a good collaborative and integrative buyer-seller relationship and that improvement in purchasing and inventory practices caused an increase in profitability of eateries.

Based on the findings, the study recommended that local eateries should make efforts to maintain and seek improve on the existing buyer-seller relationship. Also, attention should be given to improving on the purchasing and inventory management practices to further enhance business profitability.

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SKILL ACQUISITION FOR ENTREPRENEURIAL DEVELOPMENT OF HOME ECONOMICS STUDENTS IN NIGERIAN UNIVERSITIES

Oga, M. O. and Ezema, P. N.
Department Of Home Economics and Hotel Management and Tourism,
Michael Okpara University of Agriculture, Umudike, Nigeria
okechioga@googlemail.com, 07062132336
raikecilia@yahoo.com; 08037178602

ABSTRACT
The study identified the challenges faced by Home Economics Students in acquisition of skills. Two research questions guided the study and two hypotheses were tested. The study was conducted in some selected Universities in South Eastern Nigeria that offer Home Economics. Two hundred and seventy three (273) students formed the population for the study. A purposive sampling technique was adopted to select one hundred and forty six (146) Home Economics students in 300 and 400 levels in the different Universities studied. A self-designed questionnaire consisting four point Likert scale questions was used to collect quantitative data from the respondents. Mean scores were used in analysing the data. The study revealed some challenges faced by students as limited time allotted to practical (mean =3.46); absence of streamlined practical on skills (mean = 3.38), inadequate facilities (mean = 3.42) among others. On the other hand, the study revealed that provision of laboratory equipment (mean = 3.92), demonstration teaching (mean = 3.80), embracing technology and innovations (mean = 3.80) among others are some of the ways necessary to improve learning of skills. It was recommended that modules should be made to guide students on what to accomplish in each session on crafts and other clothing practical. Also there should be exhibitions at the end of every session to show case what students have done within a particular session. This will encourage other students and lecturers to work harder in the areas of practical. Workshops or short courses should be organised to teach Home Economics students' new skills and others.

Keywords: Home Economics, Skill acquisition, Entrepreneurship, Development, University.

BACKGROUND OF THE STUDY
Entrepreneurship according to Utomi as cited in Achor, (2014) is concerned with the persistent pursuits of opportunities to create wealth through creation of products or services that meet customer's needs. Akunnaya, (2012) defines entrepreneurship skills as those skills that will enable the individual to maximise the resources around him within the limits of his capabilities. If the ability of individuals to utilise resources around them is tied to their capacity, there is a need to build and enhance capacity towards resource utilisation for job and wealth creation .Entrepreneurship competencies can be possessed by an individual who is exposed to a planned process of entrepreneurship education. Many efforts are being put in place to promote entrepreneurship through education, such as vocational education which includes Home Economics.

Home Economics is a skill oriented field of study, noted for the capability of equipping the learners with saleable skills that make for self-reliance and self-employment .It is applied field of study, build upon by many disciplines for the sole aim of achieving and maintaining the wellbeing of individuals and families (Lemchi, 2001). Anyakoha (2004) stated that Home Economics as a vocational course has intensified emphasis on skill acquisition for graduates with a view to enhancing their capacity for self-employment. This subject poses the ability of helping in the

reduction of unemployment problems in Nigeria. It is one of the courses offered in Nigerian Universities and other institutions of higher learning. Njoku (2002) noted that Home Economics encourages expansion of Knowledge and development of skills in the following areas among others, skills in foods and nutrition, which include bread making, preparation of snacks such as sausage rolls meat pies chin-chin buns cakes and others.. skills in clothing and textiles, which include, clothing construction dry cleaning, clothes repairing, dyeing, batik making, Embroidery, weaving, knitting, bead work, hair dressing and other crafts. Skills in Home management include interior and exterior decoration toys production day care and nursery management and others. It also enables the learners to develop logical thinking that can challenge their imaginative abilities and enable them to exhibit their human creativity. The fact is that skill training leads to the development of survival competencies.

Skill is referred to expertness practiced ability, dexterity and tact. According to Okorie (2000) skill is an organised sequence of action proficiency executed and usually displaying flexible systematic temporal pattern Njoku as cited in Ohwovoriole (2004) stressed the fact that skill training leads to the development of survival competencies. Acquisition of such skills alongside other entrepreneurial skills can help Home economics graduates to explore locally available resources and utilise them to become entrepreneurs to enhance sustainable development. Therefore it is necessary to expose the students to various skills. One of the missions of tertiary education in which University education is one is to produce skilled persons that are capable of playing effective roles in National economy, technological growth and development, (Lemchi, 2001).

Statement of problem
Home Economics is one of the courses offered in the University. Okpara, (2005) described Home Economics as a skill oriented decision making subject that equips learners with saleable skills and knowledge which help them to be self-employed and at the same time contribute effectively to the socio- economic development of the family and society. But from observation and studies carried out by some scholars, it has been noted that most graduates of Home Economics do not have mastery of most of these numerous skills in the programme such that most of them go for readymade products when given practical assignment some even on graduation cannot even paddle a sewing machine or draft pattern among others without assistance. This is a problem; therefore this study sought to identify the challenges faced by these students in learning these skills and suggest ways of ameliorating these challenges.

Objectives of the study
The main objective of the study was to study skill acquisition for entrepreneurial development of Home Economics students in Nigerian Universities
Specifically, the study:
1. identified the challenges faced by Home Economics students in acquiring skills taught in Home economics programme of Nigerian Universities; and
2. suggested ways of improving the learning of skills in Home Economics programme of Universities in Nigeria

Research questions
The study sought answers to these research questions.
1. What are the challenges faced by students in acquisition of skills in Home Economics programme?
2. What ways could these challenges faced by students in learning skills be alleviated?

Hypotheses

Ho_1: There is no significant difference in the mean responses of students in the four Universities on challenges faced in skill acquisition

.Ho_2: There is no significant difference in the mean responses of students on ways of improving the learning of skills acquisition in Home Economics programme of Universities.

METHODOLOGY

Design of the study

The study adopted survey research design. It involved using self-designed questionnaire in collecting data from the respondents. The study was carried out in some states in the South Eastern part of Nigeria. Specifically it was carried out in all the Universities that offer Home Economics which include, Abia State University, Uturu (ABSU), Michael Okpara University of Agriculture, Umudike (MOUAU), Ebonyi State University, Abakiliki (EBSU) and University of Nigeria Nsukka (UNN).

Population for the study

The population for the study comprised two hundred and seventy three (273) students. This is made up of five (5) in ABSU; one hundred and seven (107) in MOUAU; fifty six (56) in UNN and one hundred and five (105) in EBSU.

Sample and sampling technique

The sample size is one hundred and forty six (146). A purposive sampling technique was adopted to select 300 and 400 level students of the different Universities. This was done on the basis that these students have acquired some knowledge about the programme under study within the three to four years of study in the department.

Instrument for data collection

Questionnaire was used to collect data from the respondents. The questionnaire has two sections, section A and B: A addressed research question one while B addressed research question two. The responses for the two sections were strongly agreed=4, agreed =3, disagreed =2, and strongly disagreed=1. The instrument was validated by five lecturers of the Department of Home Economics/Hotel Management and Tourism, Michael Okpara University of Agriculture Umudike. For reliability, the instrument for this study was pretested on nine (9) respondents; the data obtained were tested using Cronbach's Alpha reliability test. Reliability coefficient of 0.85 was obtained.

Data collection technique

The researcher administered the questionnaire by hand with the help of four research assistants. The questionnaire was issued and collected within an average period of two weeks. A total of one hundred and forty six questionnaires were distributed but one hundred and thirty three were properly filled and returned. So the study used the questionnaires that were properly filled and returned.

Data analysis

Data obtained from the study was analysed statistically using means and standard deviation. The two sections have four responses with the following scaling, 4, 3, 2, and 1 corresponding to strongly agreed, agreed, disagreed and strongly disagreed, respectively. Therefore, a mean score of 2.5 and above was accepted while mean scores below 2.5 was rejected. The Statistical Package for Social Sciences (SPSS) version 17.0 was used to analyse data. The hypotheses for the study were tested using ANOVA at 0.05 significant levels.

RESULTS AND DISCUSSION

The findings of the study were presented based on the research questions and hypotheses.

Table I: Mean responses of students on challenges faced in skill acquisition

S/NO	Challenges faced in skill acquisition.	X	SD	RMKS
1	Limited time allotted to practical	3.46	0.83	A
2	Inadequate equipment and facilities	3.42	0.86	A
3	Lack of qualified skilled lecturers	2.81	1.08	A
4	High cost of materials for learning skills.	3.30	0.92	A
5	Poor funding from the school	3.25	0.95	A
6	Lack of adequate support from parents.	1.99	1.01	D
7	Lecturers adopt teaching methods that cannot adequately impact the skill and knowledge to students	2.98	1.07	A
8	Poor perception of the importance of skill acquisition by students and parents.	2,57	1.16	A
9	Students lack interest in practical classes because the projects given to them do not reflect their needs and interest.	2.42	1.12	A
10	Students cannot provide materials for practical.	2.58	1.09	A
11	Lack of simplified books on skill acquisition	3.31	0.80	A
12	Inadequate supervision of students practical	2.94	1.01	A
13	Lecturers not teaching the skills well.	2.95	1.10	A
14	Absence of streamlined skills to learn.	3.38	0.82	A
15	Inadequate curriculum	3.07	1.09	A
16	Inadequate instructional materials.	3.33	0.96	A

X-students mean response, SD-standard deviation, rmks-remarks, A-agreed, D-disagreed, n = sample size

Table I shows the result of the mean and standard deviation of the responses of students on challenges faced in skill acquisition. It shows that fifteen (15) challenges had means above the criterion level; the challenges include limited time allotted to practical, inadequate facilities and others. This signifies that the students accepted that fifteen challenges out of the sixteen identified challenges affects students in learning skills, they disagreed to no 6, challenge which is lack of adequate support from parents which had a mean response of 1.99 and standard deviation of 1.01 which is below the criterion level.

