

## **Benefits and Challenges of School Lunch Program in Osun State**

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### **Abstract**

This study examined the benefits and challenges of school lunch program in Iwo local government of Osun State. It was a survey. The population consisted of all teachers in the 60 public primary school of the local government which is 623. A sample of 244 respondents was drawn from the schools using simple random technique. Questionnaire was used for data collection. Data were analyzed using mean. Findings revealed, among others that, the school lunch program has helped to increase daily attendance of the pupils in the schools and eliminate classroom hunger among the pupils. Recommendations were made for the government to create general level of awareness on cleanliness among the people handling the foods by employing private agencies to follow certain hygiene norms for food preparation and service and to also involve some accredited representatives of the parent/teachers' association in whatever that will be given for the project:

**Keywords:** School, Lunch, Program, Children and Diet.

### **Introduction**

National School Lunch Program (NSLP) is a government assisted meal program for the children in the public primary schools. The program is aimed at ensuring that every school child gets at least one adequate diet daily because one of the major ways to achieve the mission and vision of Education is through proper feeding for children. Similarly, School Feeding Programmes (SFP) have been defined by the World Bank as targeted social safety nets that provide both educational and health benefits to the

most vulnerable children, thereby increasing enrolment rates, reducing absenteeism, and improving food security at the household level.

The program is in operation globally, for instance, in Indian, according to Deodhar, Mahandiratta, Ramani, Mavalankar, Ghosh and Brangaza (2010), the program is operating in over 100,000 public and non-profit private schools and residential child care institutions. In Nigeria, through the Universal Basic Education (UBE) Act, the Home Grown School Feeding and Health

Programme (HGSFHP) was introduced in 2004 by the Federal Government to, among other things, help in achieving the Education for all and the Millennium Development Goals. The legislation provided that at a minimum, all state primary schools must provide at least one meal a day to each pupil (Eno-Abasi & Ujunwa,2015). The phased-pilot rollout spearheaded by the Federal Ministry of Education set sail with 13 states including Abuja, from the six geo-political zones on board. The states were Kebbi, Cross River, Enugu, Ogun, Imo, Kano, Kogi, Rivers, Osun, Nasarawa and Yobe and Bauchi states. At different times, they all abandoned the programme.

In relation to this, two village schools were established in May 2006, by UNDP and its millennium village project partners. One in Pampaida community school of Kaduna State and the second, Ikaram/Ibaram community of Ondo State. The introduction of an innovative school feeding programme which offers lunch to the pupils at midday has boosted school enrolment and curbed truancy among the pupils. More girls are also going to school than ever before. There are currently 196 girls out of the 420 pupils in Pampaida- a remarkable leap in girl-child enrolment for a poor, rural community that customarily marries off its girls at the age of twelve. According to Olori (2005), it is a government program in Nigeria to provide primary-school

children with free lunches and to ensure that pupils learn effectively.

In Osun State, which is the only state in the country where the program is presently ongoing, the program was later officially launched in 30<sup>th</sup> May, 2012 by Ogbeni Rauf Aregbesola and tagged, "Osun Elementary School Feeding and Health Programme"(OESFHP) and has been sustained since then. OESFHP now known as O-MEALS (where the "O" stands for Osun) is one of the few surviving school meal programmes in the country. Beneficiaries of the programme are 254,000 while in the process, capacity building and empowerment of 3,007 community caterers has taken place and the local poultry industry given immense boost. Akanbi (2011); Yunusa, Gumel, Adegbusi and Adegbusi(2012),the aim of OESFHP was to provide a nutritionally adequate meal during school hours while boosting food production by local farmers. According to the State Government of Osun State (The Sun and Guardian news paper, 2016), the programme, has helped increase school enrolment by a minimum of 38,000 pupils, representing 25% since the commencement of the revised programme. Ajani (2009) documented the beneficial effect of the school feeding program on school attendance, advocating that the program be extended to all the states and all primary school classes in Nigeria so as to increase attendance of

school age children and improve enrolment of children in schools.

Despite the numerous benefits the program is bringing or likely to bring to Nigeria children; it is still faced with a lot of challenges. According to Olori (2005), a previous attempt at providing free meals at primary schools proved unsuccessful, due to inadequate planning, a lack of resources and corruption. In Osun State which is the only state where the program is still sustained presently in Nigeria, they are confronted with the challenge of the raw food disbursement and transportation of the prepared food to the various schools. In collecting raw foods like chicken, beef and egg from the local government where the study was carried out, the food vendors' will have to wait for hours before the arrival of the food items. Transporting the prepared foods to the schools is also majorly by motorcycle. The locations of some of the kitchens where the foods are been prepared are not encouraging. The program has been affected by the economic downturn especially in developing countries (Akanbi, 2011). However, some strategies can be put in place to improve and to uphold the program. According to Deodhar *et al* (2010), appropriate mechanism can be set up for quality checks.

Establishing and upholding SLP, especially with the public schools is very important. In a research, Ugochukwu, Onubogu, Edokwe & Okeke, (2014) observed that about half

of pupils in public schools had no lunch pack, that lunch packs play a significant role in the nutritional status and academic performance of school children. According to Oyinlade, Ogunkunle and Olanrewaju (2014), poor nutritional status affects children's ability to learn and that children may not attend school at all due to the inability to purchase food to eat at school. Ugochukwu *et al* (2014) remarked similarly that, children often rush out from their homes very early, with little or no breakfast and may spend long hours (8-10 h) in school daily thereby missing lunch at home. While Olusanya (2010) opined that, malnutrition is likely to result in poor attendance at school, low health status which will invariably lead to high withdrawal rate; if the millennium goal of education for all by 2015 is to be achieved, there is the need to put in place measures that will increase children enrolment, retention and improved academic performance. When children are well fed, their learning abilities heightens and their level of concentration better because their sugar levels would be affected.

#### **Purpose of the study**

The main purpose of the study was to examine the benefits and challenges of school lunch program in Osun state. Specifically the study determined the:

1. benefits of school meal program to public primary schools in Osun state.
2. challenges facing school meal program in Osun state.

- possible strategies to adopt in combating the challenges of school lunch program in Osun State.

### Methodology

**The design and area of the study:** The research was a survey. The area of the study was Iwo local government (LGA) of Osun State

**Population of the study:** The population consisted of all the teachers in the public primary schools in Iwo local government area of Osun state. The total number of public primary schools in the local government was 60 in all the 15 wards that made up the local government. The total number of teachers in all the primary schools in the local government was 623 (Universal Basic Education Commission, UBEC, 2010)

**Sample for the study:** Simple random sampling technique was used to select one primary school, from each ward; this enabled a good representative across the whole local government. 17 teachers were then selected from each of the schools, making a total of 155 teachers.

**Instrument for data collection:** Structure questionnaire was used for

data collection. The questionnaire contains four sections 'A', 'B' and 'C' and formulated based on the 4-points Likert scale type. The response categories for all the sections of the questionnaire were; Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree. The instrument was face validated by three experts in the department of Home Economics in Adeyemi College of Education. The reliability of the instrument was determined using Cronbach's Alpha procedure as it dealt with multiple scored items; it yielded a reliability coefficient of 0.83.

**Data collection and analysis technique:** Two hundred and fifty five copies of the questionnaire were distributed, 248 were retrieved representing 97% retrieval. 244 copies were appropriately filled which were eventually analyzed. Mean scores were used to answer the research questions. Any item with the mean rating of 2.50 and above was regarded as agreement while anyone with the mean rating of below 2.5 was taken as disagreement.

### Findings

**Table 1:** Mean responses of the teachers on the benefits of school lunch program to the public primary schools in Iwo local Government of Osun state.

N = 244			
S/N	Benefits of school meal programs	$\bar{X}$	Remark
1	Increase in pupil's enrolment.	3.96	Agreed
2	Socialization among pupils	2.95	Agreed
3	Reduce classroom hunger.	3.47	Agreed
4	Increase daily attendance in school.	3.77	Agreed
5	Improve nutritional status of the pupils.	2.61	Agreed

6	Contribute to the improvement of the academic performance of the pupils	3.44	Agreed
7	Imparting good hygiene in the pupils	2.74	Agreed
8	Imparting table manner in the pupils.	2.72	Agreed
9	Imparting nutritional education in the pupils	2.94	Agreed
10	Accessibility to low income family.	3.95	Agreed
11	Understanding of balance diet	2.58	Agreed

*Key: N = Number of the teachers,  $\bar{X}$  = Mean.*

Table 1 reveals that the respondents agreed that all the item are benefits the SLP has brought to the public primary schools and the pupils in Iwo local government area of Osun State.

**Table 2:** Mean responses of teachers on the challenges facing school lunch program in Iwo local Government of Osun state.

**N = 244**

S/N	Possible challenges facing the school lunch program.	$\bar{X}$	Remark
1	Inadequate infrastructure such as stores and kitchen.	3.62	Agreed
2	Recess time not enough to serve the food	3.98	Agreed
3	Possibility of food borne diseases.	3.17	Agreed
4	Lack of adequate supervision of meal preparation and handling process	3.35	Agreed
5	Transportation problem in delivery the food on time.	3.91	Agreed
6	Problem of pure drinking water.	3.95	Agreed

*Key: N = Number of the teachers,  $\bar{X}$  = Mean.*

Table 2 reveals that the respondents agreed that all the 6 items are part of the challenges facing the SLP in Osun State.

**Table 3:** Mean responses of teachers on the strategies that can be adopted in combating the challenges of the school lunch program.

**N = 244**

S/N	Possible strategies for the school lunch challenges	$\bar{X}$	Remark
1	Food preparation should be done within the school premises.	3.73	Agreed
2	The food should be disbursed to the school directly	2.42	Disagreed
3	Skilled personnel should be employed to supervise the preparation of the food.	3.07	Agreed
4	Clean drinking water should also be supplied to the pupils.	3.37	Agreed
5	Special vehicle for the transportation of the food items	3.06	Agreed
6	Food stores within the school premises	2.16	Disagreed

*Key: N = Number of the teachers  $\bar{X}$  = Mean.*

Table 3 reveals that the respondents agreed with items 1, 3, 4 and 5 as part of the possible strategies that can be adopted to combat the challenges and disagreed with items 2 and 6.

### **Discussion of the Findings**

The study has identified several benefits the school children are deriving from the SLP. These benefits are: Increase in pupil's enrolment; socialization among pupils; reduce classroom hunger. All these are in conformity with the opinion and findings of Khera (2006) Midday meal can play an important facilitating role in the universalization of elementary education by enhancing enrolment, attention and retention and also contribute to better educational achievement by at least eliminate classroom hunger; Ajani (2009), documented the beneficial effect of the school feeding program on school attendance in Lagos State, advocating that the program be extended to all the states and all primary school classes in Nigeria so as to increase attendance of school age children and improve enrolment of children in schools; Oyinlade, Ogunkunle and Olarnewaju (2014), a midday meal is an important instrument for combating classroom hunger and for promoting better learning; Falade Otemuyiwa, Oluwasola, Oladipo and Adewusi (2012) also documented the objectives of school feeding program in Nigeria as a way of improving the health of school age children, increase their

enrolment, retention and completion rate in the primary school. The SLP plays useful socialization roles, sharing a meal with children of diverse caste and class background can help children overcome traditional social prejudice. The SLP contribute to Increase daily attendance in school and improve nutritional status of the pupils. These are in accordance with Falade *et al* (2012), the continuation of the program would go a long way to preventing malnutrition among the public school children; Ugochukwu *et al* (2014), majority of the lunch packs of primary school pupils contain poor quality food especially in public schools; Steven, Nicholas, Wood and Nelson (2013), school lunches generally had a healthier nutrient profile, with lower Na and percentage of energy from fat, and higher fibre and micronutrient content; Yunusa *et al* (2012), the aim of SLP was to provide a nutritionally adequate meal during school hours. SLP contributes to the improvement of the academic performance of the pupils. Ugochukwu *et al* (2014) in a research observed that, lunch packs play a significant role in the nutritional status and academic performance of school children, access to a nutritious mid-day or afternoon meal is a very important determinant of the nutritional status as well as the overall well-being and cognitive development of school children. SLP helps in imparting table manner. According to Tanaka and Miyoshi (2012), the



children could also learn proper manners, by having meals together with classmates. The study also identified the following as part of the benefits of SLP: imparting good hygiene in the pupils; imparting nutritional education in the pupils; accessibility to low income family; understanding of balance diet. According to Tanaka and Miyoshi (2012), understanding of balanced diet and food culture can be enhanced through learning the menu of each meal.

The SLP in Osun State is facing the following challenges: Inadequate infrastructure such as stores and kitchen where it can be made possible for the food to be prepared within the school premises; recess time not enough to serve the food as the SLP was not yet in place when the school time-table was been designed. In a research conducted by Deordhar *et al* (2010) teachers complained that the recess time is not sufficient to serve meals, as the teachers have to manage the whole affair, they do not get time to eat their own lunch. Part of the challenges confronting the SLP was the possibility of food borne diseases; lack of adequate supervision of meal preparation and handling process. These might occur if the cooks are not trained and monitored to prepare the food under a hygienic condition. The other challenges faced are: transportation problem in delivery the food on time; provision was not made for portable drinking water.

The respondents agreed with the following strategies to combat the challenges faced: Food preparation should be done within the school premises. As reported by Deordhar *et al* (2010), in Indian, the government made provision for some utensil and space for the program, materials supplied by state government were of reasonable quality, all the cooking utensils looked clean and were made of stainless steel; there was a separate area for cleaning the vessels; Skilled personnel should be employed to supervise the preparation of the food. Deordhar *et al* (2010), have suggested setting-up of an appropriate mechanism for quality checks; Clean drinking water should also be supplied to the pupils; Special vehicle for the transportation of the food items; The following strategies were rejected: The food should be disbursed to the school directly and food stores within the school premises. This justifies Olori (2005) that there had been instances of the earlier program being abused by teachers who took away the things and contractors who shortchanged pupils; Deordhar *et al* (2012), report also claims that pilferage and adulteration of grains occurs since grains are supplied and distributed in loose form to schools.

### **Conclusion**

The importance of midday meal can never be over emphasized, especially when it is made free to the less privileges, as most of the people in that category can be found in the

public schools. All the beneficial items identified for the study were accepted by the respondents.

The school lunch program in Osun State is facing some challenges among which are the transportation of the prepared food to the schools, possibility of food borne disease, inadequate infrastructure like kitchen and stores within the school premises. In other to prevent the collapsing of the program, there is need to adopt some strategies.

### Recommendations

1. There should be general level of awareness on cleanliness among the people handling the foods by employing private agencies to follow certain hygiene norms for food preparation and service.
2. Accredited representatives of the PTA (parent/teachers' association) could be involved in whatever that will be given for the project.
3. Another set of people could be employed specially, for the monitoring during the meal time so as not to disrupt the program of the teachers.

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## **Safety Measures Adopted in Management of Public Secondary Schools in Federal Capital Territory, Abuja, Nigeria**

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### **Abstract**

The study investigated the assessment of safety measures in the management of public secondary schools in the Federal Capital Territory (FCT), Abuja. Four research questions guided the study. A descriptive survey was adopted and questionnaire was used for the study. The population comprised all the six area councils in the FCT with 56 senior secondary schools and 3339 teachers. A random sample of 270 teachers was used. Data were analysed using mean and standard deviation. The findings showed that electronic and human safety measures are not adequately employed in schools. Physical safety measures such as fencing, lightening of dark areas and clearing of bushes among others are in use in FCT schools. Recommendations include; provision of security resources by the government; frantic efforts by the principals in attracting support from government, NGOs and the community and teachers' good relationship with students towards information gathering.

**Key Words:** Safety, Measures, Schools, Students, Environment

### **Introduction**

Insecurity is a major challenge confronting our educational system today. There have been records of series of threats and violent attacks on schools leading to loss of lives and properties mainly in rural schools. [Oladunjoye & Omemu (2013); Joda &

Abdulrasheed (2015)]. O'Malley (2007) observed that schools where children are expected to be safe have increasingly become the prime target of attacks by armed parties. School safety involves provision of an environment where teaching and learning are carried out effectively

without threat to the safety and wellbeing of children and other stakeholders. This type of environment promotes students' overall physical, emotional, social, and academic development.

Ensuring adequate safety and security in secondary schools should be a combined responsibility of the government, teachers, school, Parent Teacher Association (PTA), and the community. Igbuzor(2011) observed that security calls for safety from chronic threats and offering an all-round protection.

A school is said to be safe when its physical environment creates an emotionally, psychologically and socially secured atmosphere to members of the school community thereby bringing about improved and effective teaching and learning. This therefore calls for the need to plan for the prevention and intervention of any form of natural, physical, social and technological threats to the school and the entire school community.

Students easily develop a sense of belonging and confidence; maintain a positive state of mind in a school where they feel safe and secured. Akubue (1991) noted that good learning environment fosters desirable behaviour and attitude, problem-solving skills and creative thought; encourages students' interrelationship and learner-centred methods. Children should be safe at school as a result, all stakeholders including government, school, teachers,

community, Parents, NGOs have responsibilities in ensuring this safety.

In the opinion of Akpobibibo (2003), the smooth running of the educational system is achieved when security is assured. Health and Safety Advisers of Northern Ireland Education and Library Boards (1997) classified safety measures into: electronic, physical and human measures.

Electronic Measures which includes the use of alarm, surveillance camera, metal detectors and cell phones. Use of these devices makes it easier to detect intruders and to spread information about emergency situations. Azazi (2011) highlighted the Federal Government's efforts of installing security devices in the different parts of the country to enhance surveillance and thus ameliorate the incidence of crime.

Physical Measures include fencing of the school compound, increasing the height of existing fence if need be, use of well protected doors and windows. In the view of Safe School Initiative (2014), strengthening the physical protection of schools enables staff and students to be shielded and also provides a means of self-defence. Closure of all entrances into the school premises and maintaining the use of one makes it easy for proper monitoring of staff, students and visitors' movement in and out of the school compound.

According to Massachusetts Task Force Report on School Safety and Security (2014), positive, safe and

clean school environment is essential for sound development of the child and high level learning leading to improved students' academic performance. Regular clearing of bushes within and around the school premises and adequate and functional security lightings prevent hideout for intruders.

Human Measures involves the use of guards and security patrols, planning educational programmes on security, community involvement in school security, effective management and "school watch" initiative for school premises (Health and Safety Advisers of Northern Ireland Education and Library Boards, 1997). In the view of Alabi, Oduwaiye & Fasas (2012) staff quality and quantity in the school system and their regular motivation determine their performance on the job, hence the learning environment. The various ways the school can ensure safety through the application of human measures are:

*Use of information:* School administrators should inform members of the school community, community members and parents of the school's safety and security policy, and encourage them to assist the school in its actualization. The Massachusetts Task Force Report on School Safety and Security (2014) stated that schools should be a safe place for students to learn and teachers to teach. For this to be achieved, all school and community

stakeholders must be committed to the course.

*Personnel Training:* It is imperative that regular training programmes on security be organised for staff, students and security personnel in school. The training could be on how to escape during attacks, dissemination of information during emergency, techniques of screening visitors and technical ways of handling visitors suspected to be harmful among others. According to Health and Safety Advisers of Northern Ireland Education and Library Boards (1997), school safety officers need to be able to "identify legitimate visitors, monitor their arrival as well as their movement around the school, and their departure time"

*Community Involvement:* According to Achumba, Ighomereho & Akpor - Robaro (2013), "communities should be vigilant of strangers in their localities to ensure that criminals do not have easy access to their communities". Involving the community in this task makes the school to be recognised as a part of the community it serves, this attracts support. As stated by Safe School Initiative (2014), "communities have specialised knowledge about their particular context and conflict dynamics, and may even know the individuals involved, they may be the best suited to devising practical solutions for protecting education from attack and for helping negotiate schools as peaceful zone". The

community serves as the eye of the school; they occupy good position to inform the law enforcement personnel and the school of strange movements or activities of people through the introduction of the “school watch system”. The school watch system encourages neighbours living around the school to report any suspicious person or unusual events to the police (Health and Safety Advisers of NI Education and Library Boards (1997). Other ways the school can employ human measures include; the use of religious leaders, quick response approach and counselling. According to the National Association of School Psychologists (2013), “studies have shown that the presence of security guards and metal detectors in schools negatively impacts students’ perceptions of safety and even increase fear among some students”. Counselling therefore serves a great purpose in this regard.

The findings in Amanchukwu (2012) revealed that the challenges in ensuring safety and security in schools include; inadequate manpower, erratic power supply, corruption, inadequate funds and lack of training for staff and students.

The success of an educational system depends on the nature of the learning environment. Massachusetts Task Force Report on School Safety and Security (2014) stated that “No child will be able to succeed academically if they do not first feel safe in school. No teacher will be able to teach at their best if they are not

confident there is a plan in place to ensure their school is well prepared for an emergency.”

A safe learning environment naturally motivates both staff and students to always be in school. Recent threats and attacks on schools, conflicts between cults, cases of rape among others vices in secondary schools have resulted to increased dropout rate and poor academic performance. O’Mallay (2007) noted that schools have become the target of attacks instead of a place of safety for children. These may have led to irregular school attendance by students and teachers, poor academic performance and subsequently increased dropout rate.

The studies of Oladunjoye & Omemu (2013); Joda & Abdulrasheed(2015) revealed the incessant attacks on schools by insurgents with illustrations of the abduction of 200 school girls in government secondary school, Chibok, Borno State in 2014, killing of 49 students, injuring 69 students and 6 teachers in government secondary school Potiskum, Yobe State 2014, and bombing of school of agriculture, Yobe State in 2013 killing 60 students. There are also records of attacks in other areas of the Federal Capital Territory other than schools in 2011 and 2014 (Ibange 2015) . This has led to panic by parents concerning their children in schools in the FCT. Attacks on schools in other states could probably be as a result of inadequate security measures in the schools. It therefore becomes

necessary to ensure that safety measures are adopted in the management of public secondary schools in the FCT.

### **Purpose of the Study**

The study focussed on the safety measures adopted in the management of public secondary schools in the Federal Capital Territory, Abuja. Specifically, the study

1. determined ways electronic safety measures are used in public secondary schools in FCT
2. determined ways physical safety measures are provided in public secondary schools in FCT
3. determined ways human safety measures are employed in public secondary schools in FCT

### **Methodology**

**Area of Study:** The area of study was the Federal Capital Territory Abuja. The study covered three area councils of Bwari, Kuje and Gwagwalada in the Federal Capital Territory.

**Design of the Study:** The study adopted a descriptive survey design. This involves collecting data from a representative sample of the population for intensive study and making analysis in order to answer questions, and then generalize the result to the population (Asika 1991).

**Population for the Study:** The population comprised all the teachers (3,339) in the 56 public senior secondary schools in the six Area Councils in the FCT.

### **Sample and Sampling Technique:**

Three Area Councils were selected from the six Area Councils in the FCT. From each of the three Area Councils, six schools were selected and fifteen teachers each giving a total of 270 teachers. The multi stage and simple random sampling were used for the selection.

### **Instrument for Data Collection:**

Questionnaire titled Teachers Questionnaire on Safety Measures in Secondary Schools(TQSMSS) was used to collect data. A four-point Likert scale of strongly agreed (SA), Agree (A), Disagree (D), and Strongly Disagree (SD) was adopted. The instrument was validated by experts. A reliability index of 0.84 was obtained after pilot testing using split-half method and then Pearson Product Moment Correlation.

**Data Collection Technique:** The research instrument was administered to the respondents in their various schools and collected on the spot. The respondents are teachers in public secondary schools in Bwari, Kuje, and Gwagwalada area councils of FCT

**Data Analysis:** The data collected were analysed statistically using mean and standard deviation. Mean scores above 2.5 were regarded as agreement while those below 2.5 were considered as disagreement.

### **Results and Findings**

#### **Research Question One**

In what ways are electronic safety measures in use in public secondary schools in FCT?



**Table 1:** Mean Responses on the Use of Electronic Measures in Secondary Schools in FCT

S/N	Use of Electronic Measures	Mean	STD DEV.	Decision
1	There are alarms against fire in the School building	1.40	1.62	Disagree
2	There are surveillance camera in the gate and school premises	1.09	0.30	Disagree
3	Security guards are equipped with panic buttons for emergencies	1.46	0.84	Disagree
4	Security guards have effective cell phone for communication	2.27	1.17	Disagree
5	Security guards have metal detectors for screening visitors entry the school	1.41	0.77	Disagree
<b>Sectional Mean</b>		<b>1.53</b>		<b>Disagree</b>

N= 270

Table 1 indicates a general disagreement on all the items on the use of electronic safety measures in schools. The sectional mean of 1.53 shows that electronic safety measures are not used in public secondary schools in the FCT.

### Research Question Two

How are physical safety measures provided in public secondary schools in FCT?

**Table 2:** Mean Responses on the Provision of Physical Safety Measures in Secondary Schools in FCT

S/N	Indicators of Physical Safety Measures	Mean	STD DEV.	Decision
1	The School compound is fenced with high walls	2.40	1.15	Disagree
2	All dark areas within and around the school are properly lit at night	2.14	1.10	Disagree
3	Bushes within and around the school premises are always cleared	3.60	0.57	Agree
4	Door frames and hinges are in good conditions and strong	3.32	0.87	Agree
5	Doors and windows have strong burglary	2.05	1.02	Disagree
<b>Sectional Mean</b>		<b>2.70</b>		<b>Agree</b>

N=270

The Table 2 shows agreement on the use of physical safety measures in the areas of bush clearing and good condition of doors. Conversely, there was disagreement on fencing of school compound, lighting of dark areas at night, and provision of burglary for doors and windows. The sectional mean yielded 2.70 showing that physical safety measures are provided

in public secondary schools in the FCT.

### Research Question Three

In what ways are human safety measures employed in public secondary schools in FCT?

**Table 3:** Mean Responses on Human Safety Measures Employed in Secondary Schools in FCT

S/N	Human Safety Measures	Mean	STD DEV.	Decision
1	Staff and Students have identity cards and always put it on	2.40	1.03	Disagree
2	Visitors are thoroughly screened before allowed into the school premises	2.55	1.08	Agree
3	Visitors are required to wear the school tag before allowed access into the compound	1.45	0.58	Disagree
4	Students and staff entering and leaving the school compound are monitored	2.73	1.09	Agree
5	There is adequate number of security guards in schools	2.14	1.06	Disagree
6	Safety and security training program is organised for members of the school community	1.54	0.84	Disagree
7	Visitors are not allowed to come into the school premises with cars	2.05	1.07	Disagree
<b>Sectional Mean</b>		<b>2.12</b>		<b>Disagree</b>

N=270

Table 3 shows agreement that visitors' are screened also students and staff monitored. All other items recorded disagreement. Generally a sectional mean of 2.12 indicates that human safety measures are not employed in public secondary schools in FCTSS

### Discussion of Findings

Protection of lives and properties in school creates room for sustaining the educational system of a nation; the learning environment must be conducive to guarantee effective teaching and learning where teachers

and students have assurance of safety within the school environment. Security is not just the absence of threat from the people, but also the ability to protect them from developmental inadequacies (Imobighe, 1998). There is a call for patience from people living in unsecured areas, just signing of peace accord may not be enough (Mathieu Bere, 2011). This therefore demands that all stakeholders should collaborate to find lasting solutions to the insecurity in the land. Education being a major tool for national growth

and development requires adequate finance and human resources (staff and students) for continuity towards the achievements of its aims. From the analysis of data collected, the following findings were made:

The findings on the use of electronic safety measures in public secondary schools revealed that these safety measures are not adequately in use in the FCT. This is in line with the findings of Amanchukwu (2012) who found that there are a number of challenges to the implementation of electronic safety measures. This implies that intruders cannot be detected and monitored electronically; school security guards will not be able to easily detect any visitor, staff or student who may come into the school with weapons, neither will they be able to pass information timely.

It was shown from the study that physical measures of safety are in use in public secondary schools in FCT. This corresponds with the findings of Oladunjoye & Omemu (2013) that found out that, even in the face of attack, some secondary school students still take the risk of attending school. This implies that there are physical safety measures put in place that give them assurance of safety. Akintoye (2010) opined that incidence of attack by insurgents result in absolute fear in survivors who are frightened to send their children to school especially when they are not certain of the provision of security measures.

Human safety measures were found not to be in adequate use in schools. However, a study carried out by Oladunjoye & Omemu (2013) revealed that schools in urban areas received protection from government security forces during insurgency. The challenge of insecurity is not peculiar to any nation rather the ability to manage the challenge is what makes the difference between developed and developing countries. According to Akintokumbo (2011), the success of these countries to manage the threats of insecurity depends on their level of information gathering, the extent to which they allocate resources against threats, and their level of patriotism and unity.

School administrators have important role to play in ensuring that lives and property within the school are well protected. Amanchukwu 2014, stated that there is no hope for a nation where the education of the child is negatively affected. Safety and security in school can be achieved through consultation with the community within which the school is located and seeking assistance from philanthropists, Non-Governmental Organisations (NGOs) to employ and train security personnel for the schools.

### **Conclusion**

The study revealed that the bushes within and around school premises were always cleared, door frames and hinges are in good conditions while others physical safety measures are

not in use. It also found that visitors are thoroughly screened before allowed access into the school premises, and staff and students entering the school premises are monitored while other human safety measures were found not to be in adequate use. Finally, it was confirmed from the study that electronic measure of safety were not being employed in public secondary schools in the FCT.

The success of any educational system is hinged on proper planning, efficient administration and adequate financing. Properly planned safety measures, backed up with adequate finance for its implementation is a gateway to successful safe learning environment. Amanchukwu 2014 was of the view that there is no hope for a nation where the education of the child is negatively affected.

School administrators, parents, government and all meaning Nigerian have enormous responsibility of ensuring safety and security in the school for the achievement of the broad goals of secondary education which include useful living within the society, and higher education. There is a call for patience from people living in unsecured areas, just signing of peace accord may not be enough (Mathieu Bere, 2011). This therefore demands that all stakeholders should collaborate to find lasting solution to insecurity in the land.