Table II: Ways of improving learning of skills in Home Economics programme

S/NO	Ways of improving the learning of skills	X	SD	RMKS
1	Using instructional materials	3.80	0.40	A
2	Using demonstration method of teaching	3.80	0.40	A
3	Employing qualified staff	3.80	0.40	A
4	Provision of digital technology and internet services	3.80	0.40	A
5	Provision of Laboratory equipment	3.92	0.27	A
6	Provision of craft text books	3.80	0.36	A
7	Provision of fund	3.73	0.45	A
8	Using resource persons to teach crafts	3.76	0.42	A
9	Embarking on field trips	3.73	0.53	A
10	Organizing workshops and seminars	3.73	0.53	A
11	Making skill acquisition a course of its own.	3.46	0.70	A
12	Training and retraining staff due to changes occasioned by technological development (innovations)	3.57	0.50	A
13	Provision of good learning environment	3.65	0.48	A
14	Including new and relevant topics in the curriculum to meet the challenges of nation building	3.50	0.58	A
15	Appropriate and adequate staffing	3.65	0.48	A
16	High moral discipline and academicstandard among lecturers	3.53	0.58	A
17	Establishment of effective monitoring to ensure strict adherence to standard	3.57	0.57	A
18	Ensuring that the scheme of work is covered early before exams	3.61	0.49	A
19	Ensuring that students knowledge are tested	3.61	0.63	A
20	Arranging craft projects in modules to enable lecturers know what to accomplish each semester	3.57	0.64	A

X1-students mean response, X2 lecturers mean response SD-standard deviation, rmks-remarks, A-agreed, D-disagreed.

Table II shows the result of the responses of students on the ways of improving skill acquisition of students. All the items enlisted on the table had mean responses above the criterion level, which means that respondents agreed to the twenty two ways suggested as ways of improving skill acquisition by Home economics students in the Universities.

Table III: ANOVA result on challenges faced by students in learning skills

	Challenges faced in learning crafts by students	Mean responses of the respondents				F-cal	F-tab	Rmk
		UNN	MOUAU	EBSU	ABSU			
1	Limited time allotted to practical	3.50	3.8	3.50	4.00	0.415	0.744	NS
2	Inadequate equipment and facilities	3.50	3.00	3.50	4.00	1.101	0.370	Sig
3	Lack of qualified/skilled lecturers in craft	3.50	2.50	2.50	1.75	1.797	0.177	Sig
4	High cost of materials for learning skills	3.50	3. 10	3.00	4.00	1.403	0.268	Sig
5	Poor funding from the school.	3.50	3.20	3.83	4.00	1.164	0.346	Sig
6	Lack of adequate support from parents.	3.66	2.80	3. 66	3.75	1.551	0.230	Sig
7	Lecturers adopt teaching methods that cannot adequately impact the skill and knowledge to students.	2.50	1.70	1.83	1.75	1.018	0.404	Sig
8	Poor perception of the importance of skill acquisition by students and parents.	3.00	2.90	3. 66	3.00	2.156	0.122	Sig
9	Students lack interest in practical classes because the projects given to them do not reflect their needs and interest.	3.50	1.90	3.33	3.00	6.879	0.002	Sig
10	Students cannot provide materials for practical.	3.00	2.70	3.16	3.00	0.354	0.787	NS
11	Lack of simplified books on skill acquisition	3.66	3.70	3.50	2.75	3.634	0.029	Sig
12	Inadequate supervision of students practical	2.83	2.70	2.83	2.00	0.603	0.620'	NS
13	Lecturers not teaching the skills well	2.83	1.90	2.66	1.00	3.968	0.021	Sig
14	Absence of streamlined skills.	2.66	3.40	2.50	4.00	4.844	0.010	Sig
15	Inadequate curriculum	3.00	3.40	2.50	1.00	7.940	0.001	Sig
16	Inadequate Instructional material	3.00	3.00	3.50	4.00	2.791	0.064	Sig

sig, significant, Ns, Not Significant, fcal-f calculated, f-tab-f- tabulated, rmks-remarks, X1—UNN, X2-MOUAU,X3-EBSU,X4-ABSU

Table III shows that there were significant differences in the mean responses of students on challenges faced in learning skills, the ANOVA test at 0.05 significant level on the challenges faced by students in learning skills shows that F-calculated was greater than F-tabulated therefore the null hypothesis was rejected while the alternative hypothesis was accepted.

Table IV: ANOVA result on ways of improving the skill acquisition of students in Home Economics Department.

S/NO	Ways of improving the skill acquisition	UNN	MOUAU	EBSU	ABSU	F-CAL	F-TAB	Rmks
1	Using instructional materials	4.00	3.67	3.80	43.8	2.52	0.06	Sig
2	Using demonstration method of teaching	3.88	3.81	4.00	3.82	0.45	0.72	Ns
3	Employing qualified staff	4.00	3.76	3.80	3.77	2.45	0.68	Sig
4	Provision of digital technology and internet services	3.96	3.57	3.60	3.35	3.76	0.01	Sig
5	Provision of laboratory equipment	3.96	3.57	3.60	3.35	1.55	0.21	Sig
6	Provision of text books on skill acquisition	3.96	3.72	4.00	3.77	1.76	0.59	Sig
7	Provision of fund	4.00	3.68	3.80	3.50	4.35	0.06	Sig
8	Using resource persons to teach skills	3.96	3.67	3.80	3.57	2.17	0.96	Sig
9	Embarking on field trips	3.92	3.76	3.00	3.57	2.99	0.34	Sig
10	Organizing workshops and seminars	3.56	3.73	4.00	3.63	1.10	0.35	Sig
11	Making skill acquisition a course of its own	3.60	3.73	4.00	3.75	0.00	0.00	Ns
12	Training and retraining staff due to changes occasioned by technological development worldwide (innovations)	3.92	3.62	4.00	3.60	0.83	0.48	Sig
13	Including new and relevant topics in the curriculum to meet the challenges of nation building	3.96	3.54	3.80	3.77	2.78	0.05	Sig
14	Adequate and appropriate staffing	3.68	3.43	4.00	3.58	1.43	0.24	Sig
15	High moral discipline and academic standard among students	3.64	3.41	3.40	3.63	1.20	0.31	Sig
16	Establishment of effective monitoring to ensure strict adherence to standard	3.76	3.37	3.20	3.60	2.18	0.95	Sig
17	Ensuring that the scheme of work is covered early before exams	3.76	3.88	3.96	3.73	0.08	0.97	Ns
18	Ensursing that students practical knowledge are tested	3.80	3.51	3.00	3.62	4.00	0.01	Sig
19	Arranging skill projects in modules to enable lectures no what to accomplish each semester	3.64	3.32	3.80	3.60	1.66	0.18	Sg
20	Organizing exhibition of students practical work each session	3.84	3.89	4.00	3.60	3.18	0.27	Sg
21	To encourage students to work harder.	3.88	3.70	3.00	3.95	11.089	0.00	Sg
22	Proper supervision of students industrial training	3.60	3.73	4.00	3.75	2.79	0.06	Sg

UNN, MOUAU, EBSU, ABSU, Level of significance 0.05 ,sig, significant, Ns, Not Significant,fcal-f calculated, f-tab-f- tabulated, rmks-remarks

Table IV shows the ANOVA test on ways of improving skill acquisition. The result shows that there were significant differences in the mean responses of the students on ways of improving the skill acquisition. The f-cal was greater than the f-tabulated in 15 items out of 22; therefore the null hypothesis was rejected while the alternative hypothesis was accepted. Despite the significant difference in the responses of students they all agreed to the different ways of improving skill acquisition in Home Economics Department of Nigerian Universities.

DISCUSSION

The major aim of teaching is to impact knowledge and skills. Skills are required for proficiency in all aspects of Home economics. However, due to numerous problems affecting the teaching and learning of this course at the University level, it becomes difficult to achieve the proficiency. The study therefore identified many challenges facing the learning of crafts. These challenges hinder it from achieving its objective of impacting adequate skills to students. Since it is a skill oriented course, most of the problems affecting it are practical oriented (Anozie and Okoli, in Okeke, 2005). This could be as a result of some of the challenges identified which includes teachers avoiding to teach those crafts they do not have knowledge of, as a result of not being taught in the course of their training. This is in line with Iheme (1989), supported by Okeke, (2005) who pointed out that some lecturers lack the practical knowledge and skill because they were not exposed to those practicals during their training. Other challenges revealed by this study include, limited time allotted to practical, the study also showed that lack of facilities also affect the teaching of skills. This is in line with Iheme (1989) and Arkurst (2004) in their study, which revealed that funds, facilities and equipment were seriously affecting the teaching of skills in Home Economics. This is also in line with the findings of Okeke (2005) who stated that instructional facilities are very important in the teaching and learning of practical. Okorie and Ezeji (1988) and Okeke (2005) pointed out that for skills to be acquired there must be opportunity for participation and practice of such skills under real life condition. It was also disclosed in the work that inadequate instructional material is a great challenge in the learning of skills which is also in line with Ogwo and Oranu (2006) whose work also revealed that inadequate instructional material is a great challenge in the teaching of clothing and textile. The lack of instructional materials is compounded by teachers' lack of interest to use the limited ones available or even improvise simple materials. The inability to improvise might be due to insufficient time. Simon (1994) observed that teachers who already have too much class work in school require additional time to improvise and to prepare for using them in the class. They may feel they have no extra time to spare to facilitate the use of such materials.

Curriculum issues were also identified as a challenge in teaching craft. This was supported by Arubayi and Obunadike (2011) who discovered that wide syllabus, difficult text and topics, lack of excursion, field trips, too much measurement and calculations and uninteresting methods of teaching are challenges in teaching clothing and textile, which includes crafts. Similarly, Shulman as cited in Arubayi and Obunadike (2011) observed that few teachers are capable of using effective method to manage ideas within classroom. Anyakoha (1991) also observed that clothing and textile curriculum is wide and demanding, but urged teachers to use appropriate instructional methods in teaching.

It was also revealed from the study that provision of digital technology and internet services is also needed. No nation can achieve development without science and technology. Technology simply means extension of human capacities. For example, we are in the era of experiencing the manufacture and use of sophisticated computers to replace manual typewriters, E-mails for machine and the internet and efficient reliable and fast information/communication devices (slide projectors) to enhance teaching and learning, academic excellence and research. In the teaching of skills this could also be embraced. Auto cards and computer aided design could be used to enhance the learning of skills. Other challenges include inadequate books on skills, absence of streamlined practical

projects on skills, lack of incentives, and lack of enthusiasm to learn skills by most students, expensive nature of the course, lack of finance and interest.

CONCLUSION

In conclusion, practical should be seriously emphasized in the different institutions of higher learning. Without adequate practical works, the theoretical knowledge gained may be of little value. The outcome of inadequate practical works is the production of poorly trained graduates, who are incompetent to face economic challenges and survive in existing unemployment situation. However there is need to create conducive environment where students will learn to explore available opportunities, develop skills and attitudes. These could be met through using appropriate instructional techniques, instructional materials, adequate facilities/infrastructures and expose students to diverse learning experiences.

RECOMMENDATIONS

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

(1) Modules should be made to guide students on what to accomplish in each session on crafts and other clothing practicals.
(2) There should be exhibitions at the end of every session to show case what students have done within a particular session. This will encourage other students and lecturers to work harder in the areas of practical.
(3) Workshops or short courses should be organised to teach Home Economics lecturers new skill.

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EFFECT OF AWARENESS AND USE OF SELECTED PRESSING-EQUIPMENT ON GARMENT FINISH AMONG TAILORS IN ABEOKUTA, NIGERIA

Adeboye, A. O., Braide, O. O. and Raji, L. T.
Department of Home Science and Management
Federal University of Agriculture, Abeokuta
adeboyeao@funaab.edu.ng
+234 805 444 6268; +234 802 711 7877

ABSTRACT
One secret to good garment construction is proper pressing done at every stage as sewing progresses for professional finish. The study assessed tailors on effect of awareness and use of selected pressing-equipment for garment production at minimum standard given perfect finish. Using descriptive study, a pretested self-structured questionnaire was administered to 120 respondents; data collected and analysed. Most (56.7%) of respondents were within active age 15-30 years ($\bar{x}$ =31), mostly (61.7%) female. 90.0% had at most secondary education, 97.5% had vocational training and 80.8% earned below ₦50,000.00 monthly.Majority (90.0%) were aware of clapper, Steam-Iron 98.3%, sleeve-board 57.5%; while 84.2% were not aware of seam-roll, 79.2% sleeve-roll and 64.2% tailor's Ham. 80.8% frequently uses clapper, Dry-Iron (95.0%), Press-Cloths (93.3%) while 81.7% had never used Seam-Roll, Tailor's Ham (55.8%), Point-Presser (50.0%) and Sleeve-roll 80.0%. Majority, 98.3 % and 96.7% strongly agreed pressing makes finished garment look neater and encourages patronage respectively. No significant relationship between respondents gender ($\chi 2$= 0.84), level of education ($\chi 2$=5.152) and use of selected pressing-equipment at $p<0.05$ level of significant. Significant relationship exists between training attended ($\chi 2$=29.87) and use of pressing-equipment at $p<0.05$ significant level. Generally, some respondents never used pressing-equipment except table and iron; many have low usage due to technical know-how, equipment cost, and poor electricity supply, complain that pressing is stressful and time taking. However, Tailor's acknowledged that pressing-equipment has effect on garment finish as it makes garment look neater, leads to professional quality, encourages patronage and enhances fitness.

Keywords: Effect, Tailors, Pressing, Pressing Equipment, Garment Finish

INTRODUCTION
One of the real secrets to good garment construction is proper pressing which must be done as construction progresses; it cannot be left to the last, as no amount of final pressing will make up for step by step pressing. Careful, thorough pressing during each construction process will result in professional looking garments that require only a minor touch up when completed. Pressing is an essential technique in garment making and required for decent faultless fit. To ensure success in dressmaking, accuracy is vital at every stage and a professional looking garment cannot be achieved without pressing (Rhiannon, 1990). Constance (2008) states that pressing helps to keep clothes looking their best. It flat away wrinkles and aids in restoring the fabrics original texture. Pressing give smooth look to finished garment. Pressing is requiring whether when producing haute couture garment, ready - to – wear and mass garment for large consumption (Wright, 2006). Mayedul (2015) stressed that pressing is a finishing process done on cloth and garments by application of heat and pressure with or without steam to remove creases and to impart a flat appearance to the garments. One will probably spend almost as much time pressing as sewing according to Brusch (2015). Nevertheless, pressing is often overlooked during the sewing process as pressing at each stage of clothing construction, may seem time consuming and an unnecessary waste of time, but it is indeed essential to that perfect look found in ready to wear garments.

The dressmaker and the sewing machine cannot do the sewing job alone (Priest & Pullen, 1990). There are several necessary tools and equipment which aid proper sewing that garment makers should know about. One major group of tools necessary is the pressing tools. According to Gaddis (2012), sewing pressing tools are the secret to a professional looking, perfectly finished garment

without which the finished garment may look homemade; proper pressing of fabric during construction is critical to achieving beautifully finished sewing. Eleanor and Oerke (1969) explained that good pressing equipment is as important as a good sewing machine, needles and pins. Good pressing equipment aid good pressing that helps to give a professional finish to a garment (Jeanette, 1990). There are various machines used in garment industries. Among them are stem iron, Stem pressing machine, seam roll, sleeve board, tailor's ham, clapper and point presser to mention few.

As important as pressing to good garment production, a lot of dressmakers overlook this aspect in garment production. Many local tailors' skips pressing when sewing- poor sewing ethics- which give rise to dismal garment production while most dressmakers who manage to press do this at the end of the sewing exercise. Today, tailors find it difficult pressing garment at every phase of sewing therefore, the tradition of sewing and pressing is not handed over to up-coming tailors and trainees. This poor sewing ethics has resulted to production of unattractive and acceptable garment by local tailors in the study area. Some tailors give excuses that there is no electricity but what about the use of coal iron, most tailors see garment pressing as waste of time.

Observing the activities of tailors, especially the female who effectively skipped pressing from sewing for the reason that lack of electricity, time wasting and practice of pressing not actually passed to them when they were trained; a lot of tailors sew without pressing resulting in garment not produce to standard. Pressing is not the same as ironing, during sewing construction, pressing is what is needed. Ironing is the actual sliding over the garment with pressure. Pressing is moving over the garment in light spurts not allowing the iron to rest on the fabric continuously or for very long time (Gaddis, 2012).

Selected pressing equipment and their function
Iron: is an electrically heated appliance for flattening creasing and shaping fabric, a combination of steam and dry iron gives best results. It should have a wide temperature ranges to use with all fabrics. The steam vents should be located at the head of the soleplate to provide concentrated steam when it is needed (Priest & Pullen, 1990).
Ironing board: is a padded flat surface for ironing and pressing. Ironing board should be protected with padding and covered with calico which can be removed for washing. It should be adjustable to the working height of user (Rhiannon, 1990). Special attention should be paid to the ironing board cover by choosing one that enhances speed and efficiency to ironing experience (Jan, 2004; Zobia, 2012).

Seam Roll: is long firm tubular cushion used to press long seam and small curved areas. Seam roll allows seams to be opened and pressed without imprinting seams to the outer fabric (Amada, 1991). Also Seam roll helps get to seams that would otherwise be difficult to press without creasing up the garment (Zobia, 2012).

Seam Board, Point presser or pressing Board: is not padded, but may be covered with a layer of fabric to prevent the wood from becoming warped with steam. Often it is of two parts, attached by short supports. One part has rounded and curved edges for pressing various curved edges, and one is very narrow and pointed at one end for pressing seams and points. It is placed on an ironing boarding or table when used. A point presser boards are designed for pressing collars and other points. (Zobia, 2012; Vanderhoff, Frank & Compbell, 1985)

Sleeve Board: is a small board about 20 inches (0.5m) long used to press narrow areas such as sleeves which cannot fit over the end of regular ironing board. A sleeve board is especial useful for pressing short seams and sleeve. A small pad may be made for use of curved seams, darts and any small area (Rhiannon, 1990). Sleeve board is used to press sleeves and sleeve caps and it is like a tiny ironing board (Mathews, 1985; Zoobia, 2012).

Tailor's Ham: This is an egg- shaped pad, about 30cm long and 20cm wide stuffed with wool clippings and used to press curved seams, darts and other shaped areas of garment (Melita, 2014). One side is usually covered with woolen fabric for pressing woolens and the other side may be covered with cotton for pressing cotton and linens

Pounding Block or clapper is a block of wood used to flatten seam edges tailoring. Ponder block or clapper is used to flatten seams and edges after pressing (Priest & Pullen, 1990).

Today, it is exciting to see the increasing number of youths showing interest in tailoring and fashion designing. However, most of them do not acquire the vital skills that are required in the field to enable them come out with product that has professional finish. Lack of professional finish in clothing construction is due to the improper or lack of ability to use pressing equipment. Most tailors only use iron and table for pressing when sewing garment and do not know other pressing tools available while those that know these tools are available finding it difficult to use them. Therefore, there is need to assess tailors within Abeokuta metropolis to ensure their knowledge of the proper use of some selected pressing equipment or tools that can aid the production of garment at minimum standard for a perfect fitting.

Objectives of the study

The broad objective of the study is to assess tailors on the proper use of selected pressing equipment for garment construction in Abeokuta metropolis. Specific objectives of the study are to:

* determine the socio-economic characteristics of tailors in Abeokuta
* examine the awareness of tailors on selected pressing equipment
* determine tailors level of usage of the pressing equipment
* determine the effect of their knowledge on their product (sewn garments)

Hypotheses

Ho_1: There is no significant relationship between personal characteristics and use of pressing equipment.

Ho_2: There is no significant relationship between personal characteristics and awareness of pressing equipment.