### **Recommendations**

The consciousness of safety makes it easier for everyone to work towards making the school a safe haven for learning. Ensuring safety and security in schools is quite expensive; hence,

1. Government need to go back to the drawing board and make necessary plans for the provision of resources for school safety particularly electronic and human safety measures.
2. School administrators should put in tireless effort to make the school a safe and secured place for learning. They are not to relent in their quest for support from the government, Non-Governmental Organisations (NGOs), Companies, and Parent Teachers Association (PTA) for the provision of adequate and well equipped security personnel in the school. They should organise sensitization programmes where members of the community will be well informed on the effects of threats and violent attacks in schools.
3. Teachers should endeavour to establish good relationship with students. Through this, they will be able to get necessary information from them on security matters.
4. Parents and other stakeholders should show high level of interest in ensuring safety and security in public schools. Through their little contributions, the physical safety measures in the school can be provided, and also educate their

children/ wards on issues of security.

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## **Issues in Food Canteen Patronage by Households in Kajola Local Government Area of Oyo State**

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### **Abstract**

The study was designed to investigate the issues in canteen food patronage by households in Kajola Local Government area of Oyo State. Four research problems were formulated for the study. Questionnaire was used to collect relevant data to form a sample of 127 households used for the study. Multistage sampling technique was used to select the sample. Percentages were used to answer the research questions. The findings revealed that the households patronized canteen foods twice in a day due to its fast accessibility and nature of job that left scarcely no time for food preparation, but, the main issue lies in poor hygiene status which was strongly recommended to be regulated for positive change.

**Keywords:** Canteen, Food, Patronage, Households

### **Introduction**

The importance of adequate nourishment for general health and work productivity hardly needs emphasis as this leads to dire need for good food (Christopher, 2005). Food generally when adjudged nutritious contains balanced diet characterised by carbohydrate, protein, fats, vitamins, mineral resources and water. The majority of the daily calories are obtained from fresh fruits and vegetables, whole grains, and lean proteins (FAO, 2007 and Nzeka, 2011). A balanced diet is important based on the reason that body organs and tissues need proper nutrition to work effectively and moroso prevents the body from being attacked by disease

infection, fatigue, and poor performance (Dipeolu, 2007 and WHO, 2012). However, in consuming balanced diet, USDA highlighted alcohol, cholesterol, refined grains, solid and perforated fats, salt and sugars as averters of heavyweight which is inimical to sound health.

In a desperate need to accessing satisfactory food with less effort, professionals from all walks of life make do with quenching their hunger in their neighbourhood in order to save the time they could have spent on cooking on their job productively. This group of people are identified by (Clarence, 2009; Arijit, Nagannada and Shilpi, 2010) as being affected by the

nature of their jobs such as bankers, artisans, civil servants, public servants, students who when resumed to their various duty posts from early morning do not have a quantum of time to prepare the food to eat.

Food canteen patronage seems to have taken a wider dimension in Nigeria as different strata of the society have made it unavoidable as they eat-in and take-away the products (food, drinks and snacks) on daily basis and, this is more prevalent in the urban and peri-urban places (Etzold, 2014). This attitude is believed to be unavoidable for the consumers of food from this source due to one reason or the other which might range from the type of household they come from and the nature of their job to the way individuals are brought up. However, the fact still remains that almost every second citizen of the megacity takes street food every day (Etzold, 2013).

Moreover, the quality of food eaten at the canteen is strongly analysed and described as being characterised by poor hygiene in terms of handling, ingredients in the preparation and the environment in which such foods are prepared and this is strongly attested to by the WHO (2003), Munde and Kuria (2005), and Oranusi, Oguoma and Agusi (2013) in their observational studies in which it was concluded that foods are sometimes held at improper temperatures and excessively handled by food vendors and sold at very dirty surroundings. Tamirat and Getye

(2014) were also of the opinion that some food canteens are prepared under unhygienic condition among food handlers which was specifically explained that they transmit pathogens passively from a contaminated source such as raw poultry to food like cooked meat that is to be eaten without further cooking and therefore advised that good hygiene, both personal and in handling practices is the basis for preventing the transmission of pathogens from food handling personnel to consumers. Tambekar, Jaiswal, Dhanorkar, Gulhane and Dudhane (2008) and Falola, Olatidoye, Balogun and Opeifa (2012) expressed that despite the economic and nutritional benefits of street foods, the consumption of roadside foods has been suggested to potentially increase the risk of food borne diseases, such as street foods are readily contaminated from different sources while he also added that street foods had often been associated with travellers' diarrhoea and other food borne diseases while El-Shenawy, Jordi and Jose (2011) reported the contamination of Street-vended ready-to-eat food sold in Egypt contaminated with *Listeria* species which include *Listeria monocytogenes* and *Listeria innocua* to be highly injurious to health. Nyenje, Odjadjare, Nicoline, Tanih, Ezekiel, and Roland (2012) also investigated the microbiological quality of ready to eat foods sold in Alice, South Africa and reported the contamination of these foods by *Listeria* spp., *Enterobacter*

spp., *Aeromonas hydrophila*, *Klebsiella oxytoca*, *Proteus mirabilis*, *Staphylococcus aureus* and *Pseudomonas luteola*.

More empirically, in Nigeria, study on the microbial safety of ready-to-eat foods; meat pie, beef sausage roll and egg roll, peeled orange, walnut and apple vended on highways; Onitsha-Owerri, South east, Nigeria, revealed the contamination of these foods by pathogens which include; *Salmonella* spp.(WHO, 2000 and Oranusi and Braide, 2012)

At present, there are more researches on the food quality and safety, such as the potential risk in the dining room (Guan, 2007 and Liang and Wu, 2012), to search for the factors to influence the canteen food quality and safety (Hua, Yan, and Cao, 2011), hence the establishment of the canteen food safety system (Guan, 2007). There are also many ways for the research on the food safety evaluation method, such as constructing food safety comprehensive evaluation indicator system with Analytic Hierarchy Process (Liu, 2007), evaluation of the safety of children's food packaging design using the fuzzy Analytic Hierarchy Process (Wang, 2011).

This study therefore seeks essentially to answer the following research questions: what are the factors that are responsible for canteen patronage among respondents? What problems are perceived to be associated with canteen patronage? What are the perceived benefits derived by households in patronizing food canteen? What are the major

causes of regularity of canteen patronage? These relevant research questions are hoped to be provided answers to and moreso improve on the existing literature on the issue under investigation.

### **Objective of the Study**

The main objective of this study was to investigate issues relating to food canteen patronage by households in Kajola Local Government Area of Oyo State. Specifically, the study determined:

- 1.Reasons for households' canteen patronage.
- 2.The regularity of canteen patronage by households.
- 3.The perceived benefits derived by households in patronizing food canteen.
- 4.The perceived problems associated with households' canteen patronage.

### **Methodology**

*Area and design of the study:* The study was conducted in Kajola Local Government Area (LGA) of Oyo State. The study was conducted using the cross-sectional survey design.

*Population for the study:* This consisted of 44,199 households who are indigenes and non-indigenes as at year 2010/2011 (NBS, 2013). This comprised of 101,544 males and 99,453 forming a total of 200,997(National Population Commission, 2006).

*Sample of the study:* The sample consisted of 140 respondents but 127 respondents were finally used for the analysis due to response bias and

inconsistency in some questionnaire which led to rejection of 13 questionnaires. The selection was obtained using two-stage sampling. The first stage was the random selection of seven (7) communities: Okeho, Isemi-Ile, Ijo, Ogan, Isale-Alubo, Bode, and Isia which are popularly known for operating canteen business in the area. Twenty (20) households were randomly selected from each of the communities. **Instrument for data collection:** A questionnaire was developed and used to collect data for the study. The questionnaire was validated by three experts. To determine the reliability, the instrument was pre-tested on 20

households which was not part of the sample in order to allow for objectivity and precision.

**Data collection and analysis techniques:** One hundred and forty copies of questionnaire were administered by the researcher and two enumerators to ensure high return rate. One hundred and twenty seven copies were properly filled and were used for data analysis. The data were analyzed using percentages.

### Findings of the study

The following findings were made:

#### *Reasons for Canteen Patronage*

**Table 1:** Distribution of Reasons for Canteen Patronage

Reason	Frequency(F)	Percentage (%)
Nature of Job	32	25.20
Insufficient Time	29	22.80
Household Size	32	25.20
Cooking Drudgery	12	9.40
Lack of Partner	14	11.00
Palatability	08	6.30
<b>Total</b>	<b>127</b>	<b>100.00</b>

Source: Field Survey, 2014.

Table 1 reveals that households patronized canteen foods for the reasons in the order of the nature of job 32(25.20%), household size 32(25.20%), insufficient time 29(22.8%), lack of partner 14(11%), cooking drudgery 12(9.4%) and palatability

8(6.3%). The results for the nature of job and household size were the same (tie) while this was closely followed by insufficient time with other reasons found to be less than 20%.

#### **Frequency of Visits to Canteen/Day**

**Table 2:** Distribution of Frequency of Visits to Canteen/Day

No. of Visits	Frequency(F)	Percentage (%)
Once	39	30.70
Twice	64	50.40
Thrice	20	15.70
>Thrice	04	3.10
<b>Total</b>	<b>127</b>	<b>100.00</b>

Source: Field Survey, 2014.

Table 4 shows the number of visits that respondents pay to canteen per day. The majority 64(50.40%) of respondents used to visit canteen twice in a day while least households 4(3.10%) eat as many times as possible

in canteens for one reason or the other. Patronage for canteen food once and thrice were in the respective of 39(30.70%) and 20(15.7%).

#### Perceived Benefits of Canteen Patronage

**Table 3:** Distribution of Perceived Benefits of Canteen Patronage

Benefit	Frequency(F)	Percentage (%)
Fast Access to Food	118	92.91
Palatability	59	46.46
Change of Appetite	102	80.31
Less Rigour	95	74.80
Time Saving	113	88.98
Access to Special Delicacy	91	71.65
<b>Average</b>	<b>96.3</b>	<b>75.85</b>

Source: Field Survey, 2014.

Table 3 presents the perceived benefits of canteen patronage by respondents. Fast access to food accounted for the highest 118(92.91%) and the lowest 59(46.46%) for palatability. Other benefits considered were time saving 113(88.98%), change of appetite

102(80.31%), less rigour 95(74.80%) and access to special delicacy 91(71.65%) while the mean rating stood at 75.85 percent.

#### Perceived Problems Associated with Canteen Patronage

**Table 4:** Distribution of Perceived Problems Associated with Canteen Patronage

Problem	Frequency(F)	Percentage (%)
Disease contraction	87	68.50
Poor Hygiene	96	75.59
Expensiveness	75	59.06
Food poisoning	81	63.79
Insufficient preparation	53	41.73
<b>Average</b>	<b>78.4</b>	<b>61.73</b>

Source: Field Survey, 2014.

Table 4 shows the perceived problems encountered by the patronisers of food canteens in the study area. The level of problem perceived by households was in the order of poor hygiene 96(75.59%), disease contraction 87(68.50%), food poisoning 81(63.79), expensiveness 75(59.06) and insufficient preparation 53(41.73). The households were worst affected by poor hygiene and least hit by insufficient food preparation. The mean problem rating value is 61.73%.

### Discussion

The findings of the study have shown that most of the households that patronized canteen food did this as a result of the nature of their jobs (25.2%), household size (25.2%) and insufficient time (22.80) among others. The nature of the job of some households in the area, most especially, the ones who are into salary job and artisans who spend most of their time attending to customers or clients. In an effort to achieve this, they may not have sufficient time to prepare food most especially the breakfast and lunch which are mostly needed at the peak of work. This finding is in line with Kubena (2000) and Alexy (2008) who expressed that employees with physically demanding jobs or with low job control ate at a worksite canteen more frequently. Also, household size was found to be a strong factor that encouraged households to resort to patronizing canteen food most especially when it

is large. Some other reasons agreed by households to have prompted their habit of eating away from home were cooking drudgery (9.40%), lack of marital partner (11%) and palatability (6.30%).

The finding also revealed further that, most of the households visited canteens on an average of two times (50.40%) in a day, thus, suggested that the periods of consuming canteen food by household was when daily income generating activities were at its peak, hence, paucity of time to prepare food. Some households patronize canteen once (30.70%) just to satisfy their appetite for the one meal they skipped due to being away from home while the finding of Ananti and Anjali(2011) agrees with this result that, some employees that do not have time to prepare food at all eat at worksite canteen more frequently.

The finding on the perceived benefits of canteen patronage showed that fast access to food (92.91%) was mostly agreed by households as the outstanding inherent advantage. Canteen food is believed to be fast in solving problems of hungry customers because it was accessible with ease and satisfy their appetite timely. The majority of the artisans and salary earners who had little or no time to prepare food when on the job are able to take their meals timely in both the quality and quantity terms. This finding associates with Meiselman (2008) who clarified that canteen affords the households of a wide opportunity to make choices in the



array of available canteen foods and also enhances the possibility of eating a healthy cooked meal during the work day. Also highlighted advantage was time saving (88.98%) which is believed to cut short the time of food availability as serves as alternative forgone as regards the time which would have been spent on food but allotted to additional service to duty as, this result agrees with International Labour Organization's recommendation that, it must be ensured that all employees have an opportunity to eat properly and timely during work hours to ensure efficient work-done. Other benefits indicated by households were change of appetite (80.31%), less rigour (74.80%), access to special delicacy (71.65%) and palatability (46.46%) which evidently showed to have a lot to do with preference for canteen food patronage among households under study.

Perceived problems associated with canteen patronage was indicated as most problem by households as poor hygiene (75.59%). Some of the food canteens operated in the area were poorly located, as some are very close to dumping site and some in an attempt to be quickly seen and accessed by potential customers are located by the roadside. Based on this, dirt like dust, smoke from moving vehicles, pathogen borne flies may contaminate the prepared foods by the canteen, hence, cause illnesses for consumers. Some canteens in the study area prepared food with water from uncovered and untreated wells

coupled with rotten ingredients and badly washed plates and cutlery which may cause health problems for patronisers. This finding agrees with the findings of Hanan and Aisha (2012) who asserted that food handling and poor personal hygiene are among the most important reasons that cause food-borne diseases, while Madueke, Awe, and Jonah (2014) explained further the resultant effect of poor hygiene by identifying food pathogen as of soil or intestinal origin and are mostly transmitted through poor food preparation, personal hygiene, or public sanitation practices. Other problems highlighted were disease contraction, food poisoning, expensiveness, and insufficient preparation which is common attributes of some of the food canteens in the locality.

### **Conclusion**

The following conclusions are made from the study. Households under study were found to patronise food canteen basically because of their nature of job which hindered them from cooking at home and the large household size which discouraged them from cooking for the entire household. Majority of households patronize canteen twice in a day for breakfast and lunch while they eat their supper at home. Problems encountered mostly were poor hygiene that was identified with the existing canteens in the locality. Benefits derivable were fast access to

food as it was always made available as and when needed.

### Recommendations

The following recommendations were made from the study:

- Sanitary officers should be made to perform their statutory duty on the regular basis by visiting the canteens. This will help to ensure that they improve in their hygiene both within and outside the canteen.
- Regular trainings, as a matter of fact, must be organized for food canteen operators from time to time. This will help to improve their cooking skills and ensure they make use of good ingredients and befitting cooking tools during food preparation.

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## **Health Promoting Dietary Practices among Diabetics Attending Tertiary Hospitals in Imo East Senatorial District of Imo State, Nigeria**

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### **Abstract**

The study examined the extent of adoption of health promoting dietary practices among diabetes attending tertiary hospitals in Imo State, Nigeria. Three research questions and three hypotheses guided the study. The descriptive research design was used. The population for the study comprised all the registered diabetics attending tertiary hospitals in Imo East senatorial district, Imo State. A sample of 391 diabetics was used for the study. Questionnaire was used for data collection. Means, standard deviation, t-test and Analysis of Variance were used for data analysis. Findings of the study show, among others, that most diabetics read food labels before buying and consuming them. There were significant differences in the health promoting dietary practices of various occupational and educational levels. The study recommends that families should adopt healthy dietary habits.

**Keywords:** Diabetes, Diabetics, Diet, Practices, Health

### **Introduction**

Diabetes mellitus or simply diabetes is a chronic and potentially disabling medical condition affecting millions of people worldwide. Diabetes is increasing rapidly in every part of the world, to the extent that it has now assumed epidemic proportions (Organization for Economic Co-operation and Development-OECD, 2011). Worldwide, an estimated 387 million adults are living with diabetes, and this number is projected to increase to 592 million by 2035

(International Diabetes Foundation – IDF, 2014). The increased cases of diabetes have resulted in millions of deaths. Diabetes resulted in 1.5 million deaths worldwide in 2012, making it the eighth leading cause of death (World Health Organisation – WHO, 2013). A recent report by WHO (2014) indicated that diabetes has tripled in the last two decades globally with the highest prevalence rates found in developing countries such as Nigeria. It is projected to rise to 552 million worldwide by the year 2030,

representing more than 54 per cent increase in less than 20 years. Therefore it is not surprising that it has been reported that diabetes is associated with high morbidity and mortality, with more than five million Nigerians affected (Diabetes Association of Nigeria-DAN, 2013).

Diabetes has emerged as a major and growing health problem in Nigeria. Diabetes is a chronic condition of impaired carbohydrate, protein, and fat metabolism that results from insufficient secretion of insulin (Ene, 2009). The condition develops over time. In this study, diabetes refers to chronic metabolic disorder characterised by chronic high blood sugar, caused by an absolute or relative insulin deficiency or defective action or both resulting in disorders of carbohydrates, proteins and fat metabolism. Diabetes is asymptomatic and can cause many complications if not managed well.

Among the various types of diabetes, type 2 diabetes is most prevalent as well as preventable. Vos and Flaxman (2012) estimated that type 2 diabetes make up about 90 per cent of the global burden of the disease. Operationally, type 2 diabetes is a chronic metabolic disease characterised by high blood sugar (glucose) levels that result from defects in insulin secretion, or action or both. Type 2 diabetes is associated with many debilitating complications. Some of the complications include blindness, kidney disease, heart disease, cardiovascular accident

(stroke), limb amputation and other significant health problems (IDF, 2006). With diabetes, life expectancy is significantly reduced. Among the hidden impacts of diabetes is the loss of productivity from disability, sickness, premature retirement, and premature death. Studies has associated type 2 diabetes with dementia, acute hyperglycaemic and hypoglycaemic events and vascular complications that may lead to vision loss, renal failure, foot ulcers and amputation, myocardial infarction, stroke, cardiovascular death, increased risk of cognitive decline, physical disability, falls and fractures, and other conditions associated with geriatric syndromes (Fasanmade, Odeniyi, and Ogbera, 2008; Christian and Stewart, 2010; and Li, Zhang, Wang, An, Gong, and Gregg, 2014). These complications, which are common and can profoundly affect quality of life, will challenge clinicians, health care systems, and public health organizations to identify effective ways of optimizing quality of life among diabetics

Evidences in literature (DAN, 2013 and American Diabetes Association, 2014) show that much progress has been made in recent years worldwide, but there is still room for improvement in tackling the growing number of diabetic cases in Nigeria, especially Imo East senatorial district. Successful control of type 2 diabetes will significantly contribute to the prevention of other chronic diseases such as coronary heart disease,



hypertension, osteoporosis and other cardiovascular diseases. This is due to their shared risk factors, underlying determinants and opportunities for intervention. To prevent or delay the onset of type 2 diabetes, Health promoting dietary practices must be recognised as a cornerstone in a global response to the disease burden.

Health promotion is the process of helping people to take control over their lives so that they can choose options that are health promoting rather than those that are health risking (WHO, 2005). Health promotion seeks the development of community and individual measures which can help people to develop lifestyles that can maintain and enhance the state of their well-being. The focus of health promotion is to prevent diseases, improve health, and enhance human potential through evidence-based interventions and research. Health promotion that aims at preventing people from developing diabetes encourages healthy lifestyle with dietary considerations being paramount. In this study, health promotion is the process of helping diabetics in Imo East senatorial district to take control over their diabetic condition through good dietary practices.

A healthy lifestyle is characterised by balanced diet, moderate exercise, avoidance of tobacco and alcohol. Studies had identified that good dietary practices can prevent or delay the onset of type 2 diabetes in people at high risk (Salas-Salvado, Martinez-

Gonzalez, Bullo and Ros, 2011; Katz, and Meller, 2014; Li, Qu, Zhang, Chattopadhyay, Gregg, Albright, Hopkins, and Pronk, 2015; and Pronk and Remington, 2015). These good dietary practices are termed health promoting dietary practices in line with managing diabetes and other chronic conditions (McGuire, 2011).

Health promoting dietary practices is a veritable way of diabetes prevention and treatment through dieting. Health promoting dietary practices contributes to the prevention of a variety of diseases as well as enhancing a positive feeling of wellness and vitality. Contextually, health promoting dietary practices is the efforts and processes employed by the diabetics at individual, organizational and community levels to enhance control of their health over diabetes through diet. Dietary practices encompass all the efforts of diabetics to eat right. Eating right for diabetics is tantamount to eating foods that have direct positive impact on their condition. Diabetics must be encouraged to eat more fibre by eating more whole-grain foods, fruits and vegetables (Hagobian and Phelan, 2013).

Addressing the health promoting dietary practices of diabetics attending tertiary hospitals in Imo East senatorial district is as important as reducing the mortality and morbidity of diabetes and its complications. The findings will expose the dietary practices, thereby providing ample opportunities for redress among the

diabetics, care-givers, health educators and people at risk.

### **Purpose of the Study**

The major purpose of this study was to find out the health promoting dietary practices of diabetics attending tertiary hospitals in Imo East senatorial district of Imo State. Specifically, the study determined the health promoting dietary practices of diabetics based on their:

1. age;
2. gender;
3. occupation; and
4. level of education.

### **Research Questions**

Four research questions guided the study.

What are the health promoting dietary practices of diabetics by:

1. gender?
2. age?
3. occupation?
4. level of education?

### **Hypotheses**

Four null hypotheses were tested at  $P \leq 0.05$  level of significance. There are no significant difference in the mean responses of the diabetics on health promoting dietary practices adopted ( $p < 0.05$ ) based on their: gender, age, occupation and educational level.

### **Methodology**

*Design of the study:* The study adopted the descriptive survey research design.

*Area of the study:* The study was conducted in Imo East Senatorial District. Imo East senatorial district has two tertiary health facilities where diabetics meet weekly to receive care in great numbers.

*Population for the Study:* The population for the study comprised of 17,076 registered diabetics attending tertiary hospitals in Imo East senatorial district, Imo State. Data were obtained from the Health Records Department, FMC, Owerri, 2014 and Health Records, Umuguma, 2014). Registered diabetics that attend FMC, Owerri from January 2013 till September 2014 were 12,865, while Specialist Hospital, Umuguma comprised of 4211 registered diabetics as at September, 2014. Though the population kept changing as people stop attending hospital, new people register, and some die as a result of the complications.

*Sample for the study:* The sample for the study consisted of 391 diabetics. The proportionate sampling technique was used to draw the sample from the hospitals based on their population. This ensured proper representation of the hospitals. Then, systematic random sampling was used to select the respondents using their daily attendance register. This technique was employed consecutively for four weeks to ensure that every diabetic has the chance of being sampled. Already sampled persons after the first week were invalidated when sampled the second time.

**Instrument for Data Collection:** Questionnaire was used for data collection. It consisted of two sections (A & B). Section A was on selected demographic variables for the study (gender, age, occupation and level of education), while section B consisted of questions on some health promoting dietary practices for diabetics. Five experts validated the instrument. Three experts came from Human Kinetics and Health Education, University of Nigeria Nsukka; two came from Federal Medical Centre. The experts' constructive criticisms, corrections and suggestions were used to modify and improve the instruments before it was used for the present study. A split half method using the Spearman's Brown correlation formulas was used to correlate the data generated. The

reliability index of .84 was obtained, and adjudged reliable for embarking on the study.

**Method of Data Collection:** Four hundred (400) copies of the questionnaire were administered by the researcher to the respondents by hand. Out of the 400 copies of the questionnaire that were administered, 387 were properly and duly filled out, and were used for data analysis. This yielded a return rate of 96.75 per cent.

**Method of Data Analysis:** Data were analyzed using means and standard deviations for the research questions. The t-test and Analysis of Variance (ANOVA) statistics were used to test the hypotheses at .05 level of significance.

### Findings of the Study

**Table 1:** Mean responses and t-test analysis of the differences in the mean health promoting dietary practices of male and female diabetics.

Item No.	Health Promoting Dietary Practices	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_g$	SD <sub>1</sub>	SD <sub>2</sub>	t-test	p	Remark	
									$\bar{x}_g$	t-test
	Most diabetics:									
1	Read food labels before you purchase and consume them.	3.7	3.8	3.8	1.4	1.2	-.497	.004	A	S
2	Give up your favourite foods such as banga soup, fufu, etc because of diabetes.	3.5	3.5	3.5	1.3	1.4	.055	.144	A	NS
3	Seek expert nutritional advice from nutritionists and dieticians.	3.8	3.6	3.7	1.2	1.4	1.393	.002	A	S
4	Abide by the prescribed diets and food menu.	3.9	3.7	3.8	1.1	1.3	1.621	.001	A	S
5	Eat fruits and vegetables.	3.8	3.8	3.8	1.2	1.1	-.460	.358	A	NS

6	Eat whole foods such as whole grain and bread.	3.3	3.4	3.3	1.2	1.2	-.838	.894	A	NS
7	Avoid fried foods.	3.0	2.4	2.7	1.4	1.4	3.477	.780	A	NS
8	Avoid ice creams, chocolates and pastas.	2.3	2.4	2.4	1.5	1.5	-.670	.314	D	NS
9	Avoid adding raw salt to meals after cooking.	2.1	2.1	2.1	1.2	1.3	-.480	.225	D	NS

$\bar{x}_1$  = mean for males;  $\bar{x}_2$  = mean for females;  $\bar{x}_g$  = grand mean;  $SD_1$  = standard deviation for males;  $SD_2$  = standard deviation for females; Number of males = 168; females = 219; Total = 387

Table 1 shows the grand mean health promoting dietary practices on all the items. All the items had means above the criterion mean of 2.5 with exception of items 8 and 9. This implies that the diabetics adopt all the health promoting dietary practices. The table also shows that significant differences exist in male and female diabetics adoption of health

promoting dietary practices with regard to most diabetics read food labels before buying and consuming them, seeking expert nutritional advice from professionals and abiding by the prescribed diets and food menu. While the male diabetics avoided fried foods ( $\bar{x} = 3.0$ ), female diabetics did not avoid it ( $\bar{x} = 2.4$ ).

**Table 2:** Analysis of Variance (ANOVA) of the mean responses of the Health Promoting Dietary Practices of Diabetics by Age

Item No.	Health Promoting Dietary Practices	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_3$	$\bar{x}_g$	F-cal	p	Remark	
								$\bar{x}_g$	F-cal
Most diabetics:									
1	Read food labels before you purchase and consume them.	3.9	3.9	3.4	3.8	5.820	.003	A	S
2	Give up your favourite foods such as banga soup, fufu, etc because of diabetes.	3.6	3.5	3.5	3.5	.233	.792	A	NS
3	Seek expert nutritional advice from nutritionists and dieticians.	3.5	3.9	3.7	3.7	1.863	.157	A	NS
4	Abide by the prescribed diets and food menu.	3.6	3.8	3.9	3.8	1.905	.150	A	NS
5	Eat fruits and vegetables.	3.9	3.6	3.9	3.8	3.370	.035	A	S
6	Eat whole foods such as whole grain and bread.	3.4	3.2	3.4	3.3	1.170	.312	A	NS
7	Avoid fried foods.	3.3	2.3	2.6	2.7	20.596	.000	A	S
8	Avoid ice creams, chocolates and pastas .	3.1	2.0	2.0	2.4	23.941	.000	D	S

9	Avoid adding raw salt to meals after cooking.	2.3	1.8	2.1	2.1	5.627	.004	D	S
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$\bar{x}_1$ = mean for diabetics aged 13-30 years;  $\bar{x}_2$ = mean for diabetics aged 31-49 years;  $\bar{x}_3$ = mean for diabetics aged 50 years and above;  $\bar{x}_g$  = grand mean; Number of diabetics aged 13-30 years = 127; diabetics aged 31-49 years = 141; diabetics aged  $\geq 50$  years = 119; Total = 387

Table 2 reveals that the diabetics agree with items 1-7 and disagreed with items 8 and 9 because their means are below the criterion mean (2.5). Table 2 also reveals that significant differences exist in diabetics of all age's adoption of health promoting dietary practices

in five out of nine statements. The table further shows that most diabetics aged 13 - 30 years avoid ice cream and chocolates ( $\bar{x} = 3.1$ ) while most diabetics of other ages did not (31 -49 years =  $\bar{x} = 2.0$ ;  $\geq 50$  years =  $\bar{x} = 2.0$ ).

**Table 3:** Analysis of Variance (ANOVA) of the mean responses of the Health Promoting Dietary Practices of Diabetics by Occupation.