METHODOLOGY

The instrument used for data collection was a structured questionnaire administered on one hundred and twenty (120) male and female tailors and retrieved on completion of response from the respondent in Abeokuta metropolis using purposive and cluster sampling techniques. Cluster sampling method was employed as the population of tailors within Abeokuta is divided into 36 groups by their local chapters. The six (6) most populated local chapters were purposively selected for the study. Cluster sampling was used only because it is economical as it helps reduced cost of administering the questionnaire. Since most of the tailors attend their monthly local chapter meets, it was easier to administer the questionnaire purposively only to the first twenty (20) tailors that arrived at the meeting venues through the assistance of the local chapters presidents.

The questionnaire has four (4) sections. Section (A) consists of questions on personal data including age, sex, religion, marital status, income per month, level of education. Section (B) contains nine (9) items on the awareness of tailors on the selected pressing equipment where the respondent was expected to indicate awareness or not of the selected pressing equipment's. Section (C) involves eleven (11) items on the level of usage; respondent was expected to indicate usage of pressing equipment by frequently used, highly used, and not used. Also the reason for not using the selected pressing equipment was observed. Section (D) comprise of fourteen (14) items on effect of using pressing equipment's on garment and respondents were expected to indicate the level of agreement or disagreement to the statement with a forced-choice response scale 4-1.

Using spilt half reliability, the instrument was tested and the Cronbach's Alpha reliability co-efficient of 0.825 was obtained. The main statistical tools used in the analyses of data collected for the study was frequency count, percentile, means, ranking, Chi-square and Pearson Product Moment Correlation. Response of the subjects was prepared on the frequency distribution table, percentage, mean, chi-square and PPMC analyzed with the aid of statistical package: IBM-SPSS version 22.0. The decision rule was based on Mean scores using below classification:

3.50 - 4.00 =Strongly Agreed
2.50 - 3.44 = Agreed
1.50 - 2.44 = Disagreed
0.50 - 1.44 =Strongly disagreed

RESULTS AND DISCUSSION

Socio-economic characteristics:

Table I: Socio-economic characteristics of the respondents (n=120)

Variables	Freq. (%)	Mean	Std. Dev.
Age			
15-30	68 (56.7)		
31-45	39 (32.5)	**31**	10.71
46-60	12 (10.0)		
61-75	1 (0.8)		
Sex			
Male	46 (38.3)		
Female	74 (61.7)		
Religion			
Christianity	66 (55.0)		
Islamic	46 (38.3)		
Traditional	8 (6.6)		
Marital status			
Married	56 (46.7)		
Single	59 (49.2)		
Divorce	3 (2.5)		
Separated	2 (1.7)		
Income per month			
>50,000	97 (80.8)		
51,000-100,000	7 (5.8)		
101,000-500,000	4 (3.3)	**36,700**	99180.4
501,000-1000000	1 (0.8)		
None	11 (9.2)		
Level of education			
Non formal Education	0 (0.0)		
Primary	26 (21.7)		
Secondary	82 (68.3)		
Tertiary	12 (10.0)		
Association of tailors (membership)			
Yes	55 (45.8)		
No	65 (54.2)		
Attended any training			
Yes	117 (97.5)		
No	3 (2.5)		

Table I shows the socio-economic characteristics of the respondents. 56.7% are within the active age range of 15-30 years. Labour force comprises people ages 15 and older who meet the International Labour Organization's 2014 definition of the economically active population (Nigerian Bureau of Statistics, 2014;World Bank, 2016); followed by 32.5% within 31-45 years, 10.0% within 46-60 years and 0.8% within 61-75 respectively. The mean age of the respondents was 31 years and Standard deviation of 10.71. Most of the respondents were female 61.7% while 38.3% were males respectively. In considering the religion of the respondents, 55.0% ware Christian, 38.3% were Muslim and 6.6% were traditional worshippers respectively.

The Result further shows that 49.2% respondents were single, 46.7% married, 2.5% of them were divorced and 1.7% separated. Considering their average monthly income, the result revealed that 80.8% of the respondents earned below ₦50,000.00, 5.8% of them earned between ₦51,000-100,000, 3.3% of them earned between ₦101,000 - 500,000, 0.8% earned between ₦501,000-1 million while 9.2% did not disclose their average monthly income. Also 21.7% of the respondents had primary education, 68.3% of them had secondary education, and 10.0% of them had tertiary education. Furthermore, 54.2% of them do not belong to any association of tailors while 45.8% said they do. Also, the result revealed that 97.5% of the respondents said they had attended training in their field of vocations and 2.5% said they had not.

Awareness of the respondents on the selected pressing equipment

Table II: Awareness of the respondents on the selected pressing equipment (n= 120)

Pressing Equipment	Aware	Not Aware
	Freq. (%)	Freq. (%)
Clapper	108 (90.0)	12 (10.0)
Seam Roll	19 (15.8)	101 (84.2)
Point Presser	58 (48.3)	62 (51.7)
Sleeve Board	69 (57.5)	51 (42.5)
Tailor's Ham	43 (35.8)	77 (64.2)
Iron Steam	118 (98.3)	2 (1.7)
Iron Board and Cover	27 (22.5)	93 (77.5)
Press Cloths	116 (96.7)	4 (3.3)
Sleeve Roll	25 (20.8)	95 (79.2)

Table II revealed that, 90.0% of the respondents were aware of clapper, 98.3% of them were aware of Steam Iron, 96.7% of them were aware of press cloths, 57.5% of them were aware of sleeve board. While on the other hand, 84.2% of the respondents were not aware of seam roll, 79.2% of them were not aware of sleeve roll, 77.5% were not aware of Iron board and cover, and 64.2% were not aware of tailor's arm.

Level of usage of selected pressing equipment

Table III: Level of usage of selected pressing equipment (n=120)

Pressing equipment	Frequently used	Rarely used	Not used
	Freq. (%)	Freq. (%)	Freq. (%)
Clapper	97 (80.8)	11 (9.2)	12 (10.0)
Seam Roll	8 (6.6)	14 (11.7)	98 (81.7)
Point Presser	22 (18.3)	38 (31.7)	60 (50.0)
Sleeve Board	20 (16.6)	42 (35.0)	58 (48.3)
Tailor's Ham	23 (19.2)	30 (25.0)	67 (55.8)
Steam Iron	82 (68.3)	34 (28.3)	4 (3.3)
Dry Iron	114 (95.0)	5 (4.2)	1 (0.8)
Ironing board/ table	95 (79.2)	25 (20.8)	0 (0.0)
Coal Iron	79 (65.8)	36 (30.0)	5 (4.2)
Press Cloths	112 (93.3)	3 (2.5)	5 (4.2)
Sleeve roll	10 (8.3)	14 (11.7)	96 (80.0)

Table III, highlighted the level of use of the pressing equipment in clothing constructions. As shown in table 3, the result revealed that 80.8% of the respondents frequently use clapper, 95.0% of them frequently use Dry Iron, 93.3% of them frequently use Press Cloths, 65.8% of them frequently uses Coal Iron and 68.3% of them frequently uses, while 81.7% of them had never used Seam Roll, 55.8% of them had never uses Tailor's Ham, 50.0% of them had never uses Point Presser, and 80.0% of them had never uses Sleeve roll.

Reasons given for not using the above equipment

Table IV: Reasons given for not using the above equipment (n=120)

Variable	Freq. (%)
Technical know-how	58 (48.3)
Cost of equipment	22 (18.3)
Electricity to power the equipment	18 (15.0)
Others	10 (8.3)
None	12 (10.0)

Table IV reveals reasons why many of the respondents had not used the equipment presented in Table III above. Findings show that, 48.3% of the respondents said it was due to technicality involved in operating the equipment. 18.3% of them said it was as a result of cost of equipment, 15.0% of them said it was due to electricity supply, 8.3 of them said it was as a result of their time taking and stressful while some did not indicate any reasons.

Effect of using pressing equipment on finished / sewn garments

Table V: Effect of using pressing equipment on finished/ sewn garments

Statements	SA F (%)	A F (%)	D F (%)	SD F (%)	Mean	Rank
Pressing equipment makes finished product look neater	118 (98.3)2	(1.7)	0 (0.0)	0 (0.0)	3.98	1st
Pressing equipment leads to professional finished work	118 (98.3)	2 (1.7)	0 (0.0)	0 (0.0)	3.98	1st
Pressing equipment encourages patronage	116 (96.7)	3 (2.5)	1 (0.8)	0 (0.0)	3.96	3rd
Pressing equipment lift and refreshes the fabric's fitness	112 (93.3)	7 (5.8)	1 (0.8)	0 (0.0)	3.92	4th
Clapper, Seam Roll and Tailors Ham preserves fabric's texture, shininess and flattering of the fabric surface.	108 (90.0)	10 (8.3)	0 (0.0)	2 (1.7)	3.87	5th
I am satisfied with the use of pressing equipment because it makes garment neater	102 (85.0)	11 (9.2)	7 (5.8)	0 (0.0)	3.79	6th
Pressing equipment helps in reducing energy exertion	105 (87.5)	8 (6.7)	1 (0.8)	6 (5.0)	3.77	7th
If I don't use pressing equipment, my product will still look perfect	79 (65.8)	17 (14.2)	7 (5.8)	1 (0.8)	3.72	8th
It is best to use pressing equipment in order to have a good finishing	84 (70.0)	29 (24.2)	3 (2.5)	4 (3.3)	3.60	9th
I don't find time to use pressing equipment other than table and iron	27 (22.5)	52 (43.3)	32 (26.7)	9 (7.5)	2.79	10th
Pressing equipment are very expensive	23 (19.2)	27 (22.5)	58 (48.4)	12 (10.0)	2.52	11th
I have never used pressing equipment except table and iron	19 (15.8)	33 (27.5)	49 (40.8)	19 (15.8)	2.44	12th
If I don't use pressing equipment, my finishing will be poor	17 (14.2)	14 (11.7)	41 (34.2)	48 (40.0)	2.00	13th
I can never use coal iron to press garment.	6 (5.0)	5 (4.2)	36 (30.0)	73 (60.8	1.53	14th

Table V, shows that 98.3% of the respondents ($\bar{X}$) =3.98) strongly agree to the statements that pressing equipment makes finished product look neater and leads to professional finished work ranked first respectively. 96.7% ($\bar{X}$) =3.98) strongly agreed to the statement that "pressing equipment encourage patronage ranked third; while the statement that "pressing equipment lift and refreshes the fabric's fitness" ranked forth with majority, 93.3% strongly agreed, 5.8% agreed, 0.8% disagreed and none strongly disagreed. Also, for the statement that "clapper, seam roll, and tailors ham preserves fabric's texture, shininess and flattering of the fabric's surface", 90.0% strongly agreed, 8.3% agreed, 0.0% disagreed and only 1.7% strongly disagreed. As indicated, very few of the respondents 22.5% strongly agreed that they do not have time to use pressing equipment other than table and iron, 43.3% agreed and 26.7 disagreed while only 7.5% strongly disagreed.