Item No.	Health Promoting Dietary Practices	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_3$	$\bar{x}_4$	$\bar{x}_g$	F-cal	p	Remark	
									$\bar{x}_g$	F-cal
Most diabetics:										
1	Read food labels before you purchase and consume them.	3.4	3.8	3.8	4.1	3.8	5.869	.001	A	S
2	Give up your favourite foods such as banga soup, fufu, etc because of diabetes.	3.1	3.7	3.5	3.6	3.6	4.138	.007	A	S
3	Seek expert nutritional advice from nutritionists and dieticians.	3.4	3.7	3.7	3.7	3.6	4.991	.002	A	S
4	Abide by the prescribed diets and food menu.	3.5	3.6	3.8	3.7	3.7	11.63	.000	A	S
5	Eat fruits and vegetables.	3.6	3.9	3.8	3.7	3.8	6.740	.000	A	S
6	Eat whole foods such as whole grain and bread.	3.4	3.2	3.3	3.3	3.3	.417	.741	A	NS
7	Avoid fried foods.	2.8	2.4	2.7	2.8	2.7	1.580	.194	A	NS
8	Avoid ice creams, chocolates and pastas.	2.2	1.7	2.4	2.6	2.2	13.21	.000	D	S
9	Avoid adding raw salt to meals after cooking.	1.7	2.1	2.1	2.0	2.0	10.83	.000	D	S

$\bar{x}_1$ = mean for diabetic civil servants;  $\bar{x}_2$ = mean for diabetic business/traders;  $\bar{x}_3$  = mean for diabetic artisans;  $\bar{x}_4$ = mean for unemployed/retired diabetics;  $\bar{x}_g$  = grand mean;

Number of diabetic civil servants = 88; diabetic business/traders = 90; diabetic artisans = 60; unemployed/retired diabetics = 149; Total = 387

Table 3 reveals that the respondents agree with all the item statements except items 8 and 9. The table also shows that significant differences exist in health promoting dietary practices in seven out of the nine statements. The differences are with regard to most diabetics reading food labels, giving up their favourite foods, seeking expert nutritional advice from professionals, abiding by the prescribed diets, eating fruits and vegetables, avoiding ice cream, chocolates and pastas, and avoiding uncooked salts. While the civil servants ( $\bar{x} = 2.2$ ), traders/business people ( $\bar{x} = 1.7$ ) and artisans ( $\bar{x} = 2.4$ ) did not avoid ice creams, chocolate and pastas, majority of the unemployed/retirees did ( $\bar{x} = 2.6$ ).

**Table 4:** Analysis of Variance (ANOVA) of the mean responses of the Health Promoting Dietary Practices of Diabetics by Level of Education.

Item No.	Health Promoting Dietary Practices	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_3$	$\bar{x}_g$	F-cal	p	Remark	
								$\bar{x}_g$	F-cal
Most diabetics:									
1	Read food labels before you purchase and consume them.	3.7	3.6	4.0	3.8	.564	.569	A	NS
2	Give up your favourite foods such as banga soup, fufu, etc because of diabetes.	1.9	2.7	2.6	2.4	.816	.443	D	NS
3	Seek expert nutritional advice from nutritionists and dieticians.	2.3	3.6	3.7	3.2	5.519	.004	A	S
4	Abide by the prescribed diets and food menu.	3.5	3.2	3.9	3.5	10.579	.000	A	S
5	Eat fruits and vegetables.	3.3	3.1	3.8	3.4	2.175	.115	A	NS
6	Eat whole foods such as whole grain and bread.	3.5	3.6	3.8	3.6	4.699	.010	A	S
7	Avoid fried foods.	2.7	2.3	1.8	2.3	5.098	.007	D	S
8	Avoid ice creams, chocolates and pastas.	3.5	3.7	3.8	3.7	6.880	.001	A	S
9	Avoid adding raw salt to meals after cooking.	3.3	2.7	2.4	2.8	19.350	.000	A	S

$\bar{x}_1$ = mean for diabetics whose highest educational level was pre-secondary education;  $\bar{x}_2$ = mean for diabetics whose highest educational level was secondary education;  $\bar{x}_3$ = mean for diabetics whose highest educational level was post secondary education;  $\bar{x}_g$  = grand mean; Number of diabetics with pre-secondary education only = 36; diabetics with secondary education only = 105; diabetics with post secondary education = 246; Total = 387



Table 4 shows that significant differences exist among diabetics of various level of education with regards to health promoting dietary practices in six out of the nine statements. The differences are with statements that most diabetics; seek expert nutritional advice, abide by the prescribed diets and food menu, eat whole foods, avoid fried foods, avoid ice creams, chocolates and pastas, and avoid adding raw salt to meals after cooking. While the diabetics with secondary education ( $\bar{x} = 2.7$ ) and post-secondary education ( $\bar{x} = 2.6$ ) gives up their favourite dishes because of diabetes, the diabetics with only pre-secondary education did not ( $\bar{x} = 1.9$ ). Also, only those with only pre-secondary education ( $\bar{x} = 2.7$ ) agreed to avoiding fried foods, others did not (secondary education =  $\bar{x} = 2.3$ ; post-secondary education =  $\bar{x} = 1.8$ ).

### Discussion

Findings of this study from Table 1 show that most diabetics read food labels, abide by the prescribed diets and food menu, and eat fruits and vegetables. This explains the impact of various health talks delivered at tertiary hospitals for diabetics before giving care. Research studies have shown diabetics willingness to accept promotion programs to prevent type 2 diabetes (Li, *et al*, 2014; Balk, Earley, Raman, Avendano, Rittas and Remington, 2015). The finding of this study is therefore not surprising because it has been shown that eating right diet is an important part of

maintaining good health, and can help diabetics be their best (Katz and Meller, 2014). It is also of interest to note that the male diabetics did not adopt significantly more than the female diabetics ( $p = .780$ ) that most diabetics avoid fried foods. This is surprising because most female diabetics in the study did not avoid fried foods ( $\bar{x} = 2.4$ ) whereas most male diabetics did ( $\bar{x} = 3.0$ ). This is supported by Samuel, Emah and Kabiru (2013) who found that females in addition to eating much oil, fried foods and fatty meat, also take more snacks and fast foods daily than males.

The result in Table 2 also shows significant differences in the item 1 (read food labels before buying and consuming them), item 5 (eat fruits and vegetables) and item 8 (avoid ice creams, chocolates and pastas). Diabetics within the age group of 13 - 30 years agreed that most diabetics avoid ice creams and chocolates more ( $\bar{x} = 3.1$ ) than diabetics of age groups 31 -49 ( $\bar{x} = 2.0$ ) and  $\geq 50$  years ( $\bar{x} = 2.0$ ). This means that diabetics within the age group of 13 - 30 years adopted dietary practices more than others. This finding is unexpected and surprising because the researcher expected the younger diabetics to be carried away with their youthfulness in dietary practices thereby bingeing in food fads and sweet foods. Studies have associated consumption of sugar-sweetened creams and drinks in excess with an increased risk of diabetes (Palmer, Boggs, Krishnan, Hu, Singer and Rosenberg, 2008;

Malik, Popkin, Bray, Després and Hu, 2010). Salas-Salvado, Martinez-Gonzalez, Bullo and Rose (2011) submitted that commercial beverages containing simple sugars such as sweetened beverages (soft drinks, non diet cola and sodas), ice creams and natural or commercial fruit juices, which are oftentimes sugar enriched, are prototypes of high glycaemic index foods that are consumed in significant amount worldwide. Observational studies have consistently shown that their consumption relates to an increased risk of diabetes after adjustment for various confounders (Odegaard, Koh, Arakawa, Yu, and Pereira, 2010; and Carter, Gray, Troughton, Khunti, and Davies, 2010).

Regarding health promoting dietary practices among various occupations, Table 3 reveal that all the occupations eat whole foods. This finding is expected owing to the fact that diabetics receive health talks about it and supported by Nield, Summerbell, Hooper, Whittaker and Moore (2008). Naglaa and Mohamed (2010) in their study concluded that health education was an effective tool that implicated reduction in random blood sugar and haemoglobin Alc levels in diabetic patients. In consonance, Katz and Meller (2014) affirmed that a diet of minimally processed foods close to nature (whole foods) is decisively associated with health promotion and disease prevention and is consistent with the salient components of seemingly distinct dietary approaches.

Data in Table 4 show that most diabetics agreed to all the item statements except giving up favourite foods ( $\bar{x} = 2.4$ ) and avoiding fried foods ( $\bar{x} = 2.3$ ). Diabetics with pre-secondary education (non-educated) disagreed to giving up their favourite foods because of diabetes ( $\bar{x} = 1.9$ ). This is worrisome because high risk diabetics are expected to comply with all dietary regimens that are capable of reducing the risk. Large observational studies have provided conflicting results, showing both positive and negative associations of total carbohydrate intake with diabetes risk (Raina and Kenealy, 2008; Schellenberg, Dryden, Vandermeer, Ha and Korownyk, 2013). Instead, the quality of carbohydrates ingested may be of extreme importance in determining the ability to raise glucose levels, which depends to a great extent on its influence on gastrointestinal transit and the velocity of nutrient absorption, and the long-term risk of diabetes (Risérus, Willett, and Hu, 2009). Significant difference exists in the seeking expert nutritional advice of diabetics of various level of education. Most non-educated diabetics disagreed to seeking expert nutritional advice ( $\bar{x} = 2.3$ ).

### **Conclusion**

Diabetics attending tertiary hospitals in Imo East senatorial district adopt health promoting dietary practices in reading food labels before buying and consuming them, seeking expert nutritional advice from professionals,

abiding by the prescribed diets and food menu, eat fruits and vegetables and eating whole foods. Therefore it is concluded that diabetics attending tertiary hospitals in Imo-East senatorial district adopt health promoting dietary practices highly. There were significant differences in the health promoting dietary practices of; male and female diabetics, various age groups and various occupations on reading food labels before buying and consuming them.

### Recommendations

1. Radical health education should be mounted on the diabetics for them to see the need for avoidance of ice creams, chocolates, pastas and use of raw salt. This can be achieved through partnership and collaborations with agencies that have diet regulation and diabetes prevention as part of their mandate.
2. Health educators at the study centres should emphasize the avoidance of fried foods, especially among middle adults.
3. Extra attention should be directed towards diabetics with no formal education or only primary education to enable them key into the good dietary practices required of a diabetic.

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## **Awareness of Health Consequences of Extra Marital Relationship among Couples in Umuahia South LGA of Abia State, Nigeria**

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### **Abstract**

The study investigated the awareness of health consequences of extra-marital relationship among couples in Umuahia South Local Government Area, Abia State, Nigeria. Three objectives and three research questions guided the study. Descriptive survey design was adopted for the study. The population consisted of 55,428 couples in the 10 communities of Umuahia South LGA. A random sample of 500 respondents was drawn for the study. The instruments for data collection were questionnaire and focus group discussion guide. Data were analyzed using means for quantitative data while the qualitative data was used to substantiate the quantitative data. The findings revealed that married couples are aware of the physical, emotional and social health consequences of extra marital relationship. It was therefore, recommended among others, that marital counseling services that stresses the importance of marriage, marriage enrichment and marital commitment be made available to the couples.

**Key Words:** Extra-marital; Relationship, Couples; Health; Consequences

### **Introduction**

Interpersonal relationship is generally an important part of a human life. One of the ways to accomplish this is through marital relationship of which monogamy is only a part. Monogamy is only a part of human procreation strategy to foster relationship. The core relationship for most adults as a matter of fact, is that with one's spouse and children. However, extra marital relationship is wide spread. According to Fernando (2015), the fact

remains that millions of husbands and wives in the modern world do fall prey to this unfortunate serpent where families breakdown, and in most cases end up in divorce where innocent children are left to pick up emotional pieces left from their parents due to extra marital relationship.

Extra marital relationship also referred to as infidelity wasn't limited to intercourse and it contains any sexual activity that breaks the trust of sexual exclusivity within a marriage



such as sexual kissing and heavy petting (Zare, 2011). According to the author, it also includes activities where there is no physical contact at all, such as telephone or online sex due to this fact that the offender is investing sexuality outside of the marriage. Extra marital relationship refers to violation of marriage vows and which has to do with a person other than one's spouse. It is defined as a married person's sexual relationship occurring outside marriage. Three kinds of extra-marital relationship namely: emotional outbreak affair, emotional sexual affairs and sexual addiction affairs have been identified, (Schensal, 2006). Emotional outbreak affairs generally happens when the marriage is experiencing problems and during this time one partner turns towards a friend or companion of the opposite sex for emotional help and comfort. Emotional sexual affair is an affair whereby the unfaithful spouse does not only give the body but also the heart and there are slim chances of reunion. Sexual addiction affair is an affair in which the sexual addict uses sex over again to cause inner pain and emptiness. Ogwokhdemhe and Ishola (2013) identified a fourth kind of extra-marital relationship to include one night affair which is a kind of affair that mostly happen unintentionally and there may not be a sexual affair at all.

Today, however, the observable situation in the society including Umuahia South Local Government

Area of Abia State, Nigeria seems to indicate that the sacredness and sanctity of marriage and family with reference to exclusive sexual union between husband and wife has been dashed to the mud. Extra marital relationship seems to be the order of the day with no equanimity of conscience. Tafoya and Spitzberg (2007) observed that American couples indicate that 20 - 40 percent of heterosexual married men and 20 - 25 percent of heterosexual married women will have an extramarital affair during their lifetime. Glass (2003) observed that 46 percent of unfaithful wives and 62 percent of unfaithful husbands had affairs with someone at work. Arora (2015a) posited that due to the hectic modern day lifestyle, partners often fail to give in to the needs and demands of their mates, hence problems, sexual dissatisfaction, personal disliking and obvious loathing start brewing in their relationship. Then arises a point when the partner starts seeking pleasure or sexual gratification elsewhere and the only choice that strikes his mind is to step out of his present relationship. The reasons that may lead to extra marital relationship according to the author include sexual dissatisfaction, unhappy about physical appearance, sexual boredom, incapability to fulfill sex fantasies. Olayinka (2000) opined that if a wife deprives her husband sexually, he may retaliate by not having sex with her again. Thus the husband may resort to flirting among other women.

Having an extra marital relationship cannot do any good to ones marriage. The health consequences of extra marital relationships are always too bitter to tolerate. According to Arora (2015b), extra marital relationship weakens the love bond - the partner may feel guilty and this in turn weakens the love connection; creates sexual vacuum - the fact that you are sexually involved with a second man/woman often leads to creating a gap between you and your partner; makes the partner feels disowned; leads to sexually transmitted diseases (STDs). As a result, the sexual, mental and emotional health is put at stake for both couples. Collins (2007) asserted that sexual unfaithfulness/infidelity is the most common disruptive force in families, the most devastating, and the most universally accepted justification for divorce. The author further submitted that the offender may experience regret or guilt, the innocent partner feels betrayed, rejected, hurt and sometimes self-condemning because he or she was not able to satisfy the wayward mate. It becomes more difficult to believe that one's spouse can be trusted in the future and often, there is anger, threat, and lowered self-esteem. Separation and divorce may be an easy and fast way to deal with extra-marital relationship (Collins, 2007). This situation has disintegrated a good number of marital unions that were once very happy in Umuahia South local government area.

In whichever case, extramarital relationship is dangerous as it may cause some problems that the person involved did not bargain for. Fernando (2015) submitted that extra marital relationship can be the greatest tragedy and disgrace that a marriage can suffer from. The author further asserted that the individual's ego will become bruised and later, anger, hatred, jealousy, pain, humiliation and desperation begin to struggle for supremacy in the individual's inner being. Even though extramarital relationship has many consequences, it seems that the awareness of health consequences among couples in Umuahia South Local Government Area is yet to be ascertained or documented. This therefore necessitated the present study.

#### **Purpose of the Study**

The study focused on awareness of health consequences of extra-marital relationship among couples in Umuahia South Local Government Area. Specifically, the study determined couples' awareness of:

1. physical health consequences of extra-marital relationship.
2. emotional health consequences of extra-marital relationship.
3. social health consequences of extra-marital relationship.

#### **Research Questions**

The following research questions guided the study:

1. What are the physical health consequences of extra-marital

- relationship in Umuahia South Local Government Area?
2. What are the emotional health consequences of extra-marital relationship in Umuahia South Local Government Area?
  3. What are the social health consequences of extra-marital relationship in Umuahia South Local Government Area?

### **Methodology**

Descriptive survey design was used. Umuahia South LGA is one of the LGAs in Abia State with its headquarters in Apumiri. It has an area of 140km<sup>2</sup> with a population of 138,570 according to 2006 population census. It is made up of ten major communities, which include Olokoro, Old Umuahia, Amakama, Ubakala, Mgbarakuma, Umunwanwa, Nsirimo, Ohiya, Amachara, and Umuokpara. Igbo is their mother language. The primary occupation of the residents of the local government is majorly farming and trading. A small number of the residents are civil servants and students of various levels and grades. Bigamy is practiced by some in the area which is a factor to extra marital relationship. Experience in the area also shows that some couples have multiple partners. Consequent upon

these, this study became necessary in the area.

The population of the study consisted of all the married men and women from the ten communities that made up Umuahia South Local Government Area which is estimated at 55,428. The sample size comprised 500 respondents, who were randomly selected from five communities sampled (100 respondents from each community). Questionnaire and focus group discussion guide (FGDG) were the instruments for data collection. The questionnaire was assigned response options of Strongly Agreed-4, Agreed-3, Disagreed-2 and Strongly Disagreed-1. Data were presented using descriptive statistics of tables and means to answer the research questions. A criterion mean of 2.5 was used for decision making. The proceeds of the FGDG were thematically analyzed and used to substantiate the quantitative data.

### **Results**

The results and findings of this study were presented based on the research questions as follows:

Awareness of couples regarding the physical health consequences of extra-marital relationship in Umuahia South Local Government Area.

**Table 1:** Responses on the Physical Health Consequences of Extra-marital Relationship among Couples

S/N	Items	Mean $\bar{X}$ Responses
1.	Sexually transmitted disease like HIV/AIDS, syphilis, gonorrhoea etc	3.3
2.	Hypertension and stroke resulting from worry and anxiety	3.1
3.	Reproductive tract infection and damage to reproductive organs	3.1
4.	Premature death	3.2
5.	Unwanted pregnancy and frequent abortion	3.1

Table 1 shows the mean responses on physical health consequences of extra-marital relationship among married couple. The table shows that contraction of sexually transmitted diseases like HIV and AIDS, syphilis and gonorrhoea are physical consequences of extra-marital relationship with a mean score of 3.3; hypertension and stroke is also a physical consequence of extra-marital relationship with a mean score of 3.1. The table also shows that reproductive tract infections and damage to reproductive organs are also physical consequences of extra-marital relationship with a mean score of 3.1. Furthermore, the table shows that premature death is a physical consequence of extra-marital relationship with a means score of 3.2; and that unwanted pregnancy and frequent abortion are consequences of extra-marital relationship with a mean score of 3.1. The means of all the items

are greater than the criterion mean of 2.5. This implies that couples are aware that all the items are physical health consequences of extra-marital relationship.

The qualitative data on physical health consequences of extra marital relationship revealed that it could result to the contraction of STDs which may affect the quality of the sperm and ovum; dislike for condom use may lead to infections like HIV, STIs and hypertension; there could be food poisoning due to hatred. For alcoholics, it could lead to gastritis and damage to internal organs of the body. The qualitative finding further revealed that there may be wife abuse, battery, violence and combat that could result to physical injuries.

Awareness of couples regarding the emotional health consequences of extra-marital relationship in Umuahia South Local Government Area.

**Table 2:** Responses on Emotional Health Consequences of Extra-marital Relationship among Couples

S/N	Items	Mean $\bar{X}$	Responses
1.	Loss of trust and hatred	3.0	
2.	Over aggression	3.5	
3.	Conflict (violent syndrome) in the home	2.5	
4.	Sadness in the home	3.0	
5.	Damage to self-esteem	3.0	

Data in table 2 show the mean responses on emotional health consequences of extra marital relationship among couples. The table shows that loss of trust and hatred are emotional health consequences of extra marital relationship with a mean score of 3.0. The table further shows that over aggression is an emotional health consequence of extra marital relationship with a mean score of 3.5; conflict (violent syndrome) in the home is an emotional health consequence of extra marital relationship with a mean score of 2.5. More so, sadness in the home is an emotional consequence of extra marital relationship with a mean score of 3.0; and damage to self-esteem is an emotional health consequence of extra marital relationship with a mean score

of 3.0. The means of all the items are greater than and one equal to the criterion mean of 2.5. This implies that the couples are aware that all the items are emotional health consequences of extra marital relationship.

The qualitative data revealed that emotional consequences of extra marital affair could be aggression; transfer of aggression; anxiety; emotional imbalance; unrest for the members of the family; lack of concentration; loss of memory; nagging in the home; lack of joy; loss of appetite; emotional trauma and hurt; and jealousy.

Awareness of couple regarding the social health consequences of extra-marital relationship in Umuahia South Local Government Area.

**Table 3:** Responses on the Social Health Consequences of Extra-marital Relationship among Couples

S/N	Items	Mean $\bar{X}$	Responses
1.	Sexual assault	3.1	
2.	Divorce	3.1	
3.	Malice and suspicion	3.1	
4.	Marital separation	3.1	
5.	Isolation	3.1	
6.	Lack of peace	3.2	
7.	Feeling of guilt	2.9	

Data in table 3 show the mean responses on social health consequences of extra marital relationship among married couple. The table shows that sexual assault is a social health consequence of extra marital relationship with a mean score of 3.1; divorce is a social health consequence of extra marital relationship with a mean score of 3.1; malice and suspicion are social consequences of extra marital relationship with a mean score of 3.1. Furthermore, marital separation; and isolation are social health consequences of extra marital relationship each with a mean score of 3.1. The table also shows that lack of peace is a social health consequence of extra marital relationship with a mean score of 3.2; and that feeling of guilt is also a social health consequence of extra marital relationship with a mean score of 2.9. The means of all the items are greater than the criterion mean of 2.5. This implies that couples are aware that all the items are social health consequences of extra marital relationship.

The qualitative data revealed that partner who indulges in extra marital affair could withdraw from the society, family and religious obligations; no social bond with the spouse and children. If the woman is cheated, she may not give attention to the children and family members. The cheated partner may feel ashamed and humiliated in the neighbourhood. One of the children may cheat because of

the gene inherited. The qualitative findings further revealed that religiously, the cheat spouse may be excommunicated from the church. More so, there could be inability to concentrate at work leading to low productivity with its consequent loss of job.

### **Discussions**

The findings in table 1 show that majority of the respondents are aware of physical health consequences of extra-marital relationship. The table shows that contraction of STDs like HIV and AIDS, gonorrhoea, syphilis etc; hypertension and stroke; reproductive tract infections and damage of reproductive organs; premature death; and unwanted pregnancy and frequent abortion are physical health consequences of extra-marital relationship. This finding is not surprising and expected because it corresponds with the submission of Arora (2015b) which stated that extra marital relationship leads to STDs - indulging in sexual acts with more than one partner increases the chances of getting STIs especially if sex is practiced without any protection. Also, extra marital relationship can lead to unwanted pregnancy which may lead to frequent abortion with its consequent premature death when mismanaged. It deprives couples of their sound health therefore they should be enlightened more about the dangers and health disadvantages of marital infidelity. The findings also



agreed with that of Zare (2011) that the husband of an unfaithful wife may lose the entire reproductive capacity of his spouse for at least one childbearing cycle.

The common themes revealed in qualitative finding on physical consequences of extra marital affair were that it could result to the contraction of STDs which may affect the quality of the sperm and ovum. Dislike for condom use may lead to infections like HIV, STIs and hypertension. There could be food poisoning due to hatred for the cheating spouse. For alcoholics, it could lead to gastritis and damage to internal organs of the body. The qualitative finding further revealed that there may be wife abuse, battery, violence and combat that could result to physical injuries. These findings are in line with the findings of Malik, Nawaz, Mehmood, Riaz, Mushtaq, and Khan (2014) that 70% of the residents told that their husband did verbal, psychological and physical violence on them. Most of them suffered physical violence. And when her husband and family came to know about it, quarrels and disputes became routine of the day and the relationship became tenser.

The findings in table 2 showed that the couples are aware of emotional health consequences associated with extra-marital relationship. The findings in the table revealed that couples are aware that loss of trust and hatred; over aggression; conflict (violent syndrome) in the home;

depression and damage to self esteem are emotional health consequences of extra-marital relationship. This finding is expected and not surprising because it corroborates with the assertion of Fernando (2015) which revealed that extra-marital relationship can be the greatest tragedy and disgrace that a marriage can suffer from. The couple's ego will become bruised and later anger, hatred, jealousy, pain, humiliation and desperation begin to struggle for supremacy in the couple's inner being. The author also revealed that innocent children affected are left to pick up emotional pieces left from their parents. The findings are also similar to the submission of Collins (2007) who submitted that the offender may experience regret or guilt, the innocent partner feels betrayed, rejected, and hurt; there is anger, threat and lowered self-esteem. Extra marital affair wreaks havoc bringing in several negative effects, causing unbearable emotional pain and mental trauma for the faithful partner who never even thought of going through such a phase.

The common themes revealed in the qualitative finding was that emotional consequences of extra marital affair could be aggression; transfer of aggression; anxiety; unrest for the members of the family; lack of concentration; loss of memory; nagging in the home; lack of joy; loss of appetite; emotional trauma and hurt; and jealousy. The finding on emotional trauma and hurt is similar with the finding that women are more

hurt by an emotional affair (Sharpe, Walter & Goren, 2013; Thornton & Nagurney, 2011). The finding on jealousy agreed with the finding of Carpenter (2012) who revealed that men are more inclined to experience jealousy if their partner engaged in infidelity.

The findings in Table 3 show the awareness of social health consequences of extra-marital relationship among couples. The findings show that couples are aware of sexual assault; divorce; malice and suspicion; marital separation; isolation; lack of peace; and feeling of guilt as social health consequences of extra-marital relationship. This finding is expected and not surprising because it agrees with the finding of Shackelford, Buss and Bennet (2002) that it is more difficult for men to forgive a sexual infidelity than an emotional infidelity and they are more likely to end a current relationship following a partner's sexual infidelity. The finding also corresponds with the assertion of Collins (2007) who asserted that separation and divorce may be an easy and fast way to deal with extra marital relationship and that infidelity is a legitimate biblical reason for divorce. The finding is similar to the finding that extra dyadic (marital) involvement can cause trauma within the relationship and can often motivate couples to separate, divorce, or seek out counseling services (Hertlein, 2011; Fife, Weeks, & Gambescia, 2008). This finding further agrees with the submission of

Fernando (2015) who submitted that couples do fall prey to extra marital affairs where families breakdown, and in most cases end up in divorce.

Furthermore, the finding is in-line with the assertion of Arora (2015b) who asserted that extra marital relationship creates sexual vacuum - the fact that you are sexually involved with a second man/woman often leads to creating a gap between you and your partner; makes the partner feels disowned and isolated giving room for malice and suspicion. The finding on lack of peace also corresponds with Collins (2007) assertion that infidelity is the most common disruptive force and devastating in families.

The common themes revealed in qualitative finding were partner who indulges in extra marital affair could withdraw from the society, family and religious obligations. There is no social bond with the spouse and children. If the woman is cheated, she may not give attention to the children and family members. The cheated partner may feel ashamed and humiliated in the neighbourhood. One of the children may cheat because of the gene inherited. The qualitative findings further revealed that religiously, the cheat spouse may be excommunicated from the church. More so, there could be inability to concentrate at work leading to low productivity with its consequent loss of job. This is similar to the observation of Hertlein (2012) that couples who do not revisit

interpersonal rules (e.g. consequences of infidelity) may perceive their partner as functioning in detrimental ways, potentially creating tension between the partners and interfering with daily function.

### Conclusions

Based on the findings, it was concluded that married couples have the knowledge of the physical, emotional and social health consequences of extra marital relationship; and that this poisonous serpent has claimed the life of some couples leading to combat in the home, food poison, and also, death. Infidelity has rendered some spouses jobless because of low productivity at work due to physical, emotional and social health problem associated with it. Some children born of infidel spouses can turn out to be infidels.

### Recommendations

Based on the findings and conclusions, the following recommendations were made:

1. There is need for counseling service that stresses the importance of marriage, marriage enrichment and marital commitment be made available to the couples.
2. There should be a law that will sanction any couple convicted of infidelity.
3. Counseling services should be provided for children born by infidel spouses.

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## **Chemical Composition and Sensory Qualities of *Kunu-Zaki* Fortified with Beniseed (*Sesamum indicum*)**

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### **Abstract**

This study determined the chemical composition and sensory qualities of *Kunu-zaki* fortified with beniseed at various inclusion levels. The *Kunu-zaki* was processed from sorghum (*Sorghum bicolor*). Seven (7) samples were prepared with 5%, 10%, 15%, 20%, 25% and 30% beniseeds inclusion levels. Proximate composition as well as sensory qualities of the various samples of the *Kunu-zaki* was examined. Specifically, crude protein, crude fat, crude fibre, moisture, ash, dry matter and carbohydrate contents of the composition were analysed using the AOAC (1990) procedure. Analysis of Variance (ANOVA) was used to determine significant difference in the samples on variables of interest. Results revealed that *Kunu-zaki* fortified with beniseed at 20% inclusion level resulted in the highest crude protein (CP) level (2.21). In contrast, the fortified *Kunu-zaki* at 10% inclusion level contained the lowest CP but the highest carbohydrate level. The substitution effect of beniseeds was highest most in carbohydrate and crude protein properties of the samples. It is concluded that crude protein, crude fat, crude fibre and carbohydrate content of the samples are not cumulatively proportional to rate of beniseed inclusion and that *Kunu-zaki* with no beniseed inclusion was the most accepted by the consumers. It is recommended that effort to promote *Kunu-zaki* fortified with beniseeds should focus on nutritional composition as a unique selling point rather than the sensory qualities.

**Keywords:** Beniseed, *Kunu-zaki* Fortified, Sensory, Chemical Composition

## Introduction

The most important staple foods for many people in the developed and developing countries are produced from cereals (Adegbehingbe, 2014). In the developed countries, 70% of the cereal produced is used as animal feed while in the developing countries 68-98% of the cereal production is used for human consumption (FAO, 2009). These foods are often fermented. Fermented food describes food substance that has gone through lactofermentation as a way of preserving it. Lactofertation helps in preserving essential and beneficial food properties like b-vitamins, omega-3 fatty acid as well as various strains of probiotics. Fermented food, particularly the traditional ones, play prominent role in the food basket of millions of Africans (Adimpong, Nielsen, Sørensen, Derkx, & Jespersen, 2012). African indigenous fermented foods are reputed for their improved flavor, texture, shelf-life, rich in micronutrients and absence of antinutrients and toxic compounds (Dakwa, Sakyi-Dawson, Diako, Annan and Amoa-Awua, 2005; Obilie, Tano-Debrah, and Amoa-Awua, 2004).