The study further revealed that some of the respondents said they had never used pressing equipment except table and iron. For example, 15.8% strongly agreed to it that they had never used pressing equipment except table and iron, 27.5% agreed, 40.8% disagreed and 15.8% strongly disagreed respectively. In determining respondents satisfaction in the use of pressing equipment, 85.0% strongly agreed to the statement that "I am satisfied with the use of pressing equipment because it makes garment neater", very negligible, 9.2% agreed, 5.8% disagreed and none of them strongly disagreed respectively. Also, it is generally thought that garment will look perfect in the absence of using pressing equipment, this was so as majority, 65.8% strongly agreed to the statement that "if I don't use pressing equipment, my product will still look perfect", 14.2 agreed, 5.8% disagreed and only 0.8% strongly disagreed respectively. With the increase in price of equipment, many of the respondents, 19.2% strongly agreed to the statement that "pressing equipment are very expensive", 22.5% agreed, 48.4% disagreed and only 10.0% strongly disagreed respectively.

In order to have a good finishing, the use of pressing equipment cannot be avoided and this was revealed in Table V, as 70.0% of the respondents strongly agreed to the statement that "It is best to use pressing equipment in order to have a good finishing", 24.2% agreed, and only 2.5% and 3.3% strongly disagreed respectively. As a matter of fact, 14.2% strongly agreed to the statement that "If I don't use pressing equipment, my finishing will be poor", 11.7% agreed, 34.2% disagreed and 40.0% strongly disagreed respectively. Lastly, coal iron is equipment which only 5.0% strongly agreed that they can never use to press garment, 4.2% agreed, 30.0% disagreed and 60.8% strongly disagreed respectively.

Hypotheses testing

HO_1: There is no significant relationship between personal characteristics and use of pressing equipment using Chi- square.

Table VI: Association between respondents' personal characteristics and use of pressing equipment

Items	$\chi 2$	Df	p-value	Decision
Sex	0.835	1	0.66	NS
Religion	0.364	2	98	NS
Marital status	2.89	2	82	NS
Level of education	5.152	2	27	NS
Training attended	29.87	1	0.001	S

Decision criterion is to reject null hypothesis when $p < 0.05$
Df = degree of freedom
N.S = not significant
S = significant

Results presented in the table shows test of association between respondents personal characteristics such as sex, religion, marital status, level of education, training attended by the respondents and their level of use of selected pressing equipment. As shown in the table, the null hypothesis was accepted for there was no significant association between respondents marital status for gender ($\chi 2 = 0.84$), religion ($\chi 2 = 0.36$), marital status ($\chi 2 = 2.89$), level of education ($\chi 2 = 5.152$) and level of use of selected pressing equipment at $p < 0.05$ level of significant. This implies that whether male or female; Christian or Muslim; married, single or separated, possessed primary education, secondary or tertiary has nothing to do with their knowledge on the use of pressing equipment. On the other hand, there exist a significant association between respondents training attended ($\chi 2 = 29.87$) and level of use of selected pressing equipment at $p < 0.05$ significant level. This implies that respondent who attended training is likely to have adequate knowledge on the use of selected pressing equipment.
HO2: There is no significant relationship between personal characteristics and awareness of pressing equipment using PPMC

Table VII: Relationship between respondents' age and use of selected pressing equipment

Age*	0.919	0.001	Significant

Dependent variable: Knowledge on the use of selected pressing equipment

Result presented in Table VII shows a correlation analysis between respondent's age and knowledge on the use of selected pressing equipment. The hypothesis was rejected because a significant relationship was found between respondent's personal characteristics (age and knowledge) on the awareness and use of selected pressing equipment at 0.01 levels (r = 0.919, p = 0.001). Results showed that there was a significant relationship between age and knowledge of the respondents on the awareness and use of selected pressing equipment. This implies that age is a factor affecting the knowledge of the use of pressing equipment.

CONCLUSION

From the view and response given by the respondent, the study have been able to revealed that generally, most tailors in Abeokuta Nigeria are not aware of these pressing equipment, they have no level of usage, most of the tailor's complain that the used equipment is time consuming, it requires adequate electricity which is not available, cost of purchase and their lack of technicality. However, the respondents (Tailor's) acknowledge the importance of this various pressing equipment as its makes finished product look neater, leads to professional finished work, encourages patronage and enhance fabric fitness.

Recommendation

The study therefore recommends that there is need for pressing equipment to be recognized and be used among tailors during garment construction for well structured, neat and perfectly produce garments as pressing helps to keep garments look their best after series of uses. Tailors should adopt the use of various pressing equipment as they have good and positive effects on garment finish. The Tailors' Association of should introduce the use of these various pressing equipment to their members and encourage the use during their monthly meetings.

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Zobia, I. (2012). Types of Ironing Board Covers that make ironing faster and easier. Retrieved from http://eHow/fotolia.comONAL BUREAU

FRUITS AND VEGETABLES CONSUMPTION PATTERNS AMONG ADOLESCENTS IN SELECTED LOCAL GOVERNMENT AREAS OF LAGOS STATE

Lano-Maduagu, A. T.
Department of Science and Technology Education
University of Lagos, Akoka, Lagos, Nigeria.
Hotline: 08033228325
Email:tmaduagu@yahoo.com

ABSTRACT
Fruits and vegetables are of paramount importance in implementing preventive strategies for diseases. The objectives of this study are to examine the socio-cultural, parental and peer group influence on vegetables consumption patterns among the adolescents. A total number of two hundred (200) adolescents were selected randomly in Kosofe Local Government Area of Lagos state. Questionnaire was used in collecting data on demographic, social characteristics of the respondents and data relevant to the objectives of the study such as reasons for consumption of fruits and vegetables, peer group influence on adolescents' consumption pattern of fruits and vegetables, parental influence on the consumption pattern of fruits and vegetables among adolescents. The results revealed that 7% of the respondent consumed 75g of fruits, 37% of the respondents consumed fruits between 76g to 150g and 61% of respondents consumed fruits as from 151g and above. On the other hand 12% of the respondents consumed vegetable between 75g to 150g and 88% of the respondents consumed as from 151g and above. Based on the above findings, it was revealed that adolescents were unaware of the health benefits of consumption of fruits and vegetables. Thus, it is recommended among others that adolescents should consume adequate fruits and vegetables to negate nutritional deficiencies and consequently reduce medical expenses.

Key words: Fruits, vegetables, adolescent, consumption pattern and peer influence

INTRODUCTION
Fruits and vegetables present an important part of the human diet in almost any culture of the world. There is also a long tradition in the view that fruits and vegetables should be consumed because of their nutritional and health benefits. Eating a variety of fruits and vegetables ensures an adequate "intake" of most micronutrients, dietary fibre and essential non-nutrient substances (World Health Organization (WHO), 2003). Despite these positive nutritional and health aspects, consumption rates of fruits and vegetables are still low or insufficient in many countries (Iranian Journal of Public Health, 2015). The consumption patterns of fruits and vegetables of adolescents like any other food item vary and often times are determined by a number of factors, which are not only personal but complex to understand (WHO, 2015). Ideally, fruits and vegetables ought to" attract adolescents because of their different colours and shapes, however seasonal variations, availability, cost, social cultural factors, peer groups parental influence could play some vital roles towards consumption pattern.
Consumption of fruits and vegetables have been identified to be very crucial in prevention of certain diseases among adolescents, (György, et al., 2015). According to Riediger and Moghadasian (2008), fruits and vegetables are important source of vitamins and, minerals such as vitamin' C folate and potassium. Their consumption have continued to be of pivotal importance especially in health optimization of adolescents but unfortunately data signifying this in Nigeria are unreadily available. This is because only few studies have examined the consumption pattern of fruits and vegetables in the country. Nigeria is endowed with a wide range of fruits and vegetables which play important roles in nutritional and healthy values of the body (Mensah, Okoli, Ohaju-Obodo, & Eifediyi, 2008; Kadiri, &Olawoye, 2015).

The importance of fruits and vegetables consumption cannot be overemphasized but the complexities involved become a behavioural issue embedded in the social, economic, health and psychological nature of individual in any society, (Peltzer & Pengpid, 2012). This research therefore, examines the consumption pattern of fruits and vegetables among the adolescents by focusing on these complexities.

Objective of the study
The main objective of this study is to examine the fruits and vegetables consumption patterns among adolescents in Kosofe LGA in Lagos state. The specific objectives are to:
a) Investigate social cultural factors influencing the consumption of fruits and vegetables among adolescents.
b) Examine the level of parental influence on adolescents' fruits consumption patterns. .
c) Investigate peer group influence in adolescents' consumption patterns of fruits and vegetables.
d) Examine adolescents' seasonal preferences to certain kinds of fruits and vegetables to another.
e) Investigate the fruits and vegetables consumption pattern of adolescents.

METHODOLOGY
Survey area
The study was carried out in Kosofe Local Government Area in Lagos State. Kosofe Local Government has an area of 81km2 and populations of 665,393 at the 2006 census. The area is divided into two main zones. Zone one comprises of Alapere, Ikosi-Shangisha and Kosofe Ajegunle. Zone two comprises of Maryland, Obanikoro and Ogudu-Ojota Area. Some of the major communities are Maidan, Olowora, Magodo, Isheri, Agboyi Ajegunle, Ketu, Ojota, Anthony Village, Ifako, Oworonshoki and Ogudu.

Subjects
The subjects for the study were adolescent boys and girls between the ages of 12-18 years old and living in Kosofe Local Government Area

Sample size
The sampling size was 200 adolescents randomly selected from the study area.

Method of data collection
The data was collected using a structured sectionalized questionnaire. Section A contains demographic and social characteristics of the respondents. While section B was designed to collect data relevant to objectives of the study.

Questionnaire administration
The questionnaire was administered to the residents of the area. One hundred (100) questionnaires were administered in five streets in zone one, while another one hundred (100) were administered in five streets of zone two. The streets were randomly selected from parts of the study area where fruits and vegetables vendors are mostly located and the questionnaire was distributed statistically.

Data analysis
Descriptive statistics such as mean, frequency, percentages and tables were used in the process of data analysis. This statistical method was used to explain the pattern of fruits and vegetables consumption in the area.

RESULTS

Table I shows the age, gender and educational attainment of the respondents, 11% of therespondents were between ages 12 - 13 years old, 67% of the respondents were between 14 - 15 years old while 22% of the respondents were between ages 16-17years old. The table further revealed the gender of the respondent as 49% male and 51% female. The educational attainment of the respondents shows that they are all senior secondary school students.

Table I: Age, gender and educational attainment of respondents

Age	Frequency	Percentage (%)
12 - 13 years	22	11%
14 - 15 years	134	67%
16 - 17 years	44	22%
Total	**200**	**100%**
Gender		
Male	98	49%
Female	102	51%
Total	**200**	**100%**
Education Attainment		
Primary school	None	None
Secondary school	200	100%
Total	**200**	**100%**

Table II shows the information on the consumption of fruits and vegetables of the respondents, 99% of the respondents consumed fruits and vegetables while only 1% did not consume fruits and vegetable.

Table II: Percentage of fruits and vegetable consumption

Response	Frequency	Percentage (%)
Yes	198	99%
No	2	1%
Total	**200**	**100%**

Table III, shows the reasons for fruits and vegetable consumption of the respondents. Most of the respondents [49.5%] were of the opinion that fruits and vegetables keeps you healthy. Twenty five percent (25%) believed that fruits and vegetables contain vitamins, 9% believes they prevent diseases also, 4.5% gave opinion that it gives energy: while 8.5% believed that it aids digestion and 3.5% have their own 'personal reasons for consuming fruits and vegetables.

Table III: Reasons for consuming fruits and vegetables by the respondents

Reasons	Frequency	Percentage (%)
a) They contain vitamins	50	25%
b) They help to prevent diseases	18	9%
c) They give energy	9	4.5%
d) They aid digestion of food	17	8.5%
e) Fruit and vegetable can keep you healthy.	99	49.5%
f) Others	7	3.5%
Total	**200**	**100%**

Table IV reveals that 24% of the respondents ate fruits' and vegetables daily. 10% consumed fruits and vegetables weekly. 2% consumed fruits and vegetables monthly while 64% consumed fruits and vegetables anytime they feel like.

Table IV: Patterns of fruits and vegetables consumption

Period of Consumption	Frequency	Percentage (%)
Daily	48	24%
Weekly	20	10%
Monthly	4	2%
Anytime	128	64%
Total	**200**	**100%**

Table V shows that 78% of the respondents believed that female adolescents needs more fruits and vegetables than male adolescents. While 22% believed that male adolescents needs more fruits and vegetables than female adolescents.

Table V: Opinion of the adolescents in the consumption pattern

Response	Frequency	Percentage (%)
Yes	156	78%
No	44	22%
Total	**200**	**100%**

Table VI: Parental influence on the subjects' consumption of fruits and vegetables

S/N	Yes		No	
	Frequency	Percentage	Frequency	Percentage
1. Your parents always add fruits and vegetables to your meal?	168	84%	32	16%
2. Does your parent influence your fruits and vegetables consumption?	138	69%	62	31%

Table VI shows that 84% of the respondent's parents always add fruits and vegetables to their meal. While 16% said that their parents do not add fruits and vegetable to their meals.

Table VII: Social cultural factors influencing the consumption of fruits and vegetables among adolescents

S/N		Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Does your culture impose the type of fruits and vegetable you consume?	52	26%	148	74%
2.	Does your current environment affect your consumption of fruits and vegetables?	70	35%	130	65%

Table VII reveals the socio-cultural factors influencing the consumption of fruits and vegetables among adolescents. 26% of the respondents agreed that culture inform the type of fruits and vegetables they consumed while 74% of the respondents disagreed that culture do not inform the type of fruits and vegetables they consume. Also, 35% of the respondents agreed that their current environment affects their consumption of fruits and vegetables while 65% opined that their consumption of fruits and vegetables had nothing to do with their environment.

Table VIII: Peer group influence on the consumption of fruits and vegetables

Response	Frequency	Percentage (%)
Yes	28	14%
No	172	86%
Total	**200**	**100%**

Table VIII shows that 14% of the respondents were influenced by peer group in their consumption of fruits and vegetables while 86% were not influenced by their peer group in their consumption of fruits and vegetables.

Table IX: Seasonal effects on the consumption of fruits and vegetables

Response	Frequency	Percentage (%)
Yes	128	64%
No	72	36%
Total	**200**	**100%**

The season affected the consumption of fruits and vegetables of 64% of the respondents while it does not affect the consumption of 36% of the respondents.

Table X: Quantity of fruits consumed by the respondents per day

Description	Amount (grams)	Frequency	Percentage
Fruits	<90 gram(<1/2cup)	14	7%
	90 - 175g(1/2-1cup)	64	32%
	176-350g (1-2cups)	122	61%
Total		**200**	**100%**

Table X reveals that 7% of the respondents consumed <90 grams equivalent to less than ½ cups of fruits daily, 32% consumed between 90 to 175 grams (1/2-1cup) of fruits daily while 61 % consumed between 176- 350 grams on daily basis.

Table XI: Quantity of vegetables consumed by the respondents per day

Description	Amount[grams]	Frequency	Percentage
Vegetables	<75 gram	None	None
	75 - 150g(1/2-1cup)	24	12%
	151gabove(1cup and above)	176	88%
Total	**100**	**200**	**100%**

Table XI also reveals that 12% of the respondents consumed between 75 to 150grams of vegetables daily, while 88% consumed between 151 grams and above vegetables daily. None of the respondents consumed less than 75grams per day

DISCUSSION OF FINDINGS

Several report has shown that adequate intake of fruits and vegetables form an important part of a healthy diet and low fruits and vegetables intake constitute a risk factor for chronic diseases such as cancer; coronary heart diseases (CHD), stroke and cataract (Van Duynand & Pivonka, 2000). These findings indicated that the respondents consumed fruits and vegetables at any time but not as recommended by any agencies such as FAO, WHO, (WHO, 2004; Food and Agriculture Organization, 2015). These findings were based on Adolescents between the ages of 12 - 17 years. The male subjects were 49% while female were 51% in term of gender. Findings reveal that 78% of female adolescents consumed more fruits and vegetables than male counterpart which is 22%. However, Blanck, Thompson, Nebeling and Yaroch(2008) supported the view that women are more likely to consume fruits and vegetables than men, while Baker and Wardle (2003) observed that men's poor nutrition knowledge explained significant part of their low intake of fruits and vegetables.

The findings also revealed that adolescents consumed fruits and vegetables at their own pace without the influence of parents or other family members or peer group. Therefore, the fruits table analyze that about 7% of the respondents consumed below required intake, 37% consumed the minimum intake while 61% consumed above the minimum intake. The vegetable table stated that about 12%, of the respondents consumed appropriate intake while 88% consumed above the minimum intake. However, Block, et al (1992) gave his opinion that people who consume one or fewer daily servings of fruits and vegetables is about twice the risk of cancer, compare with those who consumed four or more daily servings. On the contrary Jenkins and Homer (2005) observed that excessive dieting can contribute to nutritional deficit in adolescents.

Despite the poor habit of the consumption pattern of fruits and vegetables among the adolescents. The respondents reveal that they do consume fruits and vegetables and about 19% of the respondents accepted the fact that fruits and vegetables are significant protection against chronic diseases. However, estimate of the WHO (2000) point to approximately 2.7 million of death worldwide in year 2000 that could have been prevented with adequate fruits and vegetables intake, this would reduce global burden of diseases. While Schneider, Norman, Steyn and Bradshaw (2007) reported that low fruits and vegetables intake accounted for 3.2% of total death in South Africa in the year 2000.

It was discovered that literacy leads to knowledge. In order to meet the standard of World Health Organization (WHO) in respect to the consumption pattern, education and income are important factors contributing to healthy eating. Finding shows that 100% of the respondents were secondary school students and 62% received daily income, 17% received weekly income while 19% received monthly income respectively. Thus, the association of education and income may be related to knowledge of health and ways of preventing diseases by following the standard of WHO in the daily consumption of fruits and vegetable pattern which is 400 grams per, day.

However, Gibson et al (1998) stated that, the level of education has been shown to be related to fruits and vegetables consumption in children and adults. It has been shown that mothers with a higher level of education tend to consume more fruits and vegetables and also influence their children to do so and that higher income influences the availability of fruits which in turn affect consumption in both adults and children. While De Irala - Estevez et al (2000) stated that low income groups have a greater tendency to consume unbalanced diets and in particular have low intake of fruits and vegetables.

Present findings show that parental influence is a great factor in the process of fruits and vegetables consumption pattern. The result from the respondents revealed that 53% of the respondents were motivated by their parents in the consumption of fruits and vegetables while 47% of the respondents were not motivated by their parents. Videon and Manning (2003) is of the opinion that parental presence at the evening meal is positively associated with higher consumption of fruits and vegetables. While Fisher et al (2002) indicated that parental pressure to eat fruit and vegetable discourage intake among young girls.