Cereal based foods and beverages, including those made from beniseeds, sorghum and mullet enjoy widespread consumption worldwide and in Nigeria. These cereals are predominantly used for food in African countries including Nigeria. Sorghum (*Sorghum bicolor*) is an ancient crop grown almost everywhere in the world. Sorghum is

one of the five top cereal crops and ranks after maize (Ayo, Onuoha, Ikuomola, Esan, & Oigiangbe, 2010). It belongs to the grass family, native to Australia but has expanded to many places including Africa, Asia and the Mesoamerica climes. Millets, on the other hand, refer to a group of diverse small-seeded cereal-bearing grasses grown throughout the world particularly for food. Apart from *Kunu-zaki*, other fermented foods produced from sorghum include 'buchera', 'koko' and 'ogi-baba' (Adelekan, Alamu, Arisa, Adebayo and Dosa, 2013; Muyanja, Narvhus, Treimo, and Langsrud, 2002). *Kunu-zaki* is produced from any of sorghum, millet and beniseeds.

*Kunu-zaki* is a sweetened cereal based non-alcoholic beverage that is widely consumed in Nigeria especially in Northern part of the country (Amusa and Odunbaku, 2009; Gaffa, Jideani and Nkama, 2002). According to Gaffa, Jideani and Nkama (2002), *Kunu-zaki* is essentially produced from sorghum but sometimes, it can also be produced from maize. It is a highly nutritious non-alcoholic drink that is produced from various cereal grains such as millet. Although *Kunu-zaki* is traditionally a Northern Nigeria beverage, it has found great appeal in other parts of the country. It is consumed among different classes of personality either as a food supplement or thirst quencher. The availability of *Kunu-zaki* as an alternative for carbonated drinks products which have little to



nutritional benefits that is cheaply available for every class of individual. *Kunu-zaki* is one of the complex mixtures which contain macromolecules such as protein, carbohydrates and lipids (Gaffa, Jideani & Nkama, 2002). During the preparation of *Kunu-zaki*, the ingredients needed are ginger (*zingiber officinalis*), alligator pepper (*afromonium melegueta*), red pepper (*capsicum species*), black pepper (*piper guineense*) and kakandoru or eru. All these ingredients perform one function or the other in the course of the preparation. The most abundant constituents of *Kunu-zaki* is water and it acts as the medium in which all other constituents are dissolved and contain only traces amount of inorganic substances (Otaru, Ameh, Okafor, Odigure, & Abdulkareem, 2013)

Ordinarily, *Kunu-zaki* is reported to have low protein content with implications on its general acceptability (Ayo *et al.*, 2013). To fortify *Kunu-zaki*, spices are often added to improve the taste. During the preparation of *Kunu-zaki*, the ingredients often added include ginger (*zingiber officinales*), Alligator pepper (*Afromonium melegueta*), red pepper (*Capsicum species*), black pepper (*Piper guinense*) and kakandoru or Eru (Otaru *et al.*, 2013). The most abundant constituent of *Kunu-zaki* is water and it acts as the medium in which all other constituents are dissolved and contain only traces amount of inorganic substances. The

nutritive value of *Kunu-zaki* is highly due to the presence of protein, carbohydrates and some vitamin especially the vitamin B (Adebayo & Ojo, 2012).

Although, *Kunu-zaki* is predominantly consumed in the North, the product is gaining increasing acceptance in other parts of the country. It is, however, thought that the present traditional production process is outdated, inefficient, time consuming and with product quality varying between batches (Ayo *et al.*, 2010). In this present study, attempts have been made to improve on sensory quality of the *Kunu-zaki*, by adding beniseeds. It is hoped that maintaining nutrients and improving sensory quality of the final product will lead to improvement in nutritive quality and acceptability of the product (Ayo *et al.*, 2010).

#### **Purpose of the Study**

The purpose of the study was to determine the nutritional composition and sensory evaluation of *Kunu-zaki* fortified with beniseed. Specifically, the study

- 1) produced of *Kunu-zaki* made from combination of millet and sorghum.
- 2) fortified the prepared *Kunu-zaki* with beniseed.
- 3) determined chemical composition of *Kunu-zaki* not fortified with beniseed
- 4) determined the chemical composition of *Kunu-zaki* fortified with beniseed.

- 5) evaluated the sensory quality and consumer acceptability of the *Kunu-zaki* fortified with beniseed.

### Materials and Methods

**Collection of raw materials:** Sorghum grains (*sorghum vulgare*), maize (*Zea mays*), malted grain of millet were obtained from Ayetoro market in Ogun State, Nigeria. Ginger (*Zingiber officinate*), Cloves (*Eugenia coryphée*), Red pepper (*Capsicum annum*) were used. The chemical preservatives such as sodium benzoate, and sodium metabisulphite (BDH) were used.

**Table 1: Ingredients for ordinary and fortified *Kunu-zaki***

Ordinary <i>Kunu-zaki</i>	
Ingredient	Quantity
Sorghum	700g
Ginger	5g
Cloves	3g
Alligator pepper	2g
Black pepper	2g
<i>Kakandora/eru</i>	3g
Water	500ml

### Methods

#### *Kunu-zaki* without beniseed

**Production of *Kunu-zaki* :** *Kunu-zaki* was produced as described by Akoma *et al.* (2002) using sorghum.

#### Procedures in preparing *Kunu-zaki*

- i. Dirt was removed from the ingredients and washed in clean water
- ii. 700g of sorghum was steeped in 1000ml tap water (1:2.w/v) for 24hours at ambient temperature (30-32°C).

- iii. The water was then decanted off and the sorghum washed with more tap water before wet-milling with the spices

- iv. The sorghum (grain) was steeped and spices added (mixture of cloves, ginger and black pepper).

- v. The paste was divided into seven portions with each having 100g.

- vi. One of the portions was reserved without addition of beniseeds while the other 6 portions had beniseeds at 5%, 10%, 15%, 20%, 25% and 30% inclusion levels. The quantity of the pure *Kunu-zaki* was also reduced at the same rate.

- vii. 75% of the samples were cooked using two volume of boiling water and allowed to cool to 45°C. Ground malted millet or sorghum mixed separately with the remaining uncooked 25% paste (1:4. w/w) before being added to the cooked paste (i.e. gelatinized starch at 45°C).

- viii. This mixture was then be stirred vigorously for about 5 minutes and then allowed to ferment for 8-10hours to produce the *Kunu-zaki*. The fermented *Kunu-zaki* was sieved (mesh size approx 350m) and served without the addition of sweetening agent.

- ix. The prepared *Kunu-zaki* was divided into 7 equal portions

#### Preparation of Beniseeds

- i. Dirt was removed from the beniseeds and washed in clean water

- ii. 200g of beniseed was steeped in 100ml tap water for 24hours at ambient temperature (30-32°C).
- iii. The water was decanted off and the beniseed washed with more tap water before it was wet-milled
- iv. The wet-milled beniseeds were sieved and put aside

#### Preparation of Samples of the *Kunu-zaki*

Seven samples of *Kunu-zaki* were produced. Sample 1 contains 100% of *Kunu-zaki* while the other samples contained *Kunu-zaki* fortified with beniseeds at various inclusion level in percentages as follows:

Sample	Description
1	100% <i>Kunu-zaki</i>
2	95% <i>Kunu-zaki</i> + 5% Beniseed
3	90% <i>Kunu-zaki</i> +10% Beniseed
4	85% <i>Kunu-zaki</i> + 15% Beniseed
5	80% <i>Kunu-zaki</i> + 20% Beniseed
6	75% <i>Kunu-zaki</i> + 25% Beniseed
7	70% <i>Kunu-zaki</i> + 30% Beniseed

In preparing the samples, the prepared beniseeds were added to the seven portions of the prepared *Kunu-zaki* at 0%, 5%, 10%, 15%, 20%, 25% and 30% levels. The beniseeds was substituted for the *Kunu-zaki* at ratio 1:3.5.

#### Chemical Analysis

##### *Chemical tested*

1. Crude protein
2. Crude fat
3. Crude fibre
4. Ash
5. Moisture
6. Dry matter

The pH of the various samples was measured with pH meter (Model 7020 Electronic Ltd. England) after standardization with pH 4 and 7 buffers (BDH. England). Titratable acidity (TA%. Lactic acid) determined by titration of 10ml *Kunu-zaki* against 0.1 NaOH to phenolphthalein end point. Crude protein and crude fat of samples (10ml) determined with standard micro-kjeldahl and soxhlet procedures, respectively (AOAC, 1990): (Pearson, 1970).

Total ash was obtained by igniting 10ml sample at 600°C using muffle furnace (Pearson, 1976). Mineral content of the samples was determined with an automated atomic absorption spectrophotometer (Perkin-Elmer, Model 2380). The samples and standard solutions were prepared according to the procedures of the AOAC (1990).

#### Sensory Analysis

The chemical preserved *Kunu-zaki* samples fortified with beniseed and the one without beniseed were evaluated for taste, colour, flavor, general consistency and acceptability/preference on a 5-point scale (5,4,3,2,1), 5 as Excellent and 1 as Poor by panel of 11 judges made of lectures technologists, and non-academicians who were randomly selected from College of Agricultural Sciences, Olabisi Onabanjo University, Yewa Campus, Ayetoro, Ogun State, Nigeria.

### Statistical Analysis

Mean differences in sensory quality were computed using analysis of variance (ANOVA) and the difference of mean determined using Duncan's Multiple Range test (Duncan, 1955).

### Results

**Proximate Composition:** Table 1 and Table 2 present the chemical composition and changes that occurred in them, respectively, at different beniseed inclusion level. It is evident in Table 1 that the substitution effect of beniseed inclusion resulted in

general increase in the crude protein, fat, fibre and ash content of the fortified *Kunu-zaki* indicating that the substitution effects of beniseed inclusion in the fortified *Kunu-zaki* were positive in terms of CP, fat, fibre and ash contents.

### Proximate Composition of *Kunu-zaki* fortified with Beniseed.

The proximate composition of the *Kunu-zaki* fortified with beniseed at various inclusion levels is presented in Table 1.

**Table1:** Proximate Composition of *Kunu-zaki* Fortified with Beniseed

SAMPLE	% CP	% FAT	% FIBRE	% Ash	% MC	% DM	%CHO
100% <i>Kunu-zaki</i>	3.48	1.30	1.01	1.39	68.79	31.21	24.90
95% <i>Kunu-zaki</i> + 5% Beniseed	5.62	1.48	0.96	1.45	66.81	33.19	24.64
90% <i>Kunu-zaki</i> + 10% Beniseed	6.24	1.54	1.13	1.53	62.67	37.33	28.02
85% <i>Kunu-zaki</i> + 15% Beniseed	8.13	1.69	1.18	1.67	60.38	39.62	28.13
80% <i>Kunu-zaki</i> + 20% Beniseed	10.34	1.76	1.23	1.75	58.97	41.03	27.18
75% <i>Kunu-zaki</i> + 25% Beniseed	11.56	1.88	1.29	1.84	56.76	43.24	27.96
70% <i>Kunu-zaki</i> + 30% Beniseed	13.15	1.97	1.34	1.96	53.28	46.72	29.64

CP= Crude protein; MC= Moisture Content; DM= Dry Matter; and CHO= Carbohydrate

Table 2 shows that CP was highest at 20% inclusion level. At this level the carbohydrate content was at the lowest level (-0.95).

### Percentage Change in Chemical Composition of the Samples

Table 2 presents the percentage change in chemical composition of the five samples of *Kunu-zaki* fortified at various inclusion levels.

**Table 2:** Percentage change in chemical composition of the fortified *Kunu-zaki* at various beniseed inclusion level

S/N	Sample	%CP	%FAT	%FIBRE	%Ash	%MC	%DM	%CHO
1	100% <i>Kunu-zaki</i>	-	-	-	-	-	-	-
2	95% <i>Kunu-zaki</i> + 5% Beniseed	2.14	0.16	-0.05	0.06	-1.98	1.98	-0.26
3	90% <i>Kunu-zaki</i> +10% Beniseed	0.62	0.06	0.17	0.08	-4.14	4.14	3.38
4	85% <i>Kunu-zaki</i> + 15% Beniseed	1.89	0.15	0.05	0.14	-2.29	2.29	0.11
5	80% <i>Kunu-zaki</i> + 20% Beniseed	2.21	0.07	0.05	0.08	-1.41	1.41	-0.95
6	75% <i>Kunu-zaki</i> + 25% Beniseed	1.22	0.12	0.06	0.09	-2.21	2.21	0.78
7	70% <i>Kunu-zaki</i> + 30% Beniseed	1.59	0.09	0.05	0.12	-3.48	3.48	1.68

CP= Crude protein; Mc= Moisture Content; DM= Dry Matter; and CHO= Carbohydrate

### Sensory Quality

Table 3 presents the sensory qualities of *Kunu-zaki* fortified with beniseeds at various inclusions levels.

**Table 3:** Sensory Qualities of *Kunu-zaki* samples

Samples	Colour	Taste	Aroma	Overall acceptability
100% <i>Kunu-zaki</i>	4.8	4.8b	4.3a	4.8b
90% <i>Kunu-zaki</i> + 10% Beniseed	3.2	3.1b	3.3b	3.2n
80% <i>Kunu-zaki</i> + 20% Beniseed	2.9	2.3c	2.3c	2.7c
70% <i>Kunu-zaki</i> + 30% Beniseed	3.2	2.9c	2.6c	2.9c
S.E	10.04	+0.01	+0.02	+0.03

Means with different superscripts across the columns are significantly different ( $p < 0.05$ )

Table 3 shows sensory qualities of *Kunu-zaki* without the inclusion of beniseed recorded the highest acceptability in terms of colour (4.8), taste (4.8), aroma (4.3) and overall acceptability (4.8). The least acceptability level occurred at 20% fortification level. These findings are in contrast with the proximate composition where *Kunu-zaki* at 20%

inclusion level recorded highest gain in CP. It is also evident in Table 3 that significant ( $p < 0.05$ ) difference exist between 0% inclusion level and 20% inclusion level. This implies that difference in acceptability as enumerated above is not due to chance.

### Discussion of Results

A crude protein (CP) content 3.48 was obtained in 100% *Kunu-zaki*, while higher value was obtained in 70% *Kunu-zaki* + 30% Beniseed (13.15%), followed by 75% *Kunu-zaki* + 25% Beniseed, (11.56%) and 80% *Kunu-zaki* + 20% Beniseed, (10.34%). However, 5.62%, 6.24%, and 8.13% crude protein content were obtained from 95% *Kunu-zaki* + 5% Beniseed, 90% *Kunu-zaki* + 10% Beniseed, and 85% *Kunu-zaki* + 15% Beniseed respectively.

Grain legumes are important as sources of protein, energy and other nutrients. They contain as high as 20 to 50% protein, which in general runs well above twice the level in cereal grains and significantly more than the levels in conventional root crops (Ustimenko, 1983). The protein is relatively high in lysine content, a factor of much nutritional importance. Legumes have lower level of this amino acid. The levels of the sulphur-containing amino acids (methionine and cystine) in cereals are adequate to compensate for the low values in legumes to produce a protein mixture of enhanced biological values. Grain legumes, with the exception of the oil seeds have very low oil content (less than 3%). They also contain more than 50% carbohydrate fraction which is essential in the form of fibre.

Lower and similar values of fat ranging between 1.37% to 1.88% were obtained across the raw *Kunu-zaki* and those fortified at different percentage content. The highest percentage was however recorded for *Kunu-zaki*

fortified at 70% *Kunu-zaki* + beniseed (1.97%). The increase in the fat content in the *Kunu-zaki* samples can be attributed to the fact that beniseed are oil seeds which is one major advantage over animal-based fats. Apata (1990) reported that beniseed contain high levels of oleic and linoleic acids. The implication of this is the possibility of preventing disease associated with intake of saturated fatty acid and cholesterol in humans.

Generally, plant oils are of more nutritionally benefited than fat oil from animal source like egg, meat and milk. This is because food containing more of unsaturated fatty acid and less of saturated fatty acids and cholesterol, helps to prevent deposition of fatty materials in the walls of the coronary artery. This helps to prevent incidence of cardiovascular disease like arterosclerosis (Potter and Hotchkiss, 1996) which involves the deposition of fat on the walls of the artheries in the human blood circulatory system that invariably reduce the flow of blood to the heart.

Lower and similar values of ash content ranging between 1.39% to 1.84% were obtained across the raw *Kunu-zaki* and those fortified at different percentages content. The highest percentage were however recorded for *Kunu-zaki* fortified at 70% *Kunu-zaki* + 30% beniseed (1.96%). Ash content has being reported to be a measure of mineral constituents (Apata, 1990). Beniseeds are excellent



source of calcium, magnesium, phosphorus and iron.

The moisture content obtained across the raw and fortified *Kunu-zaki* ranged from 53.28% to 68.79%. The highest moisture content was obtained in 70% *Kunu-zaki* + 30% beniseed (53.28%). Shelf life has being reported to decrease with higher amount of moisture content (Norman and Joseph, 1995). Likewise, food microbes multiplies when moisture is high in food samples.

From the table above, lower percentage in dry matter were obtained from raw *Kunu-zaki* (31.21%) and higher percentage in dry matter were obtained from *Kunu-zaki* fortified at 70% *Kunu-zaki* + 30% beniseed (46.72%).

Similar carbohydrate content was obtained from raw *Kunu-zaki* (24.97%) and 95% *Kunu-zaki* + 5% beniseed (24.64%). This same is true for carbohydrates obtained from 90% *Kunu-zaki* + 10% beniseed (28.02%) and 85% *Kunu-zaki* + 15% Beniseed (28.13%). Higher percentages of carbohydrates is however, obtained from *Kunu-zaki* fortified at 70% *Kunu-zaki* + 30% Beniseed (46.72%).

The study findings reveal that *Kunu-zaki* fortified with beniseed at 20% inclusion level resulted in the highest crude protein level (2.21). In other words, a 5% increase in beniseed inclusion from 15% level resulted in the highest increase in protein level. In contrast, however, the fortified *Kunu-zaki* at 10% inclusion level contained the lowest CP but the highest

carbohydrate level. Besides, the lowest changes in CP level occurred at 10% beniseed inclusion level implying that crude protein gain is not cumulatively proportional to rate of beniseed inclusion.

It is also evident in the table 2 that 20% beniseed inclusion recorded lowest cumulative level of carbohydrate content (10.95%). The dry matter (1.41) also followed the same trend. From the foregoing, it appears that the most significant substitution rate occurred between protein and carbohydrate content.

In terms of the sensory qualities of the samples, the highest score for colour was obtained in *Kunu-zaki* sample containing 100% sorghum/millet (4.81). Followed closely to this were *Kunu-zaki* samples containing 10% beniseed (3.2) and 30% beniseed (3.2) respectively. The *Kunu-zaki* samples having the lowest values in colour was the one containing a mixture of 90% *Kunu-zaki* + 10% Beniseed (3.1). These values were however not significantly ( $p > 0.05$ ) different.

The highest significant ( $p < 0.05$ ) score of taste was obtained in 100% *Kunu-zaki* (4.8) followed by the *Kunu-zaki* samples containing 90% *Kunu-zaki* + 10% Beniseed (3.1), 70% *Kunu-zaki* + 30% Beniseed (2.9) and 80% *Kunu-zaki* + 20% Beniseed (2.3) respectively.

The highest significant ( $p < 0.05$ ) score of aroma was obtained in *Kunu-zaki* samples containing 100% sorghum/millet (4.3), while the lowest

score of aroma was obtained in *Kunu-zaki* containing blends of 80% *Kunu-zaki* + 20% Beniseed (2.3).

*Kunu-zaki* sample containing 100% sorghum/millet was highly accepted ( $p < 0.05$ ) among other samples (4.8), next to this was *Kunu-zaki* sample containing 90% *Kunu-zaki* + 10 beniseed (3.2). at 30% inclusion level of beniseed, the acceptability scores reduced to 2.7. The fact that the *Kunu-zaki* with no beniseed inclusion had the highest acceptance level suggests that *Kunu-zaki* fortified with beniseeds might be less acceptable to the consumers. This might not be unconnected to familiarity factor. That is, the taste and other sensory parameters of *Kunu-zaki* fortified with beniseeds might still be strange to the consumers. To promote *Kunu-zaki* fortified with beniseeds, the nutritional properties may therefore be the unique selling point (USP) rather than sensory qualities.

### Conclusions

In this study, results obtained showed that protein content of *Kunu-zaki* can be increased by fortification with beniseed which are leguminous seed. Legumes are important sources of protein; they contain 20 to 50% of protein, which in general runs well above twice the level found in cereal grains. Also, the nutritional advantage from the present of protein in the incorporated beniseed believed to go a long way for the treatment of malnutrition related diseases e.g. kwashiorkor, e.t.c. Another conclusion

from the study is that rate of substitution of beniseed for *Kunu-zaki* was most pronounced on protein and carbohydrate rate.

### Recommendations

Based on the study findings and conclusions, it is recommended that:

- *Kunu-zaki* should be prepared without beniseeds until people are convinced about the nutritional benefits (e.g. improved protein content) because the study revealed that *Kunu-zaki* without beniseed inclusion resulted in higher degree of likeness by the consumers
- Level of inclusion of beniseed in *Kunu-zaki* to fortify it should be at 20% level if protein maximization is the goal but 10% inclusion level should be maintained if optimum carbohydrate content is the goal all thing being equal.
- For health benefit rather than sensory experience, *Kunu-* should be fortified with beniseeds.

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## **Strategies for Enhancing Family Farming in Nigeria**

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### **Abstract**

This paper focused on strategies for enhancing family farming in Nigeria. It reviewed the concept and importance of family farming. It highlighted the aims and objectives of International Year of Family Farming (IFYF) and examined family farming in relation to its relevance and practices in Nigeria. It further discussed the obstacles to family farming and ways that can make family farming in Nigeria. It was concluded that many strategies have not been put in place to enhance family farming in Nigeria. It was recommended, among others, that the Ministry of Agriculture and Natural Resources, at all levels, should periodically organise training programmes on family farming to strengthen family farmers.

**Keywords:** Family, Farming, Enhancement, Obstacles, Strategies.

### **Introduction**

Family farming is a way of forestry and agricultural production, as well as fishing, grazing and agriculture, managing conjunctly by a family and it largely depends on the family labour force - both men and women (Food and Agriculture Organization (FAO), 2014). The family and exploration are linked; they co-evolved and combined economic, environmental, reproductive, social and cultural functions. Family farming often involves to artisan fishing people, shepherds, harvesters, landless-day-

labourers and indigenes communities (Bicottsaga, 2014). Belliere, Bonnal, Bosc, Losch, Marzin and Sourisseau (2015) noted that FAO also gives substantial and statistical definitions of family farming. Substantially, family farming is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly related to family capital and labour. Statically, family faming can also be seen as agricultural holding which is managed and

operated by a household and where farm labour is largely supplied by that household, both women and men (Belliere *et al*, 2015). The concept of family farming covers various elements, from a sociological perspective, it is associated with family values, such as solidarity, continuity and commitment; in economic term, family farming is identified with specific entrepreneurial skills, business ownership and management, choice and risk behavior, resilience and individual achievement. Family farming is often more than a professional occupation because it reflects a lifestyle based on beliefs and traditions about living and work (European Union Commission (EUC), 2016).

The term “family farming” is vast and may include almost any agricultural model or method whose direct beneficiaries are not corporations or investors. It however includes both large-scale producers (with farms covering thousands of hectares) as well as small-scale producers who are entirely dependent on the private sector, through contract farming or other forms of economic exploitation, promoted through concepts such as “the value chain” ([www.spore.cta.int](http://www.spore.cta.int)). This is why Compesina (2004) defines family farming in terms of peasant based ecological farming as opposed to the industrial, toxic farming of agricultural businesses which expel peasant and small farm family.

Chayamore (1990) in a perspective opened up as a rural economics stating that family farming refers to forms of organization of agricultural production characterized by (i) organic links between the family and the production unit; and (ii) the mobilization of family labour excluding permanent employees.

In addition, Chibonga (2014) expressed family farming as collective efforts by families working together on a farm in order to sustain themselves through food production, food consumption and income. Families are guided by family values such as trust, commitment, love persistence and determination working together in order to fend for themselves. Farming families often have no other major sources of incomes or foods apart from farming (Chibonga, 2014).

This paper highlights the concept and importance of family farming. It discusses the United Nations Family Day and recommendations from International Year of Family Farming (IYFF). The paper reviews the extent of family farming’s functions in relation to its awareness, practices and relevance in Nigeria. It also states the obstacles to family farming and ways of enhancing family farming in Nigeria are presented.

### **Importance of family farming**

On why family farming is important, FAO (2014) stated that family farming , in all its diversity, is the predominant form of agriculture worldwide; local

and global food security depends on it; it generates food and income for hundred of million people, including poor and marginalized. Specifically, the importance of family farming are discussed as follows:

**Self-employment:** Family farming is the area of self-employment and of progress for the family units. It is through farm families' effort, dedication, and passion and hand work that the farm is developed further and the livelihood of the family is improved. The farm meets the many needs of the family whilst the family provides the possibilities, the mean and the farming for the farm. Thus, nexus between the family and the farm is at the core of many decisions about the development of the farm. Each particular farm has its own specific balances, for instance, between the mouth to be fed and the arms to do the work. These balance the family and farm together and make each family farm into a unique constellation (van de Ploeg, 2012).

**History and memories:** Family farming is part of a flow that links the past, present and future. This means that every farm has a history, it is full of memories. It also means that parents are working for their children; give the next generation a solid starting point within or outside agriculture. Since the farm is the outcome of the work and dedication of this and previous generations, there often is pride and anger when others try to damage or even destroy the

jointly constructed farm (McGorlick, 2011).

**Perpetuation of culture:** World of family farming is considered 'archaic, anarchic, and attractive'. With majority livelihoods being farm based, supporting family farming is not a 'primitive strategy but a necessary one (van de Ploeg, 2012). In addition, European Union Commission (2016) enthused that family farming is the most common operational farming mode and thus it is of great importance in most countries. Not only this, the commission was of the opinion that majority of millions farms are family farms, pass down from one generation to another, family farming contributes to the socio-economic and environmental sustainability of rural areas

Family farming is not just an economic enterprise that focuses mainly or only on profit, but a place where continuity and culture are important. Similarly, family farm is a part of a wider rural landscape. It is also a part of a wider rural community and sometimes part of networks that extends into cities. As such, the family farm is a place where culture is applied and preserved just as the farm can be a place of cultural heritage. It contributes immensely to rural development.

Embarking on rural development is very important considering the fact that more two-third of the Nigerian's population is living in rural areas and experiences a lot of mysteries. Poverty, morbidity, and underdevelopment



experienced in rural communities by family farmers show that not much has been achieved even before and after independent (Adedeji, 2004; Obeta and Okide, 2012).

**Sustainable existence:** Sustainability is “equitability and balance” meaning that in order for achievement of family farming objectives to be sustainable and continue indefinitely, achievement should balance the interest of different groups of beneficiaries. So, sustainable family farming is about equity, that is, equality of opportunities for well-being, as well as about comprehensiveness of objectives (Akanbi, 2010). It has also been noted that family farming guarantees a responsible management of natural resources, since conservation of the latter ensures the sustainability of the production unit (Belliere *et al*, 2015).

#### **United Nations Family Farming Day**

The UN declared 2014 as the International Year of Family Farming (IYFF) to recognize the importance of family farming in reducing poverty and improving global food security. IYFF aims to promote new development and policies particularly at the national but also regional levels that will help smallholders and family farmers eradicate hunger, reduce rural poverty and continue to play a major role in global food security through small-scale, sustainable agricultural production (Audinet and Hussien, 2014). Throughout 2014, regional dialogues, civil society consultation,

regional conferences and other events explored issues related to family farming not only in developed world but also in developing countries including Nigeria. Information for Low External Input in Agriculture | Food and Agriculture Organisation (ILEIA/FAO) (2014) however emphasized that many of the issues explored in family farming were co-organized by the Food and Agriculture Organisation (FAO) of the United Nations, the lead agency for IYFF.

ILEIA/FAO (2014) also stated that the 2014 IYFF aimed to create a better understanding of family farming and support the development of pro-family policies. Food Tank (2015) in addition narrated that the aims of IYFF are to focus on international attention of the men, women and youth who operate the more than 400 million family farms around the world and that the IYFF created by UN General Assembly is a worldwide celebration that aims to reposition farming families, indigenous groups, cooperatives and fishing families at the centre. Brull (2014) added that during the IYFF, some key proposals were made towards stronger family farming, policies were highlighted that indicate the major issues affecting family farming and that in 2014 as well, the UN shone a spotlight on the essential contributions of family farming to foods, security, community well-being among others.

Family farming is highly diversified and multi-faced. The

diversity of family farming and the broad range of ways that farms are run have to be respected in order to preserve this form of agricultural production as family farming is clearly the way to the future (McGurelick, 2011). Family farming is one of those phenomena that most societies find increasingly difficult to understand. This is due to many reasons. One of which is that it has control over the main resources that are used in the farm. This includes the land, the animals, the crops, the genetic materials, the house, buildings, machineries and in or mere general sense, the know-how that specifies how to combine and use all these resources. Family farmers have these resources not only to make a profit but also to make a living; to acquire an income that provides them with a decent life and if possible, allow for investments in order to develop the farm further. This applies even if the farmers use expensive machinery or irrigation systems and terrace that the farmers themselves have constructed. Indeed, farming family provides the main part of the labour force (McGurelick, 2011).

Audinet and Hussein (2014) stated the major objectives of IYFF. These are to:

- i. Support the development of policies that will foster sustainable family farming;
- ii. Increase knowledge and public awareness of the agriculture and development sectors;
- iii. Raise awareness of the needs and potential of family farmers, along

with the constraints that they face and ensure that they have access to technical support;

- iv. Create synergies for sustainability.