From findings, it was revealed that the respondents have different believes in their ways of life because they are not from the same ethnic group and their culture differs. The finding reveal that 39% of the respondents were not imposed by their culture in the intake of fruits and vegetables while 61 % were imposed by their culture in the intake of fruits and vegetables.

Azubuike and Achinewhu (2005) reveal that culture, season and availability are the factors that influence fruits and vegetable consumption in some areas of River state. On the contrary, Musaiger (2012) reveals that income, religion, preference, education and mass media are the noticeable factors that have influenced on consumption pattern of fruits and vegetables in Arab world.

Peer group is another factor that influences the consumption of fruits and vegetables. Study revealed that 86% of the respondents were not influence by their peer group only 14% were influence by their peer group. (Hayden, 2009) reported that some adolescents indicated that their friends encourage them to eat certain fruits and vegetables while Harrison (1999) noted that peer group has serious influence on consumption pattern of fruits and vegetable among American adolescents.

Season is an important factor when choosing fruits and vegetables. The findings analyzed that 64% of the respondents were affected by season when consuming fruits and vegetables while 36% were not affected by the' season when consuming fruits and. vegetables. In respect of this, season are classified into two groups which are dry and et season 22% of the respondents prefer to consume fruits and vegetables in dry season while 78% of the respondents prefer to consume fruits and vegetable in wet season. Nevertheless, study reveals that both season has different crops that they produced. Any crops that they produced in its own season are rich in their respective nutrients. According to Godber (1990) stated that most vegetables contain substantial amount of minerals, particularly calcium, iron and potassium. But mineral content is not an indicator of nutritive value as presence of interfering substances (e.g. oxalic and phytic acid) can hinder bioavailability of this micro- nutrient while Shewfelt (1990) said the exact nutrient content of fresh vegetable off the shell cannot be determined because of a high degree of variation. Sources of variation include genetic, potential, crop growth and cultural condition, maturity at harvest, post-harvest, handling and storage, condition and type as well as degree processing.

Summary
The consumption of fruits and vegetables has been proposed to protect and reduce the global burden of diseases among adolescents. Its importance cannot be minimized due to its association with the prevention of chronic diseases like cardiovascular diseases; diabetes, obesity etc. Low fruits and vegetable consumption is an important risk factor for these chronic diseases especially in developing countries. The consumption of fruits and vegetable among adolescents represents an important life stage for development of healthy nutrition behaviours. The nutritional demands is associated with rapid physical and cognitive development and maturation are substantial.

Therefore, the promotion of healthy nutrition during adolescence has the potential to confer significant long-term health benefits.
This study examined the functions and problems of fruits and vegetable consumption among adolescence. Some of these functions include:
They are good source of vitamins, iron, mineral and other nutrients;
They help in the prevention of diseases in the body;
They aid digestion and soften the bowel system etc.

Problems of Fruits and Vegetable Consumption among Adolescents
These include:
* Poor measuring intake of fruits and vegetables;
* Effectiveness of intervention and programmes promoting fruits and vegetable intake;
* Production interventions to improve the availability and access of fruit and vegetables for all;
* Meeting consumers' needs and preference for fruits and vegetables;
* Food safety aspects in fruits and vegetables.

CONCLUSION

This study revealed that the larger number (99%) of adolescents take fruits and vegetables and 64% eat them regularly which is an important public strategy for reduction of risk for chronic diseases, consuming adequate amount of fruits and vegetable had shown to greatly reduce the risk of coronary heart diseases, diabetes, obesity etc. However, many factors determine the consumption of fruits and vegetables among adolescents, which include: parental influence, peer group, seasonal effect, socio-cultural amongst others. It has been investigated that the adolescent in Kosofe local government area do not estimate the amount of fruits and vegetables consume due to lack of knowledge and these affect their consumption pattern. The result stressed the need for intervention program aimed at increased consumption of fruits and vegetable among adolescent.
Finally, since the majority (49.5%) of the respondents who consume fruits and vegetables do so for the purpose keeping them healthy among other reasons, this could confer protection through anti-carcinogenic components such as antioxidant in particular, carotenoids and vitamin C, Folic acid and flavonoids embedded in fruits and vegetables.

RECOMMENDATIONS

From observation, there is need for increased consumption of fruits and vegetables because of their antioxidant content, compared to carbohydrate foods mostly consume by adolescents. Fruits and vegetables protect humans against chronic diseases.

Antioxidants are substances which protect the cells against the effects of free radicals, while free radicals are molecules produced, when the body breaks down food. Antioxidants help to fight and counter the harmful effects of unstable molecules in human bodies 'free radical', which also causes various degrees of cancers.

Apples have also been confirmed to improve memory and learning and slowdown ageing. It contains pectin, a soluble fiber that helps to lower blood cholesterol. Fruits such as oranges, aside from being rich in Vitamin ·C, have folic acid and fibre. Folic acid helps in blood production, while fibre cleans the intestines and aids it to function properly.

Consumption of more water melon hydrates the body and is rich in iron" which strengthen and protect all the body organs. Water melon is also essential for menstruating, pregnant and lactating women, who lack iron which results in anemia Increased consumption of carrots is very' good' because its richness in Vitamin A and beta carotene, which improves vision. Carrots also prevent eye-related diseases such as cataracts and also help the heart to function properly and strengthen the Immune system.

Fruits' and vegetables offer - proven protection against chronic diseases. Eating fruits and vegetable has an influence on physiological processes which can reduce the risk factors of a wide chronic diseases.

Finally, there is need for intervention programmes 'aimed at increasing consumption of fruits and vegetables to develop effective consumption and understanding of the present consumption pattern is needed.

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HEALTH PROVIDER'S KNOWLEDGE, ATTITUDE AND USE OF MATERNAL AND CHILD FOOD BASED DIETARY GUIDELINES AT ANTENATAL CARE IN URBAN SLUM

Okunaiya, G. A. and Oladeji, D.
Department of Family, Nutrition and Consumer Sciences,
Obafemi Awolowo University, Ile-Ife. Nigeria.
sobandegbone@yahoo.com and dijideji@yahoo.co.uk

ABSTRACT
Food based dietary guideline gives suggestion on what an individual should eat in terms of food rather than nutrients. A needs assessment of the study area "Ajegunle" show that most inhabitants can be classified as the urban-poor. Several nutritional deficiencies that are common in poor areas around the world are found in particularly high levels in urban slums. The study assessed health provider's knowledge, attitude and use of the Nigerian food based dietary guidelines. The study is a descriptive and cross-sectional survey. Purposive and convenience sampling were used to select 30 health providers from ante-natal clinics in the five Primary Health Care Centers in the slum. A standardized structured questionnaire was used to collect relevant information from the respondents. Data were analysed using descriptive tools as frequency, percentage, mean and standard deviation. Most of the Health providers (70%) had no knowledge of the existence of the Nigerian food based dietary guidelines. Furthermore, most of the health care workers were undecided about the importance and safety of the food based dietary guideline for pregnant women and delivery outcome (66.7%). Also, greater proportions of the health care providers' were not using the Nigerian Food Based Guideline in instructing pregnant women at ante-natal clinics (100%). Health providers instructed pregnant women based on personal convictions and varied assumptions. There was no observable "used standard" to instruct pregnant women on their nutrition. The government should enforce the use of the national food based dietary guidelines and make copies available to Health providers.

Keywords: Food Based Dietary Guidelines (FBDG), Health Provider, Pregnant women, Knowledge, Attitude, Use.

INTRODUCTION
Adequate nutritional intake during pregnancy has been recognized as an important factor for healthy pregnancy and desired pregnancy outcomes (Bawadia et al, 2010). Pregnant women are a vulnerable group. The incidence of dietary inadequacies is higher during pregnancy than at any other stage of the life cycle (Rao, Sahoo & Basumati, 2006). According to Black et al., (2008) inadequate maternal nutrition results in increased risks of short term consequences such as; Intra Uterine Growth Restriction (IUGR), low birth weight, preterm birth, prenatal and infant mortality and morbidity.
According to UNICEF, each year, more than half a million women die from causes related to pregnancy and childbirth (UNICEF, 2009). Many of the 200 million women who become pregnant each year, most of them in developing countries, suffer from ongoing nutritional deficiencies (Mora & Nestel, 2000). These along with inadequate obstetric care, contribute to high rates of maternal mortality and poor pregnancy outcomes (Huffman, et al, 2001). Maternal under-nutrition diminishes a woman's productivity, causing repercussions for herself, her family, her community, and the broader society. A study showed that, nutrition knowledge was predictive of change in dietary habits and health advices encouraged expectant women to advance their food intake (O'Brien G, & Davies, 2007).

Hence the need for adequate and appropriate knowledge and practice of dietary guideline for pregnant women. There is a lot of information from different sources on nutrition and health. However, some of the nutrient information available can be quite complex, not well understood and is of limited use to a majority of consumers. This makes nutrient advice that is provided in a way that a majority of consumers can understand a necessity. Also, the need to carry out this study among this vulnerable group in the urban slum area is important because attention to ensure appropriate dietary behavior and proper nutrient intake will help to develop appropriate strategies to ensure appropriate and adequate nourishment to achieve optimum health for both mother and foetus (Wen, Flood, Simpson, Rissel, & Baur, 2010). Also, this study will provide a baseline for formulating and making suggestions for targeted programmes and interventions to improve the nutrition of pregnant mothers in the target area. These require more than just measuring nutritional status; they require a thorough understanding of what people actually eat and what personal factors underlie people's dietary habits (FAO, 2014). A needs assessment of the Ajegunle show that most inhabitants can be classified as the urban-poor (Olajide. O., 2010). Several nutritional deficiencies that are common in poor areas around the world are found in particularly high levels in urban slums. (Gosh & Dheeraj, 2004).