### **Family farming in Nigeria**

In most states of Nigeria, family farming had been in practice. Abdullahi, Gidado and Jibrin (2010) in their report enthused that more than half of youths (56%), for instance, who considered farming as major occupation, had moderately favourable attitude towards family farming. In Nigeria, agriculture represents 21% of Gross Domestic Product (GDP) and employs two thirds of workforce, 90% of farming product comes from small farms. With 80% of arable land, Nigeria has a huge potential despite a production deficit (Framentin, 2015).

### **Extent of functions of family farming in relation to relevance and practices in Nigeria**

By its number and extent of its functions in societies, family farming, according to Framentin (2015), dominates the world agriculture and accounts for more than one billion farmers worldwide, of whom 14 millions are in Nigeria.

- i. A farmer-centered approach is the key to the attainment of sustainability in developed and developing countries and many of the program areas in Agenda 21, Agricultural bills or Agricultural Policy that is referred to in this context as incentive policies,

- address these objectives. The sustainable development of family farming is also addressed in incentive policies (United Nations Environment Program for Development (UNEPD) (2014). Incentive policies, according to Gardner (2002), include legislation as the land Act of 1820 and the Homestead Act, directed at development, supporting family farms and the inputs of the total agricultural sectors such as land, research, and human labour.
- ii. Several significant practices have been taken in recent years by most governments all over the world to reverse the downward trend in agricultural production and livelihood of family farming. Some of these important practices include incentive policies taking into the account the recommendations of the National Commission on farmers and after consulting the state governments. These have provided for a holistic approach for development of the farm sector.

The primary focus of the policies is on 'farmers' holistically and not merely on agriculture. The major goals of these policies for farmers are to:

- Improve economic viability of farming by substantially increasing the net income of farmers and to ensure that agricultural progress is measured by advances made in this income

- Protect and improve land, water, bio-diversity and genetic resources essential for sustained increase in the productivity, profitability and stability of major farming systems by creating an economic stake in conservation.
- Develop support services including provision for seeds, irrigation, power, machinery and implements, fertilizers and credits at affordable prices in adequate quantity for farmers.
- Pay explicit attention to sustainable rural livelihood
- Develop and introduce a social security system for farmers.
- Provide appropriate opportunities in adequate measure for non-farm employment for the farm households.
- Foster community-centered food, water and energy security systems in rural communities and to ensure nutrition security at the level of every child, woman and man (Business Knowledge Resource Online, 2014).

#### **Obstacles to family farming in Nigeria**

There are many challenges confronting family farming in Nigeria. These obstacles include:

- Inappropriate agricultural security policies and strategies.
- Trade policies which undermine the promotion and consumption of locally produced foods by

allowing importation of cheap food stuffs

- Lack of market information
- Lack of transport and processing facilities
- Inadequate marketing infrastructure
- Lack of coordination along the supply chain (Partridge, 2011).

In addition, Grisa (2001) observed that one of the obstacles to family farming is that family farmers are not well organized and that they have limited access to information. He also noted that family farmers have problems related to high level of bureaucracy resulting in delays in payment and in the transport and that they could not get funds at appropriate times.

#### **Ways of enhancing family farming in Nigeria**

However, Grisa (2011) offered some solutions to strengthening family farming and these solutions could go a long way to solve most obstacles to family farming in the area of policies. These are that some family farming related programmes could be put in place for farmers to:

- ❖ Help restore or recreate a 'peasant way of life'
- ❖ Purchase a diverse range of fruits, vegetables, process good and animal products
- ❖ Create new market and make the existing one more robust guarantee sales at higher rates
- ❖ Promote traditional and regional products and practices.

The solution to most of the obstacles in developing nations and Nigeria is no exception, is perhaps the most important of the needs to localize foods, since it is something every one, everywhere, needs every day (Mc Gorelick, 2011).

Family farming could be enhanced in several ways as highlighted below if:

- *Family farmers adopt improved farm practices.* If improved farm practices are judiciously adopted and managed, agricultural productions are increased. These practices are of greatest assets to the family farmers (Rabiu, 2010).
- *Family farmers embrace organic farming.* Andre (2014) noted that concerted action to support organic farming is emphasized in the launch of the International Year of Family Farming (IYFF) and that a recent study shows that modern non-certified organic farming is a potentially sustainable approach or way to agricultural development. This in turn could enhance family farming.
- *Governments put in place proper incentive policies.* Like any other economic sector, improved agriculture and sustainable rural development can only be achieved in conducive environment which requires incentive policies. Family farming should be recognized and structured so as to be able to develop a good policy tailored for the sector since everything starts with legal recognition of the status

and profession of farmers (Chatel, 2014).

- *Governments adopt a new and comprehensive approach to agricultural education.* This is needed to improve agriculture focusing on a new way of thinking and understanding the reality of family farming. This approach goes beyond incorporating 'green content' in the schools' curriculum rather courses that follow a comprehensive vision that includes biological, physical, chemical, ecological and social aspects including economic, political and cultural perspectives of family farming (Sarandon and Flores, 2011).
- *Extension agents organise training programmes in family farming.* Training programmes such as seen in Farmers Field School Approach, complemented with monitoring routines or self assessment procedure play an extremely important roles in improving agriculture and making agricultural practices more sustainable for family farming (Boselie and Hiller 2010).
- *Extension agents put family farmers at the centre.* Farmer-led research and extension need put family farmers at the centre and strengthen their efforts, particularly as they are being most affected by and are actively adapting to impacts of climate change (Brull, 2014).

- *Youth-in-Agriculture participate in vocational training.* A holistic view of young people's need is required and policies must ensure the right of Youth-in-Agriculture to live their lives in their own territories and be participating in vocational training for sustainable family farming (Brull, 2014).

### **Conclusion**

The relevance of family farming is recognized to reduce poverty and improve global food security not only at national level but also at regional level. However, as important as family farming is with a lot of acquired qualities that can benefit family farmers and sustain agriculture, many strategies that can enhance family farming in Nigeria have not been put in place.

### **Recommendations**

The paper therefore recommended the following to enhance family farming and sustain agriculture thereby develop national economy. That:

1. Family farmers should diversify to help their income to remain more stable, offsetting the seasonality of commodity production and the climatic, financial, and other risks involved so as to be less vulnerable and more autonomous.
2. Governments can reward family farmers that work hard and also promote production and distribution of seeds of local varieties to support the conservation and management of

agro-biodiversity. This will provide a new source of income for many family farmers.

3. Governments should also promote family farmers organizations to enable the farmers to have unlimited access to information.
4. Ministry of agriculture at local, state and federal levels should periodically organize training programmes on family farming so as to sustain rural livelihood.
5. Extension agents should collaborate with research scientists to assist family farmers improve their standard of living by increasing their productivity.

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## **Waste Generation and Management Practices in Urban Agriculturally Oriented Business for Sustainable Development in South-East, Nigeria**

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### **Abstract**

The study identified urban agricultural waste management as a means for sustainable development in South-eastern Nigeria. Three research questions were posed and answered by the study, while two null hypotheses were formulated and tested at 0.05 level of significance. A multi-stage sampling procedure involving simple random sampling and purposive sampling techniques were used to select 240 registered farmers and 50 Staff of Waste Management Board from a population of 749,538 registered farmers and 1,105 Staff of Waste Management Board in the study area. The total sample of the study was 290. Questionnaire, Focus Group Discussion (FGD) guide and documentary evidence were the instruments used for data collection. Cronbach alpha formula was used to determine the internal consistency of the instrument which gave a reliability coefficient of 0.85. Mean and standard deviation were used to answer the research questions while t-test was used for testing the null hypotheses at 0.05 level of significance. The findings of the study revealed that urban agricultural wastes can be generated through various agricultural operations within the premises used for agriculture or a farm and managed by minimizing activities that generate wastes, reuse and recycle wastes among others. Based on the findings of the study, some recommendations were made.

**Keywords:** Waste Generation, Urban Agriculture, Agricultural Wastes, Waste Management, Sustainable Development.

### **Introduction**

Income level and urbanization are highly correlated with the amount of waste generated in every settlement. According to Olalere, Matthew and Kehinde (2015) the volume of waste being generated in urban areas of

Nigeria are parallel to its economic dimension and population growth. Similarly, Egun, (2012) opined that waste characteristics vary according to season, income level, population, social behaviour, climate, and industrial production. Abd'razack,

Yusuf, and Utange, (2013) reported that little attention is given to waste management practices in Nigeria, as it is common to see heaps of waste in the major cities littering the streets, dumped indiscriminately in drainages, vacant plots and open space. Open dumping of wastes is unhealthy and can deteriorate the environment over time. Sangodoyin, in Amori, Fatile, Ihuoma, and Omoregbee, (2013) stated that open dumping of wastes serves as breeding place for flies, insects and rats. The author explained that, flies are capable of transmitting diseases through contact with food and water such as dysentery and diarrhea. Also the spread of rats to neighbouring house in the vicinity of refuse could be linked with diseases such as Salmonellosis, Leptospirosis and Lassa fever. In another opinion Mohammadi and Soleimani (2014) reported that rapid urbanization in recent decades has involved destructive impacts on environment on one hand and many pressures on nature to supply the necessities of urban life including food, energy, materials, and natural resources. Ibrahim, Uba-Eze, Oyewole and Onuk (2009) observed that urban areas in Nigeria are faced with the problem of increasing population and consequently inadequate food supply. Zeeuw, Van and Dubbeling (2011) opined that the ongoing food and economic crisis within cities due to rapid urbanization requires proper planning and strategies to face the future conflicts regarding food insecurity, urban poverty and low

economic development. Planning for cities must include strategies that will enhance food security. Therefore, with the urbanization process and the pursuit for food security, urban and peri-urban agriculturally oriented business has evolved from a simple, traditional and also informal activity into a commercial and professional initiative.

Urban agriculturally oriented business according to Ango, Abdullahi and Abubakar (2011) is a complex system encompassing wider spectrum from core of activities associated with the production, processing, marketing, distribution and consumption of food and non food products. Mohammadi and Soleimani (2014) reported that urban agriculture involves the growth of plants and breeding of animals to provide food and other defined materials within and around cities and towns and its related activities such as production and delivering production factors, processing and marketing. Thus, the practice of producing vegetables, food and fruits within urban environment for household consumption as well as sale to the rapidly growing urban population is termed urban agriculturally oriented business. Danso, in Ango, Abdullahi and Abubakar (2011) opined that urban agriculture is a vital component for the existence of most cities, especially in the developing countries where it contributes substantially to the urban economy of the city dwellers in terms of employment and the supply of food. Involvement in

agriculturally oriented business enterprises has created a number of environmental crises, among which are agricultural wastes.

Agricultural wastes in the opinion of Ashworth, Geoffrey and Pablo (2009) are natural and non-natural wastes produced as a result of agricultural activities. According to the Environmental Association for Universities and Colleges (EAUC) (2006), agricultural wastes are wastes produced as a result of various agricultural operations within the premises used for agriculture or a farm. These activities or operations may include but are not limited to dairy farming, horticulture, seed growing, livestock breeding, grazing land, market gardens, nursery plots and woodlands. Olu, (2013) reported that agricultural wastes are made up of biodegradable and non-biodegradable materials ranging from plant and animal residues to inputs of farming such as packaging, plastic films, animal health products among others. According to Davidson (2011), agricultural wastes are all potential resources since they have multiple uses like, providing manure as fertilizers, improving the water holding capacity of the soil, recycling bio-degradable waste (gasification and pyrolyzation), land filling, reduction of well water contamination and minimizing of surface water pollution among others. The above uses might depend on the abilities of farmers to manage waste generation. Agricultural waste generation

connotes the sequence of agro wastes effluence within an agricultural sector (Agamuthu, 2009). The author estimated that 988 million tonnes of agricultural wastes are produced globally in a year. Similarly, Olalere, Matthew and Kehinde (2015) revealed that agricultural waste generation involves the proportion of agricultural wastes discarded to the environment, which may in turn result in various degrees of air, water and land pollution. To the best knowledge of the researchers, information on the quantity of wastes generated from agriculture in Nigeria including South-East States is not yet verified and therefore is lacking. Nwibo and Okorie (2013) opined that in order to maintain an upward shift and to unleash the enormous potential for attracting entrepreneurs' investments to agribusiness and agro-industries, policies and regulations affecting agricultural production, the legal environment of the investment as well as the overall investment climate in Nigeria need to be overhauled and a framework for managing the generated wastes be evolved. Ojekunle (2011) observed that despite the impact of urban agriculture to sustainable development in the society, the inability to manage waste from agricultural operations is a major challenge to urban farmers and the society at large. One of the most important challenges faced by urban agriculture is waste management. Therefore, adequate attention should

be given to waste management for a safe environment.

Waste management according to Uchegbu in Osinem, (2005) is a planned system of effectively controlling the production, storage, collection, transportation, processing and disposal or utilization of wastes, in a sanitary, aesthetically friendly acceptable and economical manner. Omuta in Uwadiogwu and Chukwu (2013) opined that managing waste concerns the interplay among generation, storage, collection and final disposal. Therefore, waste management involves activities that deal with waste before and after it is produced, to final disposal. According to Uwadiogwu and Chukwu (2013), there are two major approaches to waste management in Nigeria which include, private and public sectors. The authors explained that the private system is a contractual arrangement between an individual or group of persons who undertake waste disposal as a business venture and the waste generator. The defunct Federal Environmental Protection Agency (FEPA) which was formed in 1986 and upgraded to become the Federal Ministry of Environment (FME) in 1999 are charged with the responsibility of public waste management in Nigeria. This is complimented by section 1, (24) of FEPA Decree No.8 (1988) empowering both local and State government to set up their own environmental protection agencies (Osinem, 2005). It is expected that the FME should be

more effective in monitoring and possibly controlling industrial pollution, environmental degradation and occupational hazard in the country. However, Oyeniyi (2011) reported that environmental hazards of varying magnitude dangerously threaten human and animal lives in most urban centres in Nigeria and an attempt to manage these wastes has overwhelmed the Nigerian government. A draft policy on Municipal and Agricultural Wastes was reviewed in August, 2012 in Nigeria and is hoped that the policy in time will lead to development of a comprehensive legislation and possibly a plan that will address the issue of waste generation and management in the country. The need to promote urban agricultural waste management is being influenced by increasing agricultural oriented business in urban areas and productivity globally, as adequate waste management will enhance sustainable development.

Sustainable development is all about equity and could be regarded as equality of opportunities for human well-being as well as comprehensiveness of objectives in the economic, social, and environmental context (Kayoma and Oharisi, 2013). Stoddart, (2011) opined that sustainable development requires the integration of economic, environmental, and social objectives across sectors and territories throughout decision making processes in order to move towards

development that is truly sustainable. Thus, sustainable development is aimed at meeting human needs while preserving the environment so that the needs can be met not only in the present but also for future generations. In this light, the classical definition given by the Brundthland Commission in 1987 is apt. The term sustainable development according to the commission is “development which meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). This paper will therefore attempt to investigate ways to effectively manage wastes generated from urban agriculturally oriented business for sustainable development in Nigeria.

#### **Purpose of the Study**

The general purpose of the study was to find out ways of enhancing waste management in urban agriculturally oriented business for sustainable development in Nigeria. Specifically, the study sought to determine the:

1. types of waste generated from urban agriculturally oriented business, in South-East Nigeria;
2. ways to effectively manage wastes generated from urban agriculturally oriented business in South-East, Nigeria; and
3. Roles of government towards waste management in urban agriculturally oriented business in South-East, Nigeria.

#### **Research Questions**

The following research questions have been posed to guide the study.

1. What are the types of wastes generated from urban agriculturally oriented business in South-East Nigeria?
2. What are the ways to effectively manage wastes generated from urban agriculturally oriented business in South-East Nigeria?
3. What roles can the government play in the management of urban agricultural wastes in South-East Nigeria?

#### **Research Hypotheses**

The following null hypotheses were tested at 0.05 level of significance to guide the study:

**Ho<sub>1</sub>:** There is no significant difference in the mean responses of registered farmers and staff of waste management board on the types of wastes generated from urban agriculturally oriented business in South-East, Nigeria.

**Ho<sub>2</sub>:** There is no significant difference in the mean responses of farmers and staff of waste management board on the ways to effectively manage wastes generated from urban agriculturally oriented business in South-East, Nigeria.

#### **Methodology**

**Design of the Study:** Survey design was adopted for this study. Emaikwu (2011) described survey research design as that in which the same information is gathered from an



unbiased representative group of interest. This design was considered suitable because the opinion of a representative of respondents were collected from registered farmers and Staff of Waste Management Board in Anambra, Abia, Ebonyi, Enugu and Imo States.

**Area of the Study:** The study was carried out in South-East, Nigeria. The area comprises of five States namely; Anambra, Abia, Ebonyi, Enugu, and Imo. The area has a total population of 16.4 million people who are mainly of Igbo extraction (National Population Commission, 2006). The area is endowed with abundant natural resources and lots of agricultural activities which leads to lots of agricultural waste generation. The agricultural activities conform to the tri-aggregates of agribusiness which include; farm supply, farm processing and distribution/marketing of processed products (Nwibo and Okorie, 2013).

**Population for the Study:** The target population for the study was all registered farmers and Staff of Waste Management Board in the study area. In all there are 749,538 registered farmers and 1,105 Staff of the Waste Management Board in the five States of the South-East, Nigeria.

**Sample and Sampling Techniques:** A multistage sampling procedure involving simple random sampling and purposive sampling techniques were employed in arriving at the sample size used for the study. In the first stage, three (3) States out of the

five (5) States which are regarded as agricultural rich States in South-East, Nigeria were randomly and purposively selected. These States include Abia, Ebonyi, and Enugu. Secondly, from the three (3) selected States, two agricultural zones noted for their agricultural activities were randomly and purposively selected from the three (3) existing zones of the States as follow. In Abia State - Abia North and South agricultural zones were selected. In Ebonyi State - Ebonyi North and Central agricultural zones were selected, while in Enugu state, Enugu East and North agricultural zones were selected. Thus a total of six (6) agricultural zones were selected for the study. Thirdly, two hundred and forty (240) large scale registered farmers were purposively selected from the total number of registered farmers (749,538) in the selected agricultural zones of the States and fifty (50) field staff out of one thousand one hundred and five (1,105) Staff of Waste Management Board available in the selected zones were purposively selected for the study. The selection of farmers was done proportionately according to the population of farmers in each of the zones using Uzoagulus' 2011 model in sample size selection. In the sample size selection, 40% of the population for the States were sampled as follows: Ebonyi North (33 farmers), Ebonyi Central (58 farmers), Abia Central (40 farmers), Abia North (56 farmers), Enugu East (17 farmers) and Enugu North (36 farmers), giving a total of

240 farmers. Generally, a total of 290 respondents were used for the study.

**Instrument for Data Collection:** Questionnaire, Focus Group Discussion (FGD) guide and documentary evidence were the instruments used for data collection.

**Use of questionnaire:** A questionnaire of four point rating scale of Strongly Agree, Agree, Disagree and Strongly Disagree with corresponding values of 4, 3, 2 and 1 respectively, with 28 identified items in urban agricultural waste management was used for the collection of data from respondents.

**Focus Group Discussion (FGD) guide:** The researchers organised a FGD with 10 Staff of Waste Management Board (SWMB); two each from each State in the South-East, to get information on the types of wastes generated and the possible measures to be put in place for agricultural waste management. The views collected from the discussants showed that agricultural wastes generated are mainly from crop and livestock residues, sewage sludge wastes, slaughter house wastes and green wastes among others.

Records from the discussants (SWMB) showed varying degrees of quantities of agricultural wastes generated in their various States and is presented in Table 1b. The management techniques suggested included- minimizing activities that generate wastes, recycling biodegradable and non-biodegradable wastes among others.

**Validation of Instrument:** The instruments were subjected to face

validation by three experts; one from Agricultural and Bioresources Education, University of Nigeria, Nsukka and two Senior Officers of Staff of the Waste Management Board Imo State, Nigeria.

**Reliability of the Instrument:** The Cronbach Alpha method was used to determine the reliability of the questionnaire instrument, which yield a reliability coefficient of 0.85.

**Method of Data Collection:** The questionnaire instrument was administered by the researcher to the respondents with the help of three research assistants. The research assistants were briefed on the methodology of this study. The rationale for using these research assistants was to make clarification on items wherever the need arises and ensure that the actual respondents for whom the instrument is meant were those who completed them. The FGD guide was used to collect qualitative data from the 10 discussants by the researchers.

**Method of Data Analysis:** Data collected using the questionnaire were analyzed using mean and standard deviation to answer the research questions, while t-test statistic was used for testing the null hypotheses at 0.05 level of significance. The null hypotheses of no significant difference were upheld for items which the critical t-value is greater than 1.96 and rejected for items which critical t-value was less than 1.96. Any item with a mean score of 2.50 and above was considered agreement and the items

that had mean scores below 2.50 were considered disagreement. The data from the FGD were analysed qualitatively and used to support the quantitative data collected.

### Results

**Research Question 1:** What are the types of wastes generated from urban

agriculturally oriented business in South-East, Nigeria?

**H<sub>01</sub>:** There is no significant difference in the mean response of registered farmers and staff of waste management board on the types of wastes generated from urban agriculturally oriented business in South-East Nigeria.

**Table 1a:** Mean and t-test analysis of the respondents on types of wastes generated from urban agricultural practices. (t-critical value = 1.96)

S/N	Types of Wastes	Responses: Farmers		SWMB			Remarks
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>	t-cal	
<b>Biodegradable waste</b>							
1	Sewage sludge waste	3.79	0.51	3.32	0.62	5.67	NS
2	Slaughter house waste	3.49	0.51	3.58	0.53	-1.09	S
3	Animal dung	3.75	0.43	3.40	0.49	5.06	NS
4	Green wastes (mulch, weeds etc)	3.05	0.59	3.24	0.55	-2.09	S
5	Dead animal and meat decay	2.52	0.79	2.42	0.85	0.76	N
<b>Solid waste</b>							
6	Crop residue (grain stalks, straw, nutshells)	3.02	1.11	2.96	0.69	0.37	NS
7	Empty aerosol cans, paint can and compressed gas cylinders	3.02	0.37	3.26	0.77	-3.22	S
8	Packaging and non-packaging plastics Silage films (Refuse and garbage)	3.14	0.75	3.08	0.72	0.49	NS
<b>Hazardous waste</b>							
9	Building waste (General Construction and Demolition waste, Asbestos cement, Metal)	3.48	0.52	2.92	0.56	6.71	NS
10	Animal health waste (Unused medicines, Syringes and needles)	2.48	0.72	2.78	0.76	-2.60	S
11	Machinery waste (Batteries, Tyres, Fluorescent light tube, Machinery)	2.96	0.39	2.74	0.82	2.82	NS
12	Agrochemical concentrates and compounds	3.45	0.56	3.10	0.61	3.85	NS
13	Used agricultural related oil	3.05	0.37	3.10	0.78	-0.62	S

$N_1$ = Farmers: 240,  $N_2$  = Staff of Waste Management Board (SWMB): 50;  $\bar{X}_1$  =Mean for Farmers,  $\bar{X}_2$  = Mean for SWMB; NS = Not Significant, S =Significant;  $SD_1$  = Standard Deviation for Farmers and  $SD_2$ = Standard Deviation for SWMB.

The data in Table 1a indicates that the means of the 13 items ranged from 2.50 to 3.57. This implies that the means were above the cut-off point of 2.50 indicating that the items are agreed upon by the respondents as types of wastes generated from urban agriculturally oriented business in South-East Nigeria. The table also revealed that the calculated t-value ranged from -3.22-6.71. The result shows that items 2, 4, 7, 10 and 13 had calculated t-value below the t-critical value of 1.96. The result showed that

the responses from farmers and Staff of Waste Management Board did not differ significantly in 5 out of 13 items. This implied that the two groups of respondents shared the same view on the types of waste generated from urban agriculturally oriented business. Therefore the null hypothesis was not rejected. The data from the FDG showed that green wastes, livestock and crop residues and sewage sludge were among the agricultural wastes generated.

**Table 1b:** Estimated Agricultural Wastes Generated in Urban Cities of South-East, Nigeria

City	Tonnage/ Month	Density(Kg/m <sup>3</sup> )	Kg/Capital/Day
Abakaliki	48,242	340	0.48
Afikpo	36,678	290	0.36
Enugu	20,675	230	0.51
Nsukka	10,200	350	0.42
Umuahia	11,000	270	0.63
Aba	31,248	360	0.54
Orlu	28,137	310	0.53
Owerri	14,785	280	0.46
Onitsha	29,026	320	0.56
Awka	17,825	300	0.58

**Source:** Records from the office of WMB of each State, 2015.

The data in Table 1b are records from the discussants (SWMB); it shows various degrees of quantities of agricultural wastes generated in their various States. Abakaliki, Afikpo, Aba, Onitsha and Orlu ranked high on the amount of agricultural wastes generated while Enugu, Awka,

Owerri, Umuahia and Nsukka followed suit. The difference in the degree of wastes generated in their various States may be as a result of the nature of urban agriculture and its related business practiced in those States.

**Research Question 2:** What are the ways to effectively manage wastes generated from urban agriculturally oriented business in South-East Nigeria?

**Ho 2:** There is no significant difference in the mean response of farmers and

staff of waste management board on the ways to effectively manage wastes generated from urban agriculturally oriented business in South-East Nigeria.

**Table 2:** Mean and t-test analysis of the respondents on ways to effectively manage the types of waste identified in table 1 (t-critical value = 1.96)

S/N	Ways to Manage Wastes	Responses: Farmers		SWMB		t-cal	Remarks
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>		
14	Minimize activities that generate biodegradable waste	2.56	0.61	2.92	0.98	-3.33	S
15	Use biodegradable waste for land filling	3.16	0.48	2.94	0.31	3.09	NS
16	Recycling of biodegradable waste (Re-use)	3.06	0.38	3.76	0.51	-11.0	S
17	Minimize activities that generates solid waste	3.13	0.47	3.10	0.67	0.41	NS
18	Use solid waste for land filling	3.23	0.44	3.40	0.49	-2.37	S
19	Recycle solid waste(Re-use)	2.67	0.59	2.76	0.62	-1.00	S
20	Minimize hazardous waste	2.80	0.76	2.82	0.56	-0.17	S
21	Use hazardous waste for land filling	2.20	0.47	2.12	0.32	1.13	NS
22	Recycle hazardous waste (Re-use)	2.28	0.71	2.14	0.63	1.23	NS
23	Policies on municipal and agricultural waste management should be formulated.	2.83	0.74	2.82	0.53	-0.18	S

N<sub>1</sub>= Farmers: 240, N<sub>2</sub> = Staff of Waste Management Board (SWMB): 50;  $\bar{X}_1$  =Mean for Farmers,  $\bar{X}_2$  = Mean for SWMB; NS = Not Significant, S =Significant; SD<sub>1</sub> = Standard Deviation for Farmers and SD<sub>2</sub>= Standard Deviation for SWMB.

The data in Table 2 revealed that the mean of all the 10 items ranged from 2.16-3.41. The items 14 through 20 and 23 had a mean value above 2.50, while items 21 and 22 had a mean value below 2.50 which indicated that some items are not ways to effectively

manage the types of wastes identified in table 1. The results of the t-test analysis showed that the t-calculated value of 5 items (14, 16, 18, 19 and 20) were less than the t-critical value of 1.96. Four items (15, 17, 21 and 22) exceeded this value. On this basis the

null hypothesis was rejected for 5 items and upheld for 4 items. This implies that the groups of respondents rated the items from different perspectives maybe because of their background. The FDG focus was on recycling of agricultural wastes and

the formulation of comprehensive policies on municipal and agricultural waste management in Nigeria.

**Research Question 3:** What roles can the government play in the management of urban agricultural wastes in South-East Nigeria?

**Table 3:** Mean and standard deviation of the respondents on the roles government can play towards urban agricultural waste management

S/N	Roles of Government	Farmers 240		Staff WMB 50		Over All		Remarks
		$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	
24	Providing special dump site for farmers	3.00	0.62	3.04	0.28	3.02	0.45	Agreed
25	Enlightening farmers on modern waste management practices through extension agents	3.19	0.53	3.02	0.55	3.10	0.55	Agreed
26	Provision of waste management facilities for farmers in designated urban locations	3.06	0.42	2.56	0.73	2.81	0.57	Agreed
27	Providing loans to farmers to acquire waste management facilities	3.23	0.53	3.06	0.47	3.14	0.50	Agreed
28	Formulating policies on municipal and agricultural waste generation for a comprehensive legislation in Nigeria	3.05	0.51	3.01	0.45	3.03	0.48	Agreed

Staff WMB = Staff of Waste Management Board,  $\bar{X}$ =mean, SD = Standard Deviation

Table 3 shows the mean values and standard deviation of the respondents on the roles of government towards urban agricultural waste management which ranges from 2.81 - 3.14. The mean scores are above the cut-off point of 2.50 which indicated that all the items in table 3 are the roles of government towards urban

agricultural waste management. The standard deviation ranged from 0.45 - 0.57 which indicates that the responses are close to each other and relevant for successful urban agricultural waste management for sustainable development in south-east Nigeria. The FDG revealed that a comprehensive legislation should be



put in place to tackle agricultural waste management in Nigeria and non-governmental organizations should as well assist in the management of urban agricultural wastes.

### **Discussion of Findings**

Findings in Table 1 revealed that all the items are types of wastes generated from urban agriculturally oriented business. This is in consonance with the research report of Ashworth, Geoffrey and Pablo, (2009) which stated that agricultural wastes are natural and non-natural wastes produced as a result of agricultural activities. Batteries, fluorescent light tubes, empty aerosol cans, paint can and compressed gas cylinders were identified as agricultural wastes. The result of the FGD showed that agricultural wastes generated are mainly from crop and livestock residues as well as green wastes and sewage sludge wastes. This finding is in line with Olu, (2013) who reported that agricultural wastes includes plant and animal residue as well as inputs of farming such as packaging, plastic films, animal health products among others.

Secondly Table 2 showed that majority of the items identified in table 1 can adequately be managed. This is in agreement with Davidson (2011) who opined that agricultural waste are all potential resource since they have multiple uses like, providing manure as fertilizers, improving the water holding capacity of the soil, recycling

bio-degradable waste(gasification and pyrolization), land filling, reduction of well water contamination and minimizing of surface water pollution among others. The FGD result showed that recycling and policy formulation are keys to effective urban agricultural waste management. However, in order to achieve the effective waste management practices identified, the interplay among generation, storage, collection and final disposal must be given adequate consideration (Omuta in Uwadiogwu and Chukwu, 2013).

In Table 3 all the items from 24-28 were agreed upon as roles of government towards urban agricultural waste management. This implies that Nigerian government is lacking in its roles. However, the findings may point to the fact that Non-governmental organizations have a role to play and not leaving everything to the hands of the government. Oyeniyi (2011) reported that environmental hazards of varying magnitude dangerously threaten human and animal lives in most urban centres in Nigeria and an attempt to manage these wastes has overwhelmed the Nigerian government. The FGD result showed that non-governmental organizations should also assist in the management of urban agricultural wastes and a comprehensive legislation needs to be put in place to tackle agricultural wastes. Therefore, all hands must be on deck to help government manage wastes generated from urban

agriculturally oriented business for sustainable development.

### Conclusion

It was observed from the study that the types of wastes generated from urban agriculturally oriented business are enormous and requires ways to effectively manage them. For a sustainable development to be achieved in South East, Nigeria, there is need for government and nongovernmental organizations to partner with farmers and the Waste Management Board for improved agricultural practices especially in the area of urban agricultural waste management.

### Recommendations

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

- i. Farmers and Staff of Waste Management Board should collaborate and locally manage urban agricultural waste so as to attract government and investors
- ii. Awareness should be created so that decision-makers will be convinced about the benefits of urban agricultural waste management for creative decision making in the Federal Ministry of Agriculture
- iii. Budgetary provisions should be made by government to ensure that training is organized on a continuous basis for farmers and Staff of Waste Management Board

on modern waste management practices

- iv. Non-governmental organizations should also assist in the management of urban agricultural waste for a safe environment for all.
- v. Government should revisit the draft policy on Municipal and Agricultural Wastes which was reviewed in August, 2012 in order to come up with a comprehensive legislation and possibly a plan that will address the issue of urban agricultural waste generation and management in the country.

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## **Utilization of Art Education for Empowering Prison Inmates in Makurdi**

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### **Abstract**

The aim of the study was to investigate the suitability or otherwise of art education as a catalyst in empowering inmates with art skills and discipline. Specifically, the study determined prisoners' achievement in learning art and the difficulties inmates encounter in learning art. Experimental design was used for the study along with participant observer technique. 40 inmates were selected randomly from the 122 convicted inmates. Mean and t-test analyzed the quantitative data while descriptive statistics analyzed qualitative data. The findings reveal among others factors that there was a significant difference in learning art among the inmates. Low literacy level and anxiety to get discharged from some inmates hindered their performance. The study strongly recommended art in particular and education in general to be included as a major penal treatment of inmates in Makurdi prison for empowerment in skill acquisition and handicraft.

**Key Words:** Inmate, Prison, Art Education, Empowerment, Rehabilitation.

### **Introduction**

Empowerment service in prison is an appropriate training for inmates that help them to reduce dependency on release. Rehabilitation means post release efforts made to make it easier for an offender to resettle in society; these are valuable talents for getting prison inmates prepare better for life outside the prison system on release (Gussak, 2004; Gussak and Cohen-

Liebman, 2001.). Nigerian Prison Service (NPS, 2013) refers to empowerment as services provided for prison inmates in order to restore them to fullest physical, mental, psychological, social, vocational and economic usefulness which they are capable. Prison is a place where people are physically confined and usually deprived of a range of personal freedoms.

The age of modern prisons that is known today started with several reforms in the 19<sup>th</sup> century AD in Britain. At this time, prisoners started receiving more care, concept of rehabilitation was introduced and many nations started reconsidering their views on solitary confinement. According to Jackson (1997), the British society started to move away from corporal punishment and towards imprisonment with the hope of reforming the mind and body through empowerment in education and skill acquisition. This new reasoning gained sympathy towards the improvements of prison conditions, the United Nations Standard Minimum Rules for crime prevention and treatment of offenders adopted in 1955 also influenced many countries towards this new direction (Prison, 2010).

In Nigeria, Dolan was the first prison officer to introduce an empowerment programme for prison inmates in Nigeria through adult education and vocational training (Orakwe, 2012). In spite of the early introduction in 1947, the place of rehabilitation services in empowering prisoners has continued to be on the front burner of public discourse among concerned professionals in the prison project in Nigeria as so little has been achieved. Gussak (2004) has established that for some inmates, creating art fosters frustration tolerance, alleviates depression, and increases problem solving and socialization skills. Breiner, Tuomisto, Bouyea, Gussak & Aufderheide, (2011)

found creative expression to be a normal by-product of the austere correction environment as evidenced by prison craft shops. The art programme with its short term and long term training schemes fits perfectly well into the prison setting for the needed empowerment that will support the reformation and rehabilitation of inmates.

Studies (Tanimu, 2010; Omale, 2011; Asokhia and Agbonluae, 2013 ) reported that empowerment programmes like vocational skills and other rehabilitation services in prisons will help inmates acquire the much needed social skills, vocational training and education to be more useful to themselves and the society on release as majority of prisoners' have Senior Secondary School Certificates and below which makes art skill acquisition more important to most prisoners as a way of empowerment. It has been noted that there is value in prison art programmes for educating, improving and reforming individuals while contributing security and cost benefits to correctional institutions and, ultimately, to the society they will return to (Djurichkovic, 2011).

As laudable as the cardinal objectives of the NPS reform agenda are, they were far from reality on the ground, as the current facilities and programmes of the prison are outdated, unsuitable, and irrelevant to the declared reformatory and rehabilitative ideals. Some prisoners cried out in Zaria and Kaduna prisons alleging fewer opportunities to



improve prisoners' lives and that the prison system lacks a mechanism that would inspire prisoners to be self-sustainable (Tanimu, 2010). The African Heads of Correctional/Prisons Services (ACSA, 2012) in a communiqué also acknowledged deficiencies in existing empowerment programmes on the continent of Africa, including Nigeria. No wonder, Chukwumerije (2012) in his presentation of Prison Act Amendment Bill 2012 at the National Assembly Abuja, contended that the Prison Act was outdated, unable to define the purposes of imprisonment, silent on the crucial service of reformation/rehabilitation and archaic in its concept of revenue mobilization. In view of this, scholars have argued considering that the punitive, depriving, and dehumanizing state of Nigerian prisons including Makurdi prison today, the declared objectives of reformation and rehabilitation can hardly be realized hence the material want is the push-pull factor to crime in Nigeria (Asokhia & Agbonluae, 2013; Omale, 2011; and Tanimu, 2010), these authors reported that an average inmate in the Nigerian Prison is a semi-literate individual without handiwork or a work place skill, there is therefore, need to train prison inmates in different trades and crafts of the arts to enable them live a productive life after serving their prison sentences.

There is a normal trend for artistic and creative expressions in prison setting as the arts have been part of life

from the very beginning (Gussak, 1997; Gussak & Ploumis-Devick, 2004), art education can describe, define, and deepen human experiences; it has been providing opportunities for individuals to realize who they are and what they can do to improve their lot in life. Art education initiate change, confront old perspectives from fresh angles of vision. Art activity can be the sure way for enlightening the complexities of human condition particularly those in incarceration. Guardian art and design (2007) held that art and creative activity may be undervalued in mainstream prison life but can so often provide the key to a better way of thinking and acting. Prison friendly countries like Canada, Britain, Australia etc. all used art education as cardinal part of their penal treatment in empowering prisoners as seen in art exhibitions and prison community relations. It is time for prison policy makers in Nigeria, and indeed Benue state to develop a new vision, one based on holding offenders accountable and offering them opportunities to make positive changes instead of allowing prisoners idle away. Prison institutions must become human resource recovery system (Allison, 2000), (Asokhia & Agbonluae, 2013) there is no better way to help prison inmates re-enter the larger society successfully and break the in-and-out of jail cycle than provide them with art skills that they need to succeed in the outside world. Art education can teach dependable income and life skills and discipline, as

well as develop a creative outlet for personal expressions other than violence (Grant, 2006; and Gussak & Ploumis-Devick (2004). Vocational and Creative Arts have been found to be very successful in prison institutions in empowering inmates in ways that are self-sustainable in the advanced world which has drastically reduced recidivism and stigmatization of ex convicts in their societies.

So much has been documented about prison rehabilitation in religious, social and health sectors, but insignificant work has really addressed Art Education as a major factor for empowerment of Makurdi prisoners. The broad aim of the study was to investigate art education as a catalyst in empowering Makurdi prisoners with income generating skills to make them self sustainable on release.

**Purpose of the Study:** The main purpose of the study was to explore the suitability of art education for empowering Makurdi prison inmates with skills and discipline. Specifically, the study determined: (1) level of prisoners' achievement in learning art, and (2) the difficulties inmates encounter in learning art.

**Research Questions:** (a) What is the level of prisons' achievement in learning art? (b) What are the difficulties inmates' encounters in learning art?

### **Methodology**

**Design of the Study:** Experimental design was implemented for this

study; observation schedule was also involved. The rationale for these models hinged on assumption that if prisoners receive art training, then they will display noticeable changes in art skills and socialization skills for problem solving within the prison setting and thereafter on release.

**Area of the Study:** The area of the study was Benue State, Nigeria. The study focussed on Makurdi Medium Security Prison, the prison is located within Makurdi town, five kilometres along Makurdi - Enugu federal high way.

**The population of the study:** This comprised of 122 Inmates that were convicted on long-term and short-term sentences in Makurdi Prison - Benue State, Nigeria.

**Sample for the Study:** The sample for the study consisted of 40 male inmates out of 122 (representing 32.7%) of Makurdi prison that showed interest by signing to participate in the art programme, hence prison inmates are not compelled to undertake any empowerment programme against their will. Simple random sampling technique was used by picking those who signed to undertake the study up to number 40. The only available female convict was sick at the time of the study therefore, could not be considered for the exercise. The inmates share physical and social environment as a homogenous group.

**Instrument for Data Collection:** Observation schedule and test scores in the pre-test/post-test were used to collect data. Observation was based on

manipulative skills in Painting, Drawing and Design. At the Pre-test level, all the participants were given materials to paint, draw and design without treatment. During post-test, experimental group received coaching but control group didn't in drawing, painting and design for ten weeks before test scores were awarded based on inmates' manipulative skills. The researchers looked at technical competence, composition, organization and originality of works done using elements of design in Drawing and Painting activities while principles of design was the focus in Design activity. The initial copies of the instruments were face validated by one expert each from the departments of Fine & Applied Arts, Sociology of Education and Measurement and Evaluation, all of the University of Nigeria, Nsukka. They assessed the adequacy of the items in eliciting the required data, the quality of its language and the logicity of its arrangements. Validates made valuable contributions, constructive criticisms, comments and suggestions which helped in improving the structure of the items of the instrument.

For reliability of the instrument, a trial testing was carried out at Gboko Prison, Benue State due to proximity to Makurdi Prison. Data obtained was used for internal consistency estimate of the instrument using Cronbach Alpha method, which yielded overall coefficient value of 0.87, indicating that the instrument was reliable.

**Data Collection Procedure:** The art sessions in drawing, painting and design lasted between 90-120 minutes. Activities were administered to all the 40 participants by the researchers who were assisted by four prison officials. The exercises lasted for a period of ten weeks in Makurdi open prison workshop during official working hours only (9:00am - 2:00pm, Monday - Friday). At the end of each activity, the researchers and one expert art teacher assessed the prisoners' works. Art works were categorized from highest to lowest in achievement. All works were displayed on the Display Board in the prison open workshop before rating by the assessors using a 5-point rating scale of 20 marks each, equals 100 marks per activity. At the end of data collection, descriptive statistics, mean and t-test were used to analyze the quantitative data while the data collected through observation were analyzed qualitatively. The study considered only one external assessor because of the fragile security nature of prison environments. The researchers also observed the inmates' manipulative skills in the three practical art activities for the study.

**Data Analysis Techniques:** The data from the study was analysed using mean, standard deviation and t-test statistical tool at 0.05 level of significance. The t-test was used because it enabled the researchers to determine the differences between two sample means. Observation enabled the investigators to rate inmates'

manipulative learning skills in art | qualitatively.

**Table 1:** Drawing Activity (Control Group: Pre-Test & Post-Test) = Inmate C

SN	NAME	Performance Indicators (Pre - Test)						Performance Indicators (Post - Test)					
		Line	Form	Texture	Shape	Tone	$\bar{X}$	Line	Form	Texture	Shape	Tone	$\bar{X}$
1	Inmate C1	13	06	10	10	12	<b>10.2</b>	15	09	12	12	09	<b>11.4</b>
2	Inmate C2	10	06	07	14	08	<b>9.0</b>	08	07	06	16	06	<b>8.6</b>
3	Inmate C3	08	10	06	10	09	<b>8.6</b>	09	11	08	13	07	<b>9.6</b>
4	Inmate C4	09	06	08	10	12	<b>9.0</b>	09	07	10	13	08	<b>9.4</b>
5	Inmate C5	08	11	09	14	10	<b>10.4</b>	10	10	10	16	06	<b>10.4</b>
6	Inmate C 6	10	12	12	14	12	<b>12.0</b>	12	12	14	12	09	<b>11.8</b>
7	Inmate C7	14	09	10	10	06	<b>9.8</b>	12	11	10	12	09	<b>10.8</b>
8	Inmate C8	12	11	10	14	14	<b>12.2</b>	14	11	11	12	09	<b>11.4</b>
9	Inmate C9	14	11	08	12	08	<b>10.6</b>	15	12	10	13	07	<b>11.4</b>
10	Inmate C10	10	08	06	09	10	<b>8.6</b>	08	07	07	13	07	<b>8.4</b>
11	Inmate C11	10	16	14	10	12	<b>12.4</b>	07	10	08	13	07	<b>9.0</b>
12	Inmate C12	12	10	10	12	04	<b>9.6</b>	15	12	13	16	06	<b>12.4</b>
13	Inmate C13	08	09	12	12	06	<b>9.4</b>	10	11	13	13	08	<b>11.0</b>
14	Inmate C14	10	12	12	10	14	<b>11.6</b>	07	11	07	13	08	<b>11.0</b>
15	Inmate C15	08	08	10	12	06	<b>8.8</b>	09	10	11	13	07	<b>10.0</b>
16	Inmate C16	14	10	12	12	08	<b>11.2</b>	18	11	14	16	06	<b>13.0</b>
17	Inmate C17	13	12	11	11	09	<b>11.2</b>	15	14	13	13	08	<b>12.4</b>
18	Inmate C18	07	08	07	12	10	<b>8.8</b>	08	09	09	13	08	<b>9.4</b>
19	Inmate C19	06	14	14	10	06	<b>10.0</b>	07	06	06	12	09	<b>8.0</b>
20	Inmate C20	06	06	10	12	12	<b>9.2</b>	06	08	13	16	06	<b>9.8</b>
Group Mean		<b>10.2</b>	<b>10.2</b>	<b>10.3</b>	<b>11.6</b>	<b>8.4</b>	<b>10.1</b>	<b>10.7</b>	<b>9.95</b>	<b>10.3</b>	<b>13.5</b>	<b>7.5</b>	<b>10.4</b>

Individual & group mean of Control Group under the pre-test & post-test scores

**Table 2:** Drawing Activity (Experimental Group: Pre-Test & Post-Test) = Inmate E

SN	NAME	Performance Indicators (Pre - Test)						Performance Indicators (Post - Test)					
		Line	Form	Texture	Shape	Tone	$\bar{X}$	Line	Form	Texture	Shape	Tone	$\bar{X}$
1	Inmate E1	12	10	12	11	07	<b>10.4</b>	18	15	14	18	09	<b>14.8</b>
2	Inmate E2	11	12	10	10	08	<b>10.2</b>	18	14	13	16	11	<b>14.4</b>
3	Inmate E3	09	10	09	10	08	<b>9.2</b>	16	13	16	13	10	<b>13.6</b>
4	Inmate E4	10	08	07	05	08	<b>7.6</b>	18	14	14	13	10	<b>13.8</b>
5	Inmate E5	12	11	08	07	10	<b>9.4</b>	16	13	16	18	09	<b>14.4</b>
6	Inmate E 6	10	12	10	11	08	<b>10.2</b>	17	14	12	12	07	<b>12.4</b>
7	Inmate E7	10	12	11	08	09	<b>10.0</b>	14	15	14	12	07	<b>12.4</b>
8	Inmate E8	11	13	08	10	11	<b>10.6</b>	16	17	14	16	11	<b>14.8</b>
9	Inmate E9	08	08	07	06	09	<b>7.6</b>	13	12	11	13	10	<b>11.8</b>
10	Inmate E10	07	07	08	05	08	<b>7.0</b>	12	12	11	18	09	<b>12.4</b>
11	Inmate E11	10	10	11	12	06	<b>9.8</b>	14	13	14	18	09	<b>13.6</b>

12	Inmate E12	06	08	07	06	08	<b>7.0</b>	10	08	10	16	11	<b>11.0</b>
13	Inmate E13	08	10	08	08	08	<b>8.4</b>	12	14	14	16	11	<b>13.4</b>
14	Inmate E14	06	08	06	07	08	<b>7.0</b>	08	13	08	16	11	<b>11.2</b>
15	Inmate E15	04	08	10	08	05	<b>7.0</b>	07	09	14	12	07	<b>9.8</b>
16	Inmate E16	05	06	08	07	05	<b>6.2</b>	09	08	13	12	07	<b>9.8</b>
17	Inmate E17	06	08	08	07	06	<b>7.0</b>	08	12	12	12	07	<b>10.2</b>
18	Inmate E18	04	06	04	07	07	<b>5.6</b>	08	11	08	13	10	<b>10.0</b>
19	Inmate E19	05	10	10	10	06	<b>8.2</b>	09	14	14	13	10	<b>12.0</b>
20	Inmate E20	08	08	07	11	05	<b>7.8</b>	13	13	12	18	09	<b>13.0</b>
Group Mean		<b>8.1</b>	<b>9.3</b>	<b>8.5</b>	<b>8.3</b>	<b>7.5</b>	<b>8.3</b>	<b>12.8</b>	<b>12.7</b>	<b>12.7</b>	<b>14.8</b>	<b>9.3</b>	<b>12.5</b>

Individual & group mean of Experimental Group in the pre-test & post-test scores

**Table 3: Painting Activity (Control Group: Pre-Test & Post-Test)**

SN	NAME	Performance Indicators (Pre - Test)						Performance Indicators (Post - Test)					
		Line	Form	Texture	Shape	Tone	$\bar{X}$	Line	Form	Texture	Shape	Tone	$\bar{X}$
1	Inmate C1	09	10	10	08	07	<b>8.8</b>	09	11	12	10	09	10.2
2	Inmate C2	11	12	10	10	08	<b>10.2</b>	08	14	13	12	11	<b>9.6</b>
3	Inmate C3	09	10	09	10	08	<b>9.2</b>	16	13	16	13	10	<b>13.6</b>
4	Inmate C4	10	08	07	05	08	<b>7.6</b>	10	14	14	13	10	<b>12.2</b>
5	Inmate C5	11	09	08	07	10	<b>9.0</b>	11	13	16	11	09	<b>12.0</b>
6	Inmate C 6	10	09	10	11	07	<b>9.4</b>	10	07	12	12	13	<b>10.8</b>
7	Inmate C7	10	12	11	08	06	<b>9.4</b>	14	12	07	12	10	<b>11.0</b>
8	Inmate C8	10	10	08	10	06	<b>8.8</b>	08	07	10	06	10	<b>8.2</b>
9	Inmate C9	06	08	07	06	09	<b>7.2</b>	06	07	09	10	10	<b>8.4</b>
10	Inmate C10	07	07	08	05	08	<b>7.0</b>	09	06	11	08	09	<b>8.6</b>
11	Inmate C11	10	10	11	12	06	<b>9.8</b>	14	10	14	08	09	<b>11.0</b>
12	Inmate C12	06	08	07	06	08	<b>7.0</b>	07	08	10	06	11	<b>8.4</b>
13	Inmate C13	07	10	08	07	08	<b>8.0</b>	13	14	10	06	07	<b>10.0</b>
14	Inmate C14	06	08	06	07	08	<b>7.0</b>	08	13	12	14	11	<b>11.6</b>
15	Inmate C15	04	04	10	08	05	<b>6.2</b>	09	09	14	12	14	<b>11.6</b>
16	Inmate C16	05	06	05	07	05	<b>5.6</b>	09	08	13	12	09	<b>10.2</b>
17	Inmate C17	06	08	08	07	06	<b>7.0</b>	14	12	10	11	10	<b>11.4</b>
18	Inmate C18	04	05	04	07	07	<b>5.4</b>	08	11	08	10	06	<b>8.6</b>
19	Inmate C19	05	07	10	07	06	<b>7.0</b>	09	07	14	08	10	<b>9.6</b>
20	Inmate C20	08	07	07	11	05	<b>7.6</b>	07	10	12	08	11	<b>9.6</b>
Group Mean		<b>7.7</b>	<b>8.4</b>	<b>8.2</b>	<b>8.0</b>	<b>7.1</b>	<b>7.9</b>	<b>10.0</b>	<b>10.3</b>	<b>11.9</b>	<b>10.1</b>	<b>11.5</b>	<b>10.5</b>

Individual & group mean of Control Group in the pre-test & post-test scores

**Table 4: Painting Activity (Experimental Group: Pre-Test & Post-Test)**

SN	NAME	Performance Indicators (Pre - Test)						Performance Indicators (Post - Test)					
		Line	Form	Texture	Shape	Tone	$\bar{X}$	Line	Form	Texture	Shape	Tone	$\bar{X}$
1	Inmate E1	12	10	12	11	07	<b>10.4</b>	18	15	14	18	14	<b>15.8</b>
2	Inmate E2	11	12	10	10	08	<b>10.2</b>	18	14	13	16	12	<b>14.6</b>

3	Inmate E3	09	10	09	10	08	<b>9.2</b>	16	13	16	13	16	<b>14.8</b>
4	Inmate E4	10	08	07	05	08	<b>7.6</b>	18	14	14	13	14	<b>14.6</b>
5	Inmate E5	12	11	08	07	10	<b>9.6</b>	16	13	16	18	13	<b>15.2</b>
6	Inmate E 6	10	12	10	11	08	<b>10.2</b>	17	14	12	12	15	<b>14.0</b>
7	Inmate E7	10	12	11	08	09	<b>10.0</b>	14	15	14	12	17	<b>14.4</b>
8	Inmate E8	11	13	08	10	11	<b>10.6</b>	16	17	14	16	16	<b>15.8</b>
9	Inmate E9	08	08	07	06	09	<b>7.6</b>	13	12	11	13	10	<b>11.8</b>
10	Inmate E10	07	07	08	05	08	<b>7.0</b>	12	12	11	18	16	<b>13.8</b>
11	Inmate E11	10	10	11	12	06	<b>9.8</b>	14	13	14	18	14	<b>14.6</b>
12	Inmate E12	06	08	07	06	08	<b>7.0</b>	10	08	10	16	17	<b>12.2</b>
13	Inmate E13	08	10	08	08	08	<b>8.4</b>	12	14	14	16	16	<b>14.4</b>
14	Inmate E14	06	08	06	07	08	<b>7.0</b>	13	13	18	16	18	<b>15.6</b>
15	Inmate E15	04	08	10	08	05	<b>7.0</b>	17	11	14	12	17	<b>14.2</b>
16	Inmate E16	05	06	08	07	05	<b>6.2</b>	09	08	13	12	13	<b>11.0</b>
17	Inmate E17	06	08	08	07	06	<b>7.0</b>	18	12	12	12	17	<b>14.2</b>
18	Inmate E18	04	06	04	07	07	<b>5.6</b>	18	11	08	13	10	<b>12.0</b>
19	Inmate E19	05	10	10	10	06	<b>8.2</b>	09	14	14	13	16	<b>13.2</b>
20	Inmate E20	08	08	07	11	05	<b>7.8</b>	13	13	12	18	09	<b>13.0</b>
Group Mean		<b>8.1</b>	<b>9.3</b>	<b>8.5</b>	<b>8.3</b>	<b>7.5</b>	<b>8.3</b>	<b>14.6</b>	<b>12.8</b>	<b>13.2</b>	<b>14.8</b>	<b>14.5</b>	<b>14.0</b>

Individual & group mean of Experimental Group in the pre-test & post-test scores

**Table 5:** Design Activity (Control Group: Pre-Test & Post-Test)

SN	NAME	Performance Indicators (Pre - Test)					Performance Indicators (Post - Test)						
		Harm-ony	variety	balance	Proportion	Rhythm	$\bar{X}$	harmony	variety	balance	proportion	Rhythm	$\bar{X}$
1	Inmate C1	08	06	10	10	10	<b>8.8</b>	11	09	12	12	09	<b>10.6</b>
2	Inmate C2	10	06	07	08	08	<b>7.8</b>	08	07	06	10	06	<b>7.4</b>
3	Inmate C3	08	10	06	08	09	<b>8.2</b>	09	11	08	13	07	<b>9.6</b>
4	Inmate C4	09	06	08	06	12	<b>8.2</b>	09	07	10	13	11	<b>10.0</b>
5	Inmate C5	08	11	09	10	10	<b>9.6</b>	10	10	08	06	06	<b>8.0</b>
6	Inmate C 6	10	12	12	14	12	<b>12.</b>	12	10	14	16	18	<b>14.0</b>
7	Inmate C7	04	09	10	08	06	<b>7.4</b>	08	11	10	10	09	<b>9.6</b>
8	Inmate C8	09	11	07	07	04	<b>7.6</b>	10	11	11	08	09	<b>9.8</b>
9	Inmate C9	10	11	08	12	08	<b>9.8</b>	10	08	14	13	07	<b>10.4</b>
10	Inmate C10	10	08	06	09	10	<b>8.6</b>	10	10	07	06	05	<b>7.6</b>
11	Inmate C11	10	06	10	08	06	<b>8.0</b>	17	10	08	13	10	<b>11.6</b>
12	Inmate C12	12	10	10	12	04	<b>9.6</b>	15	12	13	16	11	<b>13.4</b>
13	Inmate C13	08	09	12	10	06	<b>9.0</b>	10	11	13	10	10	<b>10.8</b>



14	Inmate C14	10	12	12	10	14	<b>11.6</b>	07	15	07	10	13	<b>10.4</b>
15	Inmate C15	08	08	10	12	06	<b>8.8</b>	09	10	11	13	07	<b>10.0</b>
16	Inmate C16	14	10	12	12	08	<b>11.2</b>	18	11	14	16	16	<b>15.0</b>
17	Inmate C17	13	12	11	11	09	<b>11.2</b>	15	14	10	13	08	<b>12.0</b>
18	Inmate C18	07	08	07	12	10	<b>8.8</b>	08	09	09	13	08	<b>9.4</b>
19	Inmate C19	06	14	10	10	06	<b>9.2</b>	10	13	16	12	10	<b>12.2</b>
20	Inmate C20	06	06	10	12	12	<b>9.2</b>	07	08	10	07	10	<b>8.4</b>
Group Mean		<b>9.0</b>	<b>9.3</b>	<b>9.4</b>	<b>10.1</b>	<b>8.5</b>	<b>9.3</b>	<b>10.</b>	<b>10.4</b>	<b>10.6</b>	<b>11.5</b>	<b>9.5</b>	<b>10.5</b>

Individual & group mean of Control Group under the pre-test & post-test scores

Table 6: Design Activity (Experimental Group: Pre-Test & Post-Test)

S N	NAME	Performance Indicators (Pre - Test)						Performance Indicators (Post - Test)					
		har- mony	var- iety	bala- nce	Propo- rtion	rhy- thm	$\bar{X}$	har- mony	var- iety	bala- nce	Propor- tion	rhy- thm	$\bar{X}$
1	Inmate E1	09	11	07	10	07	<b>8.8</b>	15	12	17	18	17	<b>15.8</b>
2	Inmate E2	11	12	10	10	08	<b>10.</b>	18	14	13	16	11	<b>14.4</b>
3	Inmate E3	09	10	09	10	08	<b>9.2</b>	16	13	16	13	10	<b>13.6</b>
4	Inmate E4	10	08	07	05	08	<b>7.6</b>	18	14	14	13	10	<b>13.8</b>
5	Inmate E5	12	11	08	07	10	<b>9.6</b>	16	13	16	18	09	<b>14.4</b>
6	Inmate E 6	10	12	10	11	08	<b>10.</b>	17	14	12	12	17	<b>14.4</b>
7	Inmate E7	10	12	11	08	09	<b>10.</b>	14	15	14	12	17	<b>14.4</b>
8	Inmate E8	11	13	08	10	11	<b>10.</b>	16	17	14	16	11	<b>14.8</b>
9	Inmate E9	08	08	07	06	09	<b>7.6</b>	13	12	11	13	10	<b>11.8</b>
10	Inmate E10	07	07	08	05	08	<b>7.0</b>	12	12	11	15	09	<b>11.8</b>
11	Inmate E11	10	10	11	12	06	<b>9.8</b>	14	13	14	18	17	<b>15.2</b>
12	Inmate E12	06	08	07	06	08	<b>7.0</b>	10	08	10	16	15	<b>11.8</b>
13	Inmate E13	08	10	08	08	08	<b>8.4</b>	12	14	14	16	18	<b>14.8</b>
14	Inmate E14	06	08	06	07	08	<b>7.0</b>	08	13	08	14	12	<b>11.0</b>
15	Inmate E15	04	08	10	08	05	<b>7.0</b>	17	10	14	16	15	<b>14.4</b>
16	Inmate E16	05	06	08	07	05	<b>6.2</b>	09	08	13	12	08	<b>10.0</b>
17	Inmate E17	06	08	08	07	06	<b>7.0</b>	12	14	14	12	17	<b>13.8</b>
18	Inmate E18	04	06	04	07	07	<b>5.6</b>	08	11	08	13	16	<b>11.2</b>
19	Inmate E19	05	10	10	10	06	<b>8.2</b>	09	14	14	16	16	<b>13.8</b>
20	Inmate E20	08	08	07	11	05	<b>7.0</b>	12	16	12	18	16	<b>14.8</b>
Group Mean		<b>8.0</b>	<b>9.3</b>	<b>8.2</b>	<b>8.3</b>	<b>7.5</b>	<b>8.3</b>	<b>13.3</b>	<b>12.9</b>	<b>13.0</b>	<b>14.9</b>	<b>13.6</b>	<b>13.5</b>

Table 7: Drawing Activity

Group	No. of inmates	Mean	S.D	DF	t-cal	t-crit	Decision
Pre-test	40	9.2	3.4	78	2.90	1.98	Significant
Post-test	40	14.12	4.2				

**Table 8: Painting Activity**

Group	No. of inmates	Mean	S.D	DF	t-cal	t-crit	Decision
Pre-test	40	8.0	2.9	78		1.96	Significant
Post-test	40	12.3	3.4	6.00			

**Table 9: Design Activity**

Group	No. of inmates	Mean	S.D	DF	t-cal	t-crit	Decision
Pre-test	40	8.8	2.5	78		1.96	Significant
Post-test	40	12.0	3.0		8.00		

In Tables 2, 4 and 6, 7, and 9 above, the level of prisoners' achievement in learning art among the experimental group was high in the post test session as compared to the pre-test of the same participants, this showed treatment effect in Drawing, Painting, and Design activities as the figures were 2.90, 6.00 and 8.00 respectively and were above the t-critical table value of 1.96 (Tables 7,8 & 9). Inmates E1, E8, E5 and E2 (Table 2) were outstanding as their drawing works exhibited great evidence of creativity, tints, shapes, balance and good interpretation of the subject matter. Inmates E1, E11, E8, E20 and E13 (Table 6) were most conspicuous with their fine designs that were worth breath taking. Inmates E1, E5, E8 and E14 (Table 4) carefully and creatively handled their painting activity as it displayed good elements of design. The performance of control group showed no significant level of achievement in both pre and post test due to non-treatment (Tables 1, 3 and 5). Post test scores continued to highlight Inmates E1, E8 and E11 as super stars in all the activities which

showed their talents as encouraging for better exploits. Even in the control group (Tables 1, 3 & 5) Inmates C16, C6 and C1 had edge over others in their self achievement.