Food-Based Dietary Guidelines (FBDGs) is a key strategy to promote healthy daily food consumption and appropriate lifestyles (Sirichakwal & Sranacharoenpong, 2008). Dietary interventions involving use of Food–Based Dietary Guidelines (FBDG) have been reported to be effective in improving maternal malnutrition and its attendant negative birth outcomes (Wen et al, 2010). As nutrition knowledge was predictive of change in dietary habits and health advices encouraged expectant women to advance their food intake (O'Brien & Davies, 2007). FBDG as a general public dietary intervention programme, are simple messages on healthy eating (Olajide .O, 2010; Sirichakwal & Sranacharoenpong, 2008) gives suggestions on what an individuals should eat in terms of food rather than nutrients. The FBDG is a professional dietician's guide, which helps to plan diets from all the food groups and to establish principles for good eating habits needed for disease prevention in the general population. Most health professionals can impart basic nutrition advice and contribute significantly to the provision of nutrition services (Drewnowski & Specter, 2004).

Nigeria began developing its dietary guidelines in 2000 and published them in 2001. The guidelines were developed by the Ministries of Health, Agriculture and Rural Development and Information; Universities, WHO, Helen Keller International, International Institute of Tropical Agriculture, and Pediatric and Nutrition societies.
Below are the dietary guidelines for pregnant women:
* Eat diet that contains a variety of foods in adequate amounts.
* Consume enough food to ensure adequate weight gain.
* Eat more cereals, legumes, fruits, vegetables, dairy products and animal foods.
* Take iron and folic acid supplements as prescribed.
* Avoid alcohol, addictive substances and smoking.

The dietary guideline was published in English, Hausa, Igbo and Yoruba in 2001. However, studies to assess health provider's knowledge, attitude and use of FBDG in instructing pregnant women at antenatal care especially, in poor-settings are sparse. There are not enough dietitians and nutritionists available to serve the entire healthcare industry. That means that nurses and other health care providers often fill the role of nutrition counselors in most Healthcare settings (W.H.O, 2009). This study therefore assessed health provider's knowledge, attitude and use of FBDG in instructing pregnant women at antenatal care in Lagos State, Nigeria.

Objectives
The study's purpose was to assess Health Provider's Knowledge, Attitude and Use of Maternal and Child Food Based Dietary Guidelines at Antenatal Care in Urban Slum.

The objectives of the study were to:
i. assess Health provider's knowledge of the Nigerian food based dietary guidelines.
ii. assess Health provider's attitude regarding the importance of the Nigerian food based dietary guidelines to improve maternal and child health.
iii. assess Health provider's use of Nigerian food based dietary guidelines.to instruct pregnant women during antenatal care.

METHODOLOGY

Study design: The study is a hospital based descriptive and cross-sectional survey.

Study area: The study was conducted in Ajeromi Ifelodun Local Government area of Lagos State. It has five primary health care centres, and one general hospital. Ajeromi Ifelodun Local Government area in Badagry Division, Lagos State according to the Nigerian population census of 2006, has 687,316 inhabitants. It covers some 57,276.3 per square kilometer. Ajegunle is its headquarters. It is one of the world's most densely populated areas, and it is located in the heart of Lagos, Nigeria. The study area is a notorious slum in Lagos, Nigeria, and home to inhabitants from all the tribes of West Africa (2007 Paradigm Initiative Nigeria).

Study population: The study population consists all health workers in Ajeromi-Ifelodun primary health care centres providing care to pregnant women attending ante-natal clinics.

Sample and sampling technique:
A sample of 30 health providers (due to paucity of health providers, all available and consenting health providers present at the time of the study) were involved in the study. The respondents were selected from ante-natal clinics in five Primary Health Care Centres (PHCs) namely Layeni, Akere, Amukoko, Tolu and Ibafon in Ajeromi-Ifelodun Local Government Area (LGA), in Badagry division of Lagos State, Nigeria. Purposive and convenience sampling techniques were used to select the sample. All consenting health providers that participated in the care and instruction of pregnant women at antenatal care were used for the study.

Data collection:
A pretested, interviewer-administered questionnaire titled Health Provider's Knowledge, Attitude and Use of Maternal and Child Food Based Dietary Guidelines at Antenatal Care in Urban Slum was used as the survey instrument. The structured questionnaire assessed knowledge and attitude and Use. Standardized questions were gotten from International (Knowledge, Attitude and Practice) K.A.P questionnaire manual, F.A.O 2014 guidelines and the national food based dietary guidelines. Attitudes were measured by asking the respondents to judge whether they were positively or negatively inclined towards nutrition recommendations or FBDG. The respondents rated their answers on a five-point Likert scale of 'strongly disagree', 'disagree', 'indifferent', 'strongly agree', and 'agree'.

Validity of instrument:
The instrument was validated by making sure that a comprehensive review of related literatures was conducted and salient variables relating to knowledge, attitude and practice of food based dietary guidelines among pregnant women were used to develop the questionnaire. Also, a standardized FAO KAP template was used to construct questionnaire. After development of the questionnaire, it was subjected to review by specialist.

Reliability of instrument:
This refers to the consistency of a measure. A measure is said to have a high reliability if it produces consistent results under consistent conditions. Reliability was ensured by coding copies of the pre-texted questionnaires and subjected to analysis which yielded high correlation coefficient (r = 0.7).
Data management and analysis:

Data entry, checking and analysis was done using Statistical Package for Social Science (SPSS) software. The Data was analyzed using descriptive statistics such as frequency and percentages. Mean and Standard Deviation was also used.

Ethical consideration:
Permission was also obtained from Ajeromi Ifelodun LGA authorities before the commencement of the study. All respondents gave signed informed consent for participation in the study. All participants signed an informed consent form.

RESULTS

Figure I: Health Providers' knowledge of the existence of Food Based Dietary Guidelines.

In figure I, most of Health Providers had no knowledge of the existence of the Nigerian Food Based Dietary Guidelines. Only (30.0%) had knowledge of existence of the Nigerian food based dietary guidelines.

Table I: Health Providers' Attitude to FBDG

Variables	SA	A	I	D	SD	Mean
Food based dietary guideline exists to help people to eat more healthily and have a healthy diet.	00	20	70	10	00	3.10
Food based dietary guideline is important for safety of pregnant women and delivery outcome.	00	20	67	13	00	3.07

Key: SA – Strongly Agree, A – Agree, I – Indifferent, D – Disagree and SD – Strongly Disagree

In Table I, majority of Health Providers showed indifference in their attitude towards the Food Based Dietary Guidelines (most of the health care workers were undecided as regards the claim that Food Based Dietary Guideline exist to help people to eat more healthily and have a healthy diet). Majority of Health Providers did not think that the FBDG is important for the safety and delivery outcome of pregnant women (more than half of the health care workers were undecided about the importance and safety of the food based dietary guideline for pregnant women and delivery outcome).

Table II: Health providers' use of instructions contained in FBDG

Areas where pregnant women are educated	Freq. (n=30)	%
Eat diet that contains a variety of food in adequate amounts	30	100.0
Consume enough food to ensure adequate weight gain	18	60
Eat more cereals, legumes, fruits, vegetables, dairy products and animal food	30	100
Take iron and folic acid supplements as prescribed	30	100
Avoid alcohol, additive substances and smoking.	30	100

In Table II, all of the Health care providers stated that they educated the pregnant women who attended antenatal clinic on the need to (eat a diet that contain a variety of food in adequate amount eat more of cereal, legumes, fruits, vegetables, dairy products and animal food; take iron and folic acid supplement as prescribed, and avoid alcohol, addictive substances and smoking). However, only (60%) of Health providers instructed pregnant women to consume enough food to ensure adequate weight gain.

Table III: Health Care Providers use of Food Based Dietary Guideline to instruct/guide

Use FBDG as food guide for Pregnant women	Freq. (n = 30)	%
Yes	00	00.0
No	30	100.0
If no, indicate the reasons		
No access to FBDG	30	100.0
Health Care Providers would like to use Food Based Dietary Guidelines		
Yes	9	30.0
No	12	40.0
I don't know	9	30.0

Table III shows that none of the health care providers were using the Food Based Dietary Guidelines to instruct/guide pregnant women. Furthermore, none of the health providers had access to the FBDG and 40% of the healthcare providers indicated no interest in wanting to use the FBDG in instructing the pregnant women.

DISCUSSION

Maternal healthy nutrient intake during pregnancy may affect the wellbeing of expectant mother outcomes (Bawadia et al., 2010). The purpose of the study is to describe the knowledge, attitude and use of Food based dietary guidelines by Health providers in instructing pregnant women in an urban slum of Lagos.

Although, pregnant women have been advised on what to eat during pregnancy by Health Providers at Ante-natal Clinic. Results of the study showed that heath providers had no knowledge of existence

of a Nigerian FBDG. Advice given were made up from some instructions contained in the Nigerian FBDG. This instructions might have been learnt at school and also might be infused with personal belief system of the individual health providers. Furthermore, majority of health providers did not think that the FBDG is important for the safety and delivery outcome of pregnant women. However, Table II showed inconsistency in instructions given by health providers. This might be due to the non-use of standard reference material to guide Health providers such as the Nigerian FBDG.

A study carried by Munuo, Mugendi, Kisanga, & Otieno (2016) showed that nutrition knowledge and practices was poor among healthcare workers in management of some diseases. Although, the study reported attitude towards nutrition information as positive. Furthermore, a study carried out by Happy (2010) showed that the overall nutrition knowledge, attitude and practice of health workers in Tanzania was poor.

CONCLUSION

Health providers instructed pregnant women based on personal convictions and varied assumptions. There was no observable "used" standard to instruct pregnant women on their nutrition. This is in conflict with W.H.O suggestion that dietary guidelines should serve as guidance for professionals or the public (WHO, 1998). This might bring about varied health outcomes in maternal and child health based on the knowledge of individual health provider.

RECOMMENDATIONS

The government should enforce the use of the national food based dietary guidelines and make copies available to Health providers. The ministry of Health, concerned parastatals and government agencies should advertise the Food based dietary guidelines on the media and through pictorial representations. The government and non-governmental organizations should provide trainings on the importance of food based dietary guidelines to Health providers.

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