97% of inmates had only Senior Secondary Certificates and below. The pace of learning to many participants was slow, but the interest shown by prisoners was encouraging. Semi-literate inmates having shorter sentences to serve were observed to lack proper concentration and complained a lot in learning new activities during the study. Some prisoners were only counting their time and nothing else attracted them any longer in prison. This observation was succinctly captured by Grant, (2006) that Short-term inmates, whose atrocities may be less dreadful, are less interested in investing their time in what an outside instructor has to offer.

All the three activities recorded significant achievement in learning art in the experimental group but insignificant learning took place in the pre and post test among the control group.

### **Discussion of findings**

Bio-data of inmates show age range from 19 - 49 years and educational attainment indicated 97.5% having Ordinary Level Certificates and below. These figures agree with Tanimu, (2010) that a typical convict in Nigeria prison is a semi-literate male in the prime of his youth.

The level of prisoners' achievement in learning art was high and encouraging. In the post test performance of drawing and painting, it was generally good, the result was better than that of pre test session. Inmate E1, E6, E11 & E16, outshine the rest of the participants with their well-articulated intricate two colour painting and pencil drawing. This finding correlates with the Pilot study on Art Therapy with Prison Inmates by Gussak (2004) that the pre and post-test sessions reflect significant change as the inmates who took part in the four-week pilot program improved. Eze (2005) affirmed this position when he discovered pupils in the experimental group achieving better results when he carried out a study on Promoting self-control of mathematics learning for pre-service primary teachers in Kano metropolis. There was progress in the performances in Drawing, Painting, and Design due to treatment.

The difficulties inmates encounter in learning art is illiteracy, semi-literacy, and anxiety to get released from prison took away their attention. In view of this, some prisoners who had short time to get discharged from

prison displayed laxity towards the programme. Short-term inmates, whose crimes may be less terrible, are less interested in investing their time in what an outside instructor has to offer (Grant, 2006).

The study found a significant difference in the study of art activities by prisoners in Makurdi prison. The inmates that took part in the study learned to develop the use and manipulation of art tools and art materials which are strategies for empowerment and self-sustainability in revenue generation. Generally, inmates prefer one art activity to the other as translated in the variation of test scores during the post-test session.

### **Conclusion**

There was need to conduct an empirical investigation into the inherent art potentials of inmates in Makurdi prison to determine the cause and effect of learning art by prison inmates. Art education empowers participants to become more conscious of their environment and to appreciate nature better through creation. The level of prisoners' achievement in learning art was high as the calculated t-values for Drawing, Painting and Design activities were high which showed treatment effect. Illiteracy contributed greatly to the dismal performance of some inmates in the experimental group, while anxiety of getting out of prison also discouraged some inmates from learning anything new during the study. Generally, Art education programme proved to be

successful in Makurdi Prison through empirical study; therefore, prison stakeholders should implement it as a major penal programme for empowerment and rehabilitation of inmates.

### Recommendations

- I. Art activities have proved successful in Makurdi prison therefore; prison authorities should implement art education as a major penal measure in rehabilitating inmates for self sustainability on release.
- II. Art educationist and professionals should volunteer to teach art in prison to help fight idleness and inculcate self-sustainable skills in prisoners through art education.

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## **Gender and Socio-Economic Influence on Eating Habits of Adult Residents in Akwa-Ibom State for Healthy Lifestyle**

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### **Abstract**

The study investigated gender and socio-economic influence on eating habits of adults' residents in Akwa-Ibom State for healthy lifestyle. Four research questions guided the study. Expost-facto design was used. The population was 3,902,051 (1,983,202 males and 1,918,849 females). Multi-stage sampling technique was used to select 420 respondents. Questionnaire was used for data collection. Mean was used for data analysis. Finding shows that males eat more of poultry items to look big, while females dwell more on fruits and vegetables, skip their meals to remain shapely among others on gender factors that influence eating habits of adult residents. The finding shows that high income status dwell more on convenience and read-to-eat food, always experiment with food and so on, while the low and medium status lack money to buy wholesome foods among others, The findings also revealed that exposing the adult residents to nutritional knowledge among others is one of the ways of bridging the gender influence on the eating habits of adult residents. Again, healthier foods and more nutrient ones costing less and easy access of markets as well as availability and variety of healthy foods in neighborhood stores among others are the ways of bridging socio-economic status influence on eating habits of adult residents. Based on the findings, it was recommended that there is need for a multidisciplinary approach targeting social-economic needs of the residents and need to improve their nutritional knowledge through extension services..

**Key words:** Gender, Socio-economic, Eating habits, Healthy lifestyle.



## Introduction

Health is the level of functional or metabolic efficiency of a living organism. It is the ability of individual to adapt and self-manage him/herself when facing physical, mental or social challenges. Health is a state of complete physical and social well-being. The most widely accepted definition of health is that of the World Health Organization constitution. It states "health is a state of complete physical, mental, and social well-being and not merely the absence of diseases or infirmity (Grad, 2002). More recent years, this statement has been amplified to include the ability to lead a socially and economically productive life.

Generally, the context in which an individual lives is of great importance for both health status and quality of their life. It is increasingly recognized that health is maintained and improved not only through the advancement and application of health science, but also through the efforts and intelligent lifestyle choices of the individual.

Lifestyles are patterns of behavioural choices made from the alternatives that are available to people according to their socio-economic circumstances and the ease with which they are able to choose certain lifestyle over others (Molarious, Berglund, Erickson, Lamber, Nordstrom and Friedman; 2007). According to Akpan (2005), lifestyles are behavior of choice which affects individual's fitness and health

status. It constitutes what one does or what one fails to do, such as exercising, reading, dancing, overeating, inactivity, alcoholism, drug abuse and indiscriminate sexual practices.

Healthy lifestyle on the other hand is defined as the interaction between choices and habits of individuals with different social location susceptibilities and exposure to risks. According to Fahey, Insel,& Roth (2009), a healthy lifestyle is an important predictor of future health, productivity and life expectancy. It has been found to reduce the factor which contributes to health risks. Healthy lifestyle include physical activity, proper nutrition, elimination of unhealthy behaviours, having regular medical check-up and maintaining good emotional health (Hoeger&Hoeger; 2010).

However, lifestyle of individuals are influenced by variety of external and internal factors based on the complex interaction between the individual and their immediate environment( Haveman, Lisette, Amrin&Burema; 2002). The social environment plays a decisive role in the individual's capacity to maintain healthy lifestyle and prevent diseases (Dahl &Elstad; 2001). The environment is considered as a crucial factor in the healthy being of individuals. Therefore, it is pertinent to note that for the good health to be maintained there must be good practices of healthy lifestyle such as good eating habits, regular exercise, and stress management and so on.

Good eating habit simply means what and how people eat, their selection of food, their way of getting food. It is a variety of foods that gives one the nutrients one needs to maintain one's health, feel good and have energy. The nutrients include protein, carbohydrate, fat, water, vitamins, and minerals. Good eating habits involve one eating breakfast always, eating fruits and vegetables, sitting down to eat at the table, drinking at least two bottles of water a day, exercise for an hour a day, take time to shop each week and so on. Therefore, good eating habits could differently influence the health of female and male individuals (i.e. gender variations). It is widely accepted that nutrients is not "just a fuel", but it is the most significant part of environment that actually introduce into our body system what it needs, it is also a relevant component of the cultural reference models. Model studies conducted in modern western societies report consistent associations between gender and specific foods where meat especially red meat, alcohol and hearty portion sizes are associated with masculinity, while vegetables, fruits, fish and sour dairy products (e.g yogurt, cottage, cheese) are associated with femininity (Sobal, 2005). However, the direction and magnitude of gender differences in health vary according to the symptom/condition and phase of life cycle. There are also gender differences in exposure to various lifestyle behaviour with men more

likely than women to smoke, consume alcohol, and have an unbalanced diet and to be overweight, while women are more likely than men to be physically inactive (Denton & Walter; (1999). In general, women have been frequently reported to engage in far more health-promoting behaviour than men and have healthier lifestyle pattern (Coourtenay; 2000, Gough & Conner; 2006). Gendered meaning of food therefore, serve important function in the performance of masculinity (Buerkle' 2009). The image of men as hunters with big appetites eating the animal they killed over a fire haunts our cultural notions of gender. Despite changes in the ideas of masculinity which includes more acceptance of the equality between men and women, men's eating behavior still remain a characteristic and is thought to be biologically driven, showing the differences in gender which goes beyond cultural change.

Another factor that has been found to have influence whether people are healthy or unhealthy is income and social status (i.e. socio-economic status of the individual involved). It involves the purchasing power of the individual which determines what one can go for or not. Generally, socio-economic statuses are classified into low, medium and high group for the purpose of this work. The level to which one belongs affects one's lifestyle and eating habits (i.e. the consumption pattern). However, a healthy lifestyle can help prevent for

example, weight gain, high blood pressure, arthritis, stress and so on. According to Blaxter (1990), the prevalence of most health-risk behavior is higher among those within lower social classes. Population studies show that there are clear difference in social classes with regard to food and nutrient intakes, low-income groups in particular have a greater tendency to consume unbalanced diets and have low intakes of fruit and vegetable (Delrala-Estevez, Groth, Johnsson, Oitersdorf, Prattala&Martinez-Gonzalez: 2000).

This implies that healthy choices today may influence health for the rest of one's life. It has been observed that many adult residents in Akwa-Ibom state engage in various unhealthy and risky lifestyle behaviours, such as inadequate nutritional intake, decreased sleep and exercise, increased smoking, substance abuse and other negative practices, which may produce long-term adverse effect on their health. These risks are associated with increased chances of contracting any of the four main non-communicable diseases (NCD), namely: cardiovascular diseases, diabetes, chronic lung diseases and cancer which affect individuals across all income groups in different countries and has also accounted for death of many.

### **Objectives of the Study**

The main objective of this study was to find out ways gender and socio-economic status influence the eating

habits of adult residents in Akwa-Ibom State. Specifically, the study;

- 1) Determined ways gender influence eating habits of adult residents in Akwa-Ibom State
- 2) Determined ways socio-economic status influence eating habits of adult residents in Akwa-Ibom State
- 3) Identified ways of bridging the gender influence on eating habits of adult residents in Akwa-Ibom State
- 4) Identified ways of bridging socio-economic status influence on eating habits of adult residents in Akwa-Ibom State

### **Research Questions**

- 1) What are the ways gender influence eating habits of adult residents in Akwa-Ibom State?
- 2) What are the ways socio-economic status influence eating habits of adult residents in Akwa-Ibom State?
- 3) What are the suggested ways of bridging gender influence on eating habits of adult residents in Akwa-Ibom State?
- 4) What are the suggested ways of bridging socio-economic influence on eating habits of adult residents in Akwa-Ibom State?

### **Methodology**

*Research Design:* The study adopted expost-facto design because the researcher cannot manipulate the effect on the dependent variable but

just obtain the effect already existing in the natural course of events.

**Area of the Study:** The research area was Akwa-Ibom State, one of the 36 States in Nigeria with 31 Local Government Areas, and Uyo as the State Capital. The State is located on the coastal south southern part of the country. The major ethnic groupings in the state are Ibibio, Annang and Oron. Ibibio language is the major language spoken in the state with a few dialectical differences. They are also predominantly civil service state with the Government being the major engine of growth. Others outside the public sphere are mainly farmers and fishermen in the river line areas with few involved in local crafts such as raffia work, pottery and so on. Akwa-Ibom is also a major crude oil producing state (AK-SEEDS, 2004)

**Population of the Study:** The population of the study consisted of 1,983,202 males and 1,918,849 females in Akwa-Ibom totaling 3,902,051. (Federal Republic of Nigeria Official Gazette, 2009)

**Sample/sampling Technique:** Multi-stage sampling technique was used to select 420 adult residents in Akwa-Ibom State, consisting of 210 adult males and 210 adult females resident in Akwa-Ibom State. In the first stage, two senatorial zones out of three were selected for the study. The second stage involved proportionate distribution of the sample size into all the 21 local government areas that make up the selected senatorial zones. Twenty (21) villages were selected

from each of the local government areas. The last stage involved purposely sampling of 20 (10 adult males and 10 adult females) respondents from each of the selected villages to give the total of 420 respondents. They are purposely selected because most of them are income earners

**Instrument for Data Collection:** Questionnaire was the instrument used for data collection. It had a four point response scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). Three lecturers were used to validate the instrument. Two from the department of Home Economics/ Hospitality Management and Tourism, Michael Okpara University of Agriculture, Umudike and one from the department of Home Economics College of Education AfahaNsitAkwa-Ibom State. The reliability of the instrument was ascertained using Cronbach's Alpha Co-efficient, and a reliability index of .86 was obtained showing that the instrument was highly reliable.

**Method of Data Collection:** Copies of the questionnaire were distributed to the respondents with the help of two research assistants. A period of two weeks was given, of which at the end, 400 the copies were well filled and returned ensuring 95% return rate.

**Method of Data Analysis:** Mean was used to analyze all the research questions. A mean of 2.50 in the four point rating scale was "Agree"

otherwise any mean below 2.50 was regarded as “Disagree”

**Findings:** The following findings were made based on the research questions.

**Results:**

Data collected for the study are presented in Tables 1 to 4.

**Table 1:** Mean responses of respondents on ways gender influence eating habits of adult residents in Akwa-Ibom State

S/N	Items	X <sub>1</sub>	X <sub>2</sub>	X <sub>g</sub>	Remark
1	Eat meat and poultry items to look big	3.80	2.20	3.0	Agreed
2	Eat fruits and vegetable to remain fresh	2.50	3.56	3.03	Agreed
3	Eat in-between-meals as part of daily activities	3.00	2.54	2.77	Agreed
4	Do not eat anything except water after 7.00pm	2.22	3.40	2.81	Agreed
5	Can eat any time of the day	3.68	2.02	2.85	Agreed
6	Skips meal to remain shapely	2.00	3.84	2.92	Agreed
7	Will always read and ask questions about what one consumes.	2.52	3.48	3.00	Agreed
8	Consumption of anything food	3.48	2.00	2.74	Agreed
9	Do not mind the meal size one eat at a sitting	3.56	2.48	3.02	Agreed
10	Can sit and eat anywhere	3.45	2.00	2.72	Agreed

**Key:** X<sub>1</sub>= mean of males, X<sub>2</sub>= mean for females, X<sub>g</sub>= grand mean.

Table 1 shows that the respondents were of the view that gender really influence their eating habits. As can be seen from the table, the entire grand mean had mean rating above the cut-off point of 2.50

**Table 2:** Mean responses of respondents on ways socio-economic status influence the eating habits of adult residents in Akwa-Ibom State

S/N	Items	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>g</sub>	Remark
1	Eats more with friends and family members than eating alone	2.56	3.00	2.78	2.78	Agreed
2	Lack of money to buy wholesome foods	3.46	2.68	1.82	2.65	Agreed
3	Lack of knowledge on diet and health	3.00	2.64	2.00	2.54	Agreed
4	Too much conflicting information on diet and health	2.64	2.68	3.00	2.77	Agreed
5	Non availability of the kind of food needed in my area	2.23	2.45	3.44	2.70	Agreed
6	Eating habits are influenced by friends	2.00	2.01	3.04	2.35	Disagreed
7	Lack of proper cooking facilities in my home	3.86	3.00	1.42	2.76	Agreed

8	Dwelling more on convenience and ready-to-eat food	1.00	2.22	3.02	2.08	Disagreed
9	Lack of transportation	3.66	2.45	1.00	2.37	Disagreed
10	Lack of time to buy and prepare food	2.34	2.32	3.46	2.70	Agreed
11	Lack of motivation and cooking skill	2.00	2.35	3.42	2.59	Agreed
12	Always experimenting with food	1.24	2.24	3.66	2.38	Disagreed

**Key:**  $X_1$ =mean of low status,  $X_2$ = mean of medium status,  $X_3$ = mean of high status,  $X_g$ = grand mean.

Table 2 above presents the mean response of respondents of low, medium and high socio-economic status on the influence of their status on their eating habits. A look at the table shows that out of 12 items raised, 8 items were in agreement with the respondents, while 4 were not.

**Table 3:** Mean responses of respondents on ways of bridging gender influence on eating habits of adult residents of Akwa-Ibom State.

S/ N	Items	$X_1$	$X_2$	$X_g$	Remark
1	Exposing the residents to nutritional knowledge through seminars and workshops	3.68	3.46	3.67	Agreed
2	Stopping placing value judgment on what people do and do not eat provided they are not harmful	3.72	3.80	3.76	Agreed
3	Encouraging the residents to see that consumption of food is far beyond mere sustenance.	3.24	3.62	3.43	Agreed
4	Embarking on literacy campaign for the residents through church and village meetings	3.68	3.38	3.43	Agreed
5	Discouraging the fallacy that some class of food is exclusively reserve for males or females	3.20	3.32	3.26	Agreed

**Key:**  $X_1$ = mean of males,  $X_2$ = mean of females,  $X_g$ = grand mean

Table 3 shows that the grand mean of male and female indigenes of Akwa-Ibom State ranged from 3.43 – 3.76. This shows that all the grand means are above 2.50 indicating that the respondents agreed that all the items are ways of bridging gender influence gap on their eating habits.

**Table 4:** Mean responses of respondents on ways of bridging socio-economic status influence on eating habits of adult residents of Akwa-Ibom State

S/ N	Items	$X_1$	$X_2$	$X_g$	Remark
1	Easy access of markets as well as availability and variety of healthy food in neighborhood stores.	3.44	3.76	3.60	Agreed
2	Healthier foods and the more nutrient ones should cost less	3.86	3.88	3.77	Agreed



3	Bringing down the cost of transportation in the state	3.84	3.80	3.82	Agreed
4	Indigenes depending more on domestically produced food	2.74	2.68	2.71	Agreed
5	Individuals and families finding a way of generating income in support of family feeding	3.56	3.18	3.37	Agreed
6	Finding a way of preserving seasonal foods for indigenes to still access them when out of season.	2.74	3.02	2.88	Agreed

**Key:**  $X_1$ = mean of males,  $X_2$ = mean of females,  $X_g$ = grand mean

Table 4 above shows that all the items raised are ways of bridging socio-economic status influence on eating habits of Akwa-Ibom indigenes. This also shows that all the grand mean are above 2.50 and above.

#### **Discussion of the Findings**

The findings of this study in table 1 established that there is gender influence on eating habits of Akwa-Ibom indigenes. From the mean responses of males and females, there is establishment that females eat more of fruits and vegetables, they are selective in what they consume, they are so conscious of their shape by skipping some meals; they ask lots of questions about what they eat and so on. The findings also shows that their male counterpart eat more of meat and poultry items, they do not mind their meal size, they can sit and eat anywhere and so on. These findings are in line with Sabal (2005) who reported from his findings that there is consistent association between gender and specific foods where meat especially red meat, alcohol and hearty portion size are associated with

masculinity while vegetables, fruits, fish and sour dairy products are associated with femininity. It is also in line with Courtenay (2000), Gough & Conner (2006) reports which stated that women have been frequently engaged in far more healthy promoting behavior than men and they have healthier lifestyle pattern.

Findings in table 2 indicated that socio-economic status of Akwa-Ibom indigenes influence their eating habits. Out of the 12 items raised, 8 from the result of grand mean were in agreement with the respondent's opinion while 4 items were not. But from the individual means of low, medium, and high socio-economic status, there is great demarcation from what influence low, medium and high socio-economic class of indigenes. From the mean responses of low and medium class, what influence them are almost the same, while the mean response of high class is quite different. The findings show that lack of money to buy wholesome food, lack of proper cooking facilities in the home, lack of transportation, lack of knowledge on diet and health among

others are what influence low and medium. While lack of time to buy and prepare food, non-availability of the kind of food needed in my area, dwelling more on convenience and ready-to-eat food among others are what influence the high class. These findings are in line with population studies report which shows that there are clear differences in social classes with regard to food and nutrient intakes, low-income groups in particular have a greater tendency to consume unbalanced diets and have low in-take of fruits and vegetable (Delrala-Estevéz et-al, 2000). These findings also implies that the importance of food and eating extend well beyond the need of covering "physiological needs", playing a role in identity expression, communication, social interaction as well as in delineating status and gender roles. Therefore, eating behavior is likely to be vulnerable to various social influences including the desire to respond in a socially-desired manner (Herman, Roth and Polivy; 2003)

Table 3 findings showed that the respondents agreed to all the items raised as ways of bridging the gender influence on the indigenes of Akwa-Ibom State. Both males and females have mean responses above the cut-off point. They agreed that exposing indigenes to nutritional knowledge, avoiding placing value judgment on what people do and do not eat, seeing that consumption of food is far beyond mere sustenance, embarking

on literacy campaign for the indigenes are the sure ways of bridging the gap.

Finally, table 4 x-rayed ways of bridging socio-economic status of indigenes of Akwa-Ibom State. The males and their females' counterparts agreed to all suggested items. They agreed that easy access of market as well as availability and variety of healthier foods and nutritious food at a price the low class can afford, bringing down the cost of transportation, people depending on domestically produced food, families and individuals finding a way of generating income to support the family feeding income and improving storage and preservation skills for steady supply of seasonal foods will go a long way to bridge the gap.

### **Conclusion**

From the findings of the study, the researchers conclude that eating habits of indigenes of Akwa-Ibom are not only based upon individual preferences, but are constrained by circumstances that are social economical and gender in nature. The finding reveals that adult males eat poultry items a lot while their female counterparts eat more of vegetables and fruits; skip meals to retain their shape among others. Implying that gender has influence on the residents eating habits. Socio-economic status is also influencing them because of class consciousness. But there is need to give the adults' residents seminars and workshops on nutrition education, advising them on how to

generate income in support of family feed, depending on domestically produced foods among others as ways of bridging gender and socio-economic influence on eating habits of adult residents of Akwa Ibom State.

### Recommendation

From the findings of the study, it is hereby recommended that

- 1) There is need for a multidisciplinary approach targeting social-economic need of the adult residents
- 2) There is need to improve the nutritional knowledge of the residents, through teaching them various ways of doing that through their village and church meetings by extension workers

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## **Professional Self - Development Opportunities Available to Teachers' in Public Secondary Schools in Ebonyi State**

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### **Abstract**

The study examined professional self-development opportunities available to teachers' in public Secondary Schools in Ebonyi state. A sample size of 612 teachers representing 20% of the public Secondary School teachers in the zones were selected through stratified random sampling technique. Two research questions and two hypotheses were posed. The design of the study was descriptive survey. Data were collected with questionnaire. Mean and z- test used for data analysis. Findings of the study revealed that some teacher's professional self-development opportunities like workshops on the use of Information and Communication Technology (ICT) in teaching, conference attendance and professional seminars on education are not readily available to teachers' in the state among others. It was recommended that regular professional self-development opportunities should be regularly organized for public Secondary School teachers in the state.

**Keywords:** Professional, Self-development, Opportunities, Teachers, Secondary Schools

### **Introduction**

The role of school teachers in actualizing the aim and objectives of the educational system in the country cannot be over emphasized. Teachers are the ones trained with the appropriate level of competence that is capable of turning out into the society students who have acquired literacy,

numeracy, manipulative, and communicative skills. In recognition of the importance of the teacher, Federal Government of Nigeria (FGN, 2013) spelt out in the National Policy on Education the goals of teacher education. From the goals of the teacher education, it can be seen that teachers are the bed rock of any

educational system and that is why there has been continuous clamoring for effective and efficient teachers in the educational system. This is buttressed by the fact that no educational system can rise above the level of its teachers (Thompson, 2015). Consequently bringing the teacher into a prominent role, there is need to improve his/her efficiency. These enormous responsibilities leave the teacher with the challenge of striving to meet the high expectations of the various stakeholders in education. Teachers are asked to teach in increasingly multicultural classrooms; to place greater emphasis on integrating students with special learning needs in their classrooms. Education systems therefore seek to provide teachers with opportunities for professional self-development in order to maintain a high standard of teaching and to retain a high-quality teacher workforce. It therefore becomes imperative that continuing professional development programmes should be provided to the teachers.

Teachers professional development is a process in which the teacher is equipped to move effectively in teaching (Garuba in Nwichi 2011). The programmes are meant to update the knowledge of the teachers and enhance their professional status and competence. Through teachers professional development programmes, innovations in methodology, curriculum contents, improvisation of resource materials, administrative,

supervisory and evaluation are made known to teachers to improve their competence and effectiveness. According to OECD (2009) Professional development are activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher. Villegas-Reimers (2013) defined it as the development of a person in his or her professional role. More specifically, he opined that teacher development is the professional growth a teacher achieves as a result of gaining increased experience and examining his or her teaching systematically.

Teachers' professional self-development opportunities available for teachers include: in-service training, seminars, conferences, and team teaching (Olaniyan & Luccas, (2008). The Organization for Economic Cooperation and Development (OECD, 2010) listed informal dialogue to improve teaching, courses and workshops, reading of professional literature, Education conferences and seminars, professional development network, individual and collaborative research, mentoring and peer observation and observation visit to other schools and qualification programmes as some of the professional self-development opportunities available for teachers.. Therefore, training is relevant to teachers' professional development. Staff professional development programmes are therefore aimed at professional and personal

development of the teachers in the school system.

When it comes to professional development, teachers have often relied on several of the following elements: Attending conferences and seminars, Subscribing to journals, joining professional organizations, reading education books, connecting with mentors and colleagues, Hearing guest speakers, and Taking courses. Each of the above traditional methods is still extremely worthwhile. But at the same time, they come with certain limitations. They cost money, are limited to certain times and places, deal with content that may or may not pertain, and connect teachers to a restricted number of resources

Olaniyanin and Nwichi (2011) presented the various types of continuing professional development programmes as, on the job training/coaching, Induction/ orientation, Apprenticeship, Demonstration, Vestibule and Formal Training. Despite the various teachers professional self-development programmes, so many teachers in Ebonyi State have not been participating in professional development programmes since their graduation and appointment as teachers, while it took others a long time to do so. Nwabueze (2010) observed that some teachers that entered into the teaching profession with Nigerian Certificate in Education retired with the same qualification. He further observed that workshops and seminars organized

for teachers in the state in recent times, recorded poor attendance of teachers.

Teachers' should see professional self-development as relevant to their professional self-development in terms of improving their professional competences, improving their subject mastery and updating their knowledge. More so as public secondary school students' record poor results in West African Senior School Certification Examination (WASSCE) and National Examination Council (NECO), school administrators and teachers are expected to embrace professional self-development programmes to enhance their performance and at the same time achieve educational goals and reduce financial wastage incurred in registration of WASSCE and NECO (Garuba, 2008).

Whereas it appears obvious that teachers need Professional Development and substantial research seem to have confirmed this; not much importance seem to be attached to professional development of teachers in Nigeria. For most teachers, training ends as soon as they graduate and no opportunities exist for updating their knowledge and skills and ultimately their classroom practice. In-service training, workshops and seminar are very few and irregularly organized (Nwabueze, 2010). There is even the poor understanding of the importance of continuous retraining of teachers on the part of Federal, State and Local Government Areas. Indeed funds are rarely allocated and where available,



funds are inadequate and often misused.

Teachers' professional self-development opportunity has become one of the most common central concerns in educational studies over the past several decades. As a result, ongoing research conducted in many countries has shown that professional development activities within and beyond the school day affect teachers positively (Carver & Katz, 2004; Easton, 2008; ; McCaughtry, Martin, Kulinna, & Cothran, 2006; McLaughlin & Talbert, 2006; 2001). Hirsh (2001) has consistently found that the professional development of teachers is the best way to affect their quality of teaching.

In other words, planned development programmes provide a means of maintaining acceptable level of employee and organization performance. Specifically, orientation contributes to organizational effectiveness by facilitating the socialization process so that new employees become integrated into the organization as soon as possible. The sooner the employees feel comfortable in the organization, the sooner they can be productive. Other forms of training and development provide employees with the knowledge and skill they need to remain qualified for their jobs in the face of changes and new challenges. Such challenges include keeping abreast of current developments in one's field as related to new responsibilities, performance

standards, equipment, or work methods. The effectiveness of staff development programmes in schools entails consideration of improvements in students learning in line with modern educational improvement efforts.

This is the reason behind the formation of the opinion by experts and stakeholders in education that provision of quality education cannot be achieved without competent and qualified teaching personnel. According to Quattlebaun (2012), Teacher development in recent times has moved beyond simple in-service workshops and has expanded into a more robust system of continuing education. In order to advance in their careers, therefore, teachers should seek out professional development opportunities which are ongoing and aligned with standards and assessments. In Ebonyi state many secondary school teachers have been teaching with the same qualification for many years without improving themselves professionally. Bayar (2014) observed that many teachers lack proper preparation for their assigned teaching positions. Most educational capacity building programmes in the state recorded poor attendance. Most of the teachers are not current with the teaching methods therefore require retraining programmes too to enable them effectively perform their duties and to keep abreast with the modern technological innovations and trends in the teaching profession. These

problems need to be addressed if the teachers must be the most resourceful persons for the promotion of quality education in the state. This work aims at establishing the types of professional self-development opportunities available to public secondary school teachers in Ebonyi state.

### **Purpose of the Study**

The major purpose of the study was to investigate the professional self-development opportunities available to public secondary school teachers in Ebonyi State. Specifically the study:

1. identified the types of professional self-development opportunities available to public secondary school teachers in Ebonyi State.
2. determined the reasons why public secondary school teachers undertake professional self-development opportunities in Ebonyi State.

### **Research Questions**

1. What types of professional self-development opportunities are available to public secondary school teachers in Ebonyi State?
2. What are the reasons why public secondary school teachers undertake professional self-development opportunities in Ebonyi State?

### **Methodology**

*Area of the study:* The area of study was Ebonyi state, Nigeria

*Design of the Study:* A descriptive survey design was adopted for the study.

The design was found appropriate because it involved a description of already existing phenomena.

*Population for the study:* The population comprises of 3062 teachers currently serving in the 203 public secondary schools of Ebonyi State. The State has three education zones of Abakaliki, Afikpo and Onueke.

*Sample for the study:* By a simple random sampling technique, a sample size of 612 teachers which is 20% of the total population was selected.

*Instrument for data collection:* A self-designed questionnaire tagged "Professional Self-Development Opportunities Available to Teachers in Public Secondary Schools Questionnaire (PSOATPSSQ)" was used to elicit information from the respondents on the effect of professional development of public secondary school teachers in Ebonyi State as perceived by urban and rural teachers.

*Reliability of instrument:* The researcher used a test retest method to determine the reliability of the questionnaire. 20 copies of the questionnaire were administered to 20 teachers not used for the study in an interval of two weeks. Thereafter, the responses were collated and Pearson product correlation moment used to calculate the reliability co-efficient which stood at 0.86.

*Method of Data collection:* The instrument was administered on the

teachers with the help of 5 research assistants. A total of 592 respondents correctly filled and returned the questionnaire.

**Method of Data Analysis:** Data collected were analyzed using the mean score and z-test. Mean score of 2.50 and above was accepted while mean score below 2.50 was rejected.

The hypotheses were tested using z-test statistics at 0.05 level of significance.

Professional Development Programmes available to public Secondary School teachers in Ebonyi State

**Table 1:** Mean ratings of the types of professional self-development opportunities available to public secondary school teachers' in Ebonyi state.

S/N	Professional self-development opportunities available to public secondary school teachers	Urban X	Rural X	XX	Decision
1	Sandwich education programmes (B.ED)	3.17	3.58	3.38	A
2	Study leave opportunities	2.45	2.86	2.66	A
3	Workshops on use of ICT in teaching	1.70	1.25	1.48	N/A
4	Conference attendance	1.80	1.93	1.87	N/A
5	Professional seminars on education	1.64	1.65	1.65	N/A
6	Reading of professional literature	1.12	1.30	1.21	NA
7	Mentoring	1.63	1.64	1.64	N/A
8	Coaching	1.42	1.62	1.52	N/A
9	Apprenticeship	1.365	1.81	1.73	N/A
10	Demonstration	2.13	1.32	1.73	N/A
11	Induction	1.64	1.21	1.43	N/A
12	Orientation	2.31	2.00	2.16	N/A
13	Post qualification courses	1.21	1.40	1.31	N/A

A = Available, NA = Not Available

Table 1 shows the mean scores of the types of professional self-development opportunities available to public secondary school teachers in Ebonyi State. Urban and rural teachers agreed on items 1 and 2 with the aggregate mean scores 3.38 and 2.66 greater than

the criterion mean of 2.5. They disagreed to items 3 to 13 which have their mean scores lower than the criterion mean of 2.5. Therefore, professional self-development opportunities like workshops on use of ICT in teaching, conference

attendance, Reading of professional literature, Mentoring, Coaching, Apprenticeship, Demonstration, Orientation, Post qualification courses and professional seminars on education are not readily available to secondary school teachers in Ebonyi State.  
Reasons why public secondary school teachers' undertake professional self-development opportunities in Ebonyi state.

**Table 2:** Mean Rating of Urban and Rural Teachers on the Reasons why Public Secondary School Teachers' Undertake Professional Self-Development Opportunities in Ebonyi state.

S/ N	Reasons for Professional Self-Development Opportunities	$X_u$	$SD_u$	$X_R$	$SD_R$	XX	Decision
1	In-service training produces highly motivated and efficient classroom teachers.	3.20	1.55	3.16	1.52	3.18	Agreed
2	It exposes the teacher to new technologies and methods of teaching	3.22	1.55	3.12	1.52	3.17	Agreed
3	It helps the teachers to cultivate the right attitude to work	3.09	1.56	3.62	1.49	3.35	Agreed
4	It enhances quality teaching performance	3.02	1.56	2.58	1.55	2.80	Agreed
5	It helps to improve on the qualification of the teachers.	2.98	1.57	2.86	1.53	2.92	Agreed
6	It helps teachers to learn how to operate new learning resources like ICT gadgets.	3.20	1.55	2.88	1.53	3.04	Agreed
7	Regular participation of teacher in workshops and seminars expose the teachers to changes and innovations in school management.	3.18	1.55	3.19	1.52	3.19	Agreed
8	Improvement of teachers practices results in the students' performance	3.17	1.55	3.02	1.53	3.10	Agreed
9	Teachers' professional self-development programmes contribute to teachers' development and improvement.	3.13	1.56	2.98	1.52	3.06	Agreed

$X_u$  = Mean for urban Teachers;  $SD$  = Standard Deviation for urban teachers;  $X_R$  = mean for rural teachers;  $SD_R$  = standard deviation for rural teachers;  $XX$  = cumulative mean.

Table 2 shows the mean scores of urban and rural teachers on the reasons why public secondary school teachers' undertake professional self-development opportunities in Ebonyi state. The aggregate mean of 3.13 for the urban teachers and 3.04 for rural teachers are greater than the criterion mean of 2.50. Therefore, it can be deduced that the effect of professional development programmes include: highly motivated and efficient classroom teachers, exposing teachers to new technologies and methods of teaching, cultivation of right attitude to work, enhances quality teaching performance, improves on the qualification of the teachers and also helps teachers to learn how to operate new learning ICT resource-like gadgets, exposes the teachers to changes and innovations in school management and contributes to teachers' development and improvement.

### **Discussion of findings**

The findings of the study revealed that some teacher's professional self-development opportunities like workshops on the use of Information and Communication Technology (ICT) in teaching, conference attendance and professional seminars on education are not readily available for teachers in Ebonyi State. The study revealed sandwich education programmes (B.ED) and study leave opportunities only as the professional self-development programme available to teachers in the state. Teachers should

explore other self -development programmes available for teachers. This statement is supported by OECD, (2010) that listed informal dialogue to improve teaching, courses and workshops, reading of professional literature, Education conferences and seminars, professional development network, individual and collaborative research, mentoring and peer observation and observation visit to other schools and qualification programmes as some other professional self-development opportunities available for teachers. Olaniyan and Lucas (2008) also listed in service training, seminars, conferences, workshops, extension programmes and study leave as types of professional self-development opportunities available for teachers' development. Sandwich education which is professional self-development opportunity available for those who are engaged with full time teaching job most of the year and who can only go for such training during the long vacation should only be the self - development programme together with study leave to be explored by teachers in other to improve on their teaching skills.

Non-attendance to self - development programmes in the state will mean using the teaching skills they learned in the pre-service courses they attended and also be lacking information about new policies and modern methodologies of teaching. This statement is in agreement with the finding of Nwaebueze (2010) when

he observed that some teachers that entered into the teaching profession with Nigerian Certificate in Education retired with the same qualification. Teacher development in recent times has moved beyond simple in-service workshops and has expanded into a more robust system of continuing education (Quattlebaun, 2012). In order to advance in their careers, therefore, teachers should seek out professional development opportunities which are ongoing and aligned with standards and assessments. New skills and methods of teaching are emerging every day.

The study also revealed the reasons why public secondary school teachers undertake professional self-development opportunities available to teachers. They know that it is meant to enhance their services and performance. Through the programmes the teachers' are exposed to new teaching methods, cultivate right attitude to work, improve on their qualification, and learn how to operate new learning resources like ICT gadgets. Both the urban and rural teachers agreed on these points. These are in line with the findings of Mohammed (2006) and Jegede (2004). Both agreed that the reasons why teachers undertake professional self-development opportunities include the need for the acquisition of new skills, knowledge and new roles, enhance the quality teaching performance and improvement on the qualification of the teachers. It is obvious that the journey from being a

novice teacher to becoming an expert teacher will be facilitated quickened by a well-planned professional self-development opportunities. Therefore, in view of the overwhelming importance of professional self-development opportunities available to teachers in the state, it is recommended that a regular professional self-development opportunity be organized and also made compulsory for every serving teacher to attend if the nation's educational goals must be attained which the teacher is at the hem of affair.

### **Conclusion**

Based on the results of this study, it is obvious that there are limited professional self-development opportunities available for teachers' in Ebonyi State public secondary schools. These are Sandwich education programmes (B.ED) and Study leave opportunities. The rationale for teachers' professional self-development opportunities is to update and upgrade the teachers' knowledge and skills with particular reference to their areas of specialization and teaching skills, improve the quality of teachers which will be reflected in the quality of our education. Therefore to achieve the education goals of our nation as stated in the national policy on education, teachers who hold the key to sound education must from time to time be exposed to professional development programmes for better performance.



## Recommendations

Based on the findings, it was recommended that:

1. Government should create enabling environment to enable teachers utilize the opportunities offered by these self-development programmes.
2. Teachers' should regular participate in professional self-development opportunities to continually update their knowledge and acquire new skills.
3. Participation in professional self-development opportunities should be part of the criteria for promotion of teachers in the state.
4. Teachers should not just be increased but be regularly paid since most of the teachers development programmes are on self-sponsorship.

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## **Eating Disorder among Female Undergraduate Students and Ameliorating Strategies: Case Study of University of Nigeria, Nsukka**

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### **Abstract**

This study is centered on eating disorder among female University Undergraduates and its ameliorating strategies in University of Nigeria. Four research questions and four null hypotheses guided the study. The study adopted case study research design. The population for the study was 4,561 second year female students of the University as at 2014/2015 session. A purposive sample of 456 was drawn for the study. Data was analyzed using mean scores, standard deviation and t-test at 0.05 level of significance. Results showed that social, financial and health problems were associated with eating disorder syndrome among the respondents. These include, among others feeling guilty after eating and feeling terrified about overweight; taking laxatives or self induced purging after eating food and spending more money on health care. The findings further showed that the female students tend to exhibit extreme loss of weight and experience irregular menstrual period due to poor eating habits. It was recommended that talking it over with parents, teacher/ lecturer or counsel on how to improve the eating plan, and restore lost weight is important. The female undergraduate students should also not skip breakfast and stick to a regular eating schedule among others.

**Key words:** Eating Disorder, Undergraduates, Health, Problems.

## **Introduction**

Eating disorder refers to abnormal eating habits which are characterized by inadequate or too much of food intakes. According to Hudson, Hiripi, Pope and Kessler (2007) eating disorder is a condition of abnormal eating habits that may involve either insufficient or excessive food intake to the detriment of an individual's physical and mental health. An individual can decide to be in this condition or as a result of body's need for food. This means that it can be a voluntary idea of an individual to be in that condition or the body's food consumption need. According to Winter (2004) eating disorder is a condition which affects an individual's eating habits either as a result of their own doing (self inflicted), or as a body reaction to the consumption of food.

There are different types of eating disorder. Duyff (2004) categorized eating disorder into three main types. They include Anorexia nervosa (AN), Bulimia nervosa (BN), and Binge eating disorder. Anorexia nervosa is characterized by eating little or refusal to eat or ignores feeling of hunger and obsessive fear of gaining weight and unrealistic perception of current body weight (Sokol, 2000). Bulimia nervosa (BN) according to Uher and Treasure (2005) is a disorder characterized by recurrent binge eating or eating very large amount of food at a time followed by compensatory behaviors such as purging (self induced), vomiting, excessive use of laxatives or excessive exercise in an attempt to

prevent weight gain. The third is binge eating disorder characterized by excessive eating. In binge eating, the individual binges (excessive consumption) but does not purge or exercise. The individual may be overweight or maybe between losing and gaining weight.

Some eating disorders have similar characteristics. According to Hudson (2007) Anorexia and Bulimia are very similar because both disorders are conscious of gaining weight. They prefer to lose weight. The three types of eating disorder all involve unhealthy eating pattern that begin gradually and builds to the point where a person is unable to control them. Individuals that are involved in eating disorders are mostly young girls. Winters (2004) noted that eating disorder occur mainly in teens and young adult, especially females. Eating disorders are common in Nigeria; one or two out of every one hundred students may be found with one type of eating disorder. There are evidences of negligence of healthy eating behavior by many female undergraduate students of the University of Nigeria, Nsukka. This condition could be attributed to peer group influence, psychological misconception, ego, affluence or poverty among students. The students are in the habit of expressing affluence through eating. The affluent ones tend to eat as it appeals to their sight in negligence of expected eating schedule or better described as eating in-between meal time. On the other

hand, the indigent students find it difficult to eat as and when due. Some students follow the food selection pattern of their peers. Okoli, (2009) opined that every year at least ten out of every hundred undergraduates students that are hospitalized developed health problems associated with eating disorders.

Eating disorder is found mostly among young girls. Bailer (2004) observed that people who indulge in eating disorder are mostly teenagers especially girls. It is obvious that teenagers of this age bracket in Nigeria are likely to be in upper level of secondary education and tertiary institutions of learning. Sometimes, due to academic pressures and peer group influence, students may skip eating foods at appropriate time. When they eat later in the day, some tend to over eat while others lose appetite after snacks consumption. This type of eating status might precipitate weight gain or loss. Bailer (2004) again noted that it is completely normal and necessary for girls to gain some additional body fat during puberty, some respond to this change by becoming very fearful of their new weight. They might mistakenly feel compelled to get rid of it any way they can.

The two campuses (Enugu and Nsukka) of the University of Nigeria, Nsukka have greater number of young female students than males with various eating disorder behavior, some of which result to health challenges. Studies have shown that

university students skip breakfast, some consume unnecessary greasy based and fattening foods, some sugary foods and alcohol, others inadequate meals (Winter, 2004) and (Okoli, 2009). Hainer (2006) opined that it is not difficult to see why some teens develop a negative view of themselves. Celebrity teens and athletes conform to the "Nollywood Ideal". Moreover, eating disorders may run in families. This shows that eating disorders may be genetically or self inflicted.

Apart from keeping shape to look like models, some financial problems were acknowledged to contribute to eating disorder in some female students. Lack of money force some female students to fast and skip meals. Studies show that this happens more among students from low economic group (Matthew, 2007). Eating disorders are serious medical illnesses (Frederich, Raymond & Pomeney, 2002). They often go along with other problems such as stress, anxiety, depression and substance use. Eating disorders can lead to the development of serious physical health issues such as heart conditions or kidney failure. Frederich *et al* (2002) noted that someone whose body weight is at least 15% less than the average weight for that person's height may not have enough body fat to keep organs and other body parts healthy. In severe cases, eating disorders may lead to severe malnutrition and death, if not curbed.

From the available records and observation from the University of Nigeria Medical centre, there was substantial evidence that many of the students hospitalized after having running stomach, stomach upset and in severe cases of diarrhea were later proved to be individuals in a consistent state of eating disorder. The above evidences, therefore, creates a lot of concern on an average adult in the University to fashion out measures that will re-orient students towards a better eating habit in the campuses. There seem to have been little or no studies carried out to reduce the incidence arising from eating disorder among female undergraduate students in the University of Nigeria, Nsukka and Enugu campuses. Based on this background, the researcher deemed it expedient to carry out a case study to ameliorate eating disorder among university female undergraduates in the University.

### **Purpose of the Study**

The major purpose of the study was to investigate ameliorating strategies of eating disorder among female undergraduate students of the University of Nigeria. Specifically the study:

1. identified social problems associated with eating disorder among female undergraduates.
2. identified financial problems associated with eating disorder among the female university undergraduates.

3. identified health issues associated with eating disorder among female university undergraduates
4. determined ways of enhancing healthy eating habits among female university undergraduates.

### **Hypotheses**

Ho<sub>1</sub>: There is no significant difference between the mean ratings of the female undergraduates of Nsukka and Enugu campuses on the social problems associated with eating disorder.

Ho<sub>2</sub>: There is no significant difference between the mean ratings of the female undergraduates at Nsukka and Enugu campuses on the financial problems associated with eating disorder.

Ho<sub>3</sub>: There is no significant difference between the mean ratings of the female undergraduates at Nsukka and Enugu campuses on the health problems associated with eating disorder.

Ho<sub>4</sub>: There is no significant difference between the mean ratings of the female undergraduates at Nsukka and Enugu campuses on the ways to enhance healthy eating habit among female undergraduates in University of Nigeria.

### **Methodology**

*Design of the Study:* The design of the study is a case study research. The study was conducted in the University of Nigeria. The university operates in two locations; its main campus at Nsukka and a branch at Enugu in



Enugu state, Nigeria. All the states of the federation are available in both campuses. Although Enugu state is considered to be an agrarian state, food supply is insufficient to the fast growing population of people trooping into the state for academic, business and tourism. This ever increasing number of students in the state contributes to the high cost of living. This informed the choice of the institution.

The target population of the study was 4,560 comprising of all second year female undergraduate students officially residing in all the female hostels in both campuses of `Enugu and Nsukka (Students' Affairs Department, Enugu and UNN campuses, 2014).

The sample for this study is 456 female second year undergraduate students at both Enugu and Nsukka campuses of the university. Random sampling technique was used to select three out of the ten female hostels in Nsukka campus of the university and two out of six female hostels in Enugu campus. According to Nworgu (2006) ten per cent can be used as a representative of the population. Ten per cent (10%) of 3,060 was used to give 306 female second year undergraduate students from Nsukka campus while also 10% of 1501 which is 150 of the Enugu campus second year students to give a total of 456 female second year undergraduate students of the University of Nigeria. Second years were purposively selected for the study because at

second year the students have spent one year in the school and mastered the school environment and people around them. Also, at this level most of them are still within the teenage range of indulging in eating disorder.

The structured questionnaire consisting of 40 items were used to elicit information from the students. The four point rating scale questionnaire was face validated by three experts. One from Home Economics and Hospitality Management Education in Faculty of Vocational and Technical Education, one from Home Science, Nutrition and Dietetics, Faculty of Agriculture and one from Measurement and Evaluation, Faculty of Education, University of Nigeria. Cronbach alpha Statistical tool was used to determine the internal consistency of the instrument and yielded a co-efficient of 0.79.

The copies of the questionnaires were administered to the respondents by hand and retrieved after completion to ensure high rate of return. Two hundred and forty eight (248) female undergraduates from Nsukka campus and 90 from Enugu campus returned their questionnaire. A total of 338 female second year undergraduates returned their questionnaire from both campuses.

The instrument was analyzed using mean scores and standard deviation. The arithmetic mean of the scale was 2.50 on the 4-point scale. Any mean of items which scored 2.50 and above was deemed accepted

while any mean with less than 2.50 was rejected. The four null hypotheses were tested using t-test statistics at 0.05 level of significance. When the t-calculated is greater than the t-critical table value of 1.96, the hypothesis was considered rejected.

But when the t-calculated is less than the t-critical table value of 1.96, the hypothesis was not considered rejected.

## Results

**Table 1:** Social problems

Mean Ratings and Standard Deviation of Respondents on the Social Problems Associated with Eating Disorder among Female Second year undergraduate Students of both Campuses

S/N	Social Problems	Mean	SD	Dec.
1	Feel guilty after eating especially in group	2.53	0.51	Accept
2	Feel terrified about over weight	3.60	0.82	Accept
3	Suffer social alienation due to over eating	2.23	0.56	Reject
4	My clothes do not to fit tightly	3.48	0.86	Accept
5	Other people think that I am too thin	3.63	0.91	Accept
6	Eat secretly	1.93	0.33	Reject
7	Like eating with other people	1.42	0.20	Reject
8	Prepare food for others but do not eat the food I cook	2.62	0.67	Accept
9	Becoming anxious prior to eating	2.92	0.74	Accept
10	Eat faster than other people	2.96	0.81	Accept
	<b>Overall</b>	<b>2.66</b>	<b>0.64</b>	

SD-Standard Deviation Dec- Decision

The data presented on table 1 indicated that students frequently commit acts predisposing them to eating disorder by their eating habits. This is highlighted in the cluster mean of (2.66) of the respondents which is

above the criterion mean of 2.50 indicated. The table also revealed that item mean of 1, 2, 4,5,8,9 and 10 that are above 2.50 were much evidences to show that students agree to have been indulging in eating disorder.

**Table 2:** Financial Issues

Mean ratings and Standard Deviation of Respondents on the Financial Problems Associated with Eating Disorder among Female University Undergraduates of both campuses

S/N	Financial Problems	Mean	SD	Decision
11	Enjoy trying new rich food no matter the cost	2.16	0.54	Reject
12	Can afford to eat only snacks	2.57	0.59	Reject
13	Find myself preoccupied with food when I have so much money	3.12	0.78	Accept

14	Spend more money on food	2.91	0.73	Accept
15	Eat different variety of food at a time	2.43	0.61	Reject
16	Take laxatives or Self induced purging when I over feed	2.82	0.71	Accept
17	Only able to eat cheapest food	2.22	0.56	Reject
18	Eat more than I can afford	2.89	0.73	Accept
19	Spend more money on health care	1.92	0.41	Reject
20	Spend money on exercise to keep fit	1.42	0.21	Reject
	<b>Overall</b>	<b>2.48</b>	<b>0.59</b>	<b>Reject</b>

The data on the table 2 indicated that they had problems with funds for their proper feeding. Many students were unable to feed healthily due to either having excess money to spend or they do not have. Items, 12,13,14,16 which were accepted supported this findings. Items 11, 19 and 20 were regarded as not accepted since they

are not seen to be common with the students having been scored to less than 2.50 on the financial problems associated with eating disorder among second year female university undergraduates.

### Research Question 3

**Table 3:** Health issues

Mean ratings and Standard Deviation of Respondents on the health issues Associated with Eating Disorder among Female University Undergraduates of both campuses

S/N	Health Problems	Mean	SD	Decision
21	Exercise strenuously to burn off fat	2.16	0.54	Reject
22	Vomit after I have eaten	2.91	0.73	Accept
23	Suffer from constipation	2.98	0.75	Accept
24	Unhealthy teeth and gum	2.91	0.73	Accept
25	Experience irregular menstrual period	2.63	0.67	Accept
26	Noticeable extreme loss of weight	2.82	0.71	Accept
27	Stomach is empty and experience sharp pain	2.22	0.56	Reject
28	Experience back pain as a result of ulcer	1.92	0.41	Reject
29	Always feel dizzy	2.92	0.73	Accept
30	Always sick and visit the doctor regularly	2.91	0.73	Accept
	<b>Overall</b>	<b>2.48</b>	<b>0.59</b>	<b>Reject</b>

The table above represents the mean ratings and standard deviation of respondents on the social problems associated with eating disorder among female undergraduate in both

campuses of Enugu and Nsukka. Items number 21, 27 and 28 were rejected as the health problems that are associated with eating disorder. The remaining items were all accepted

to be the health related issues affecting the students' preponderance to eating disorder in the Campuses.

**Table 4:** Mean ratings and Standard Deviation of Ways of Enhancing healthy Eating behavior among Female University Undergraduates of both campuses.

S/N	Ways of Enhancing ED	Mean	SD	Decision
31	Recognition of eating disorder	1.74	0.36	Reject
32	Talk it over with parents, teacher or counselor	2.96	0.74	Accept
33	Improve overall eating plan	3.15	0.80	Accept
34	Avoid nibbling between meals	3.09	0.78	Accept
35	Watch out for food allergy and avoid such food	3.27	0.83	Accept
36	Restore normal weight after excess eating	2.61	0.66	Accept
37	Start each day with a good break fast	3.84	0.96	Accept
38	Get involved in a regular healthy exercise	3.66	0.92	Accept
39	Include complex carbohydrates in the diet	3.21	0.80	Accept
40	Eat vegetables and fruits in season daily	3.20	0.80	Accept
	<b>Overall</b>	<b>3.07</b>	<b>0.77</b>	<b>Accept</b>

The data on the table indicated that almost all the items except item 31 were accepted indicating that students were eager to embrace the suggested strategies for ameliorating eating disorder. Most of the items scored above 2.50. These measures were accepted as a way of enhancing healthy eating behavior of female

university undergraduates. Whereas other item has the mean below 2.50 and therefore not accepted as the ways of enhancing eating behavior among female university undergraduates at both campuses of the university was insignificant.

#### Null Hypothesis One

**Table 5:** Summary of t-test on the difference between the Mean rating of the second year Female at Enugu and Nsukka campuses on the Social Problems associated with Eating Disorder

S/N	Respondent Group	No. of Respondent	Mean	SD	DF	t-Cal	t-value	Decision
1	Nsukka Female Students	306	2.76	0.20	454	0.07	1.96	NS
2	Enugu Female Students	150	2.66	0.15				

SD-standard Deviation; DF- Degree of freedom; t-cal-T calculated; t-value Table value; NS = Not Significant

The table above shows the calculated t-value of 0.07 at 454 degree of freedom and 0.05 level of significance. Since the calculated t-value of 0.07 is

less than the table value of 1.96, the null hypothesis is accepted. Therefore, there is no significant difference in the mean rating of the second year female students in Nsukka campus and second year undergraduates of Enugu

campus female students on the social problems associated with eating disorder.

**Null Hypothesis Two**

**Table 6:** Summary of t-test on the difference between the Mean rating of the Second Year Female undergraduates of Nsukka Campus and Second year female undergraduates of Enugu campus on the Financial Problems associated with Eating Disorder

S/N	Respondent Group	No. of Respondent	Mean	SD	DF	t-Cal	t-value	Decision
1	Nsukka Campus Female Students	306	2.46	0.17	454	0.06	1.96	NS
2	Enugu Campus Female Students	150	2.49	0.16				

SD-standard Deviation; DF- Degree of freedom; t-cal-T calculated; t-value Table value; NS =Not Significant

The table above shows the calculated t-value of 0.06 at 454 degree of freedom and 0.05 level of significance. Since the calculated t-value of 0.06 is less than the table of 1.96, the null hypothesis is accepted. Therefore, there is no significant difference in the mean rating of the second year female

undergraduates of Nsukka campus and second year female undergraduates of Enugu campus on the social problems associated with eating disorder.

**Null Hypothesis Three**

**Table 7:** Summary of t-test on the difference between the Mean rating of the Second Year Female undergraduates of Nsukka and Enugu campuses on the Health Problems Associated with Eating Disorder

S/N	Respondent Group	No. of Respondent	Mean	SD	DF	t-Cal	t-value	Decision
1	Nsukka Campus Female Students	306	2.48	0.59	454	0.06	1.96	NS
2	Enugu Campus Female Students	150	2.46	0.57				

SD-standard Deviation DF- Degree of freedom t-cal-T calculated t-value Table value; NS = Not Significant

The Table 7 above shows the calculated t-value of 0.06 at 454 degree of freedom at 0.05 level of significance. Since the calculated t-value of 0.06 is less than the table of 1.96, the null hypothesis is accepted. Therefore, there is no significant difference in the

mean rating of the second year female undergraduates of Nsukka and of Enugu campuses on the health problems associated with eating disorder.

#### Null Hypothesis Four

**Table 8:** Summary of t-test on the difference between the Mean rating of the Second Year Female undergraduates of Nsukka Campus and Enugu campuses on the Ways of Enhancing Healthy Eating Habit

S/N	Respondent Group	No. of Respondent	Mean	SD	DF	t-Cal	t-value	Decision
1	Nsukka Campus Female Students	306	3.07	0.77	454	0.06	1.96	NS
2	Enugu Campus Female Students	150	3.06	0.78				

SD-standard Deviation DF- Degree of freedom t-cal-T calculated t-value Table value; NS = Not Significant

The last table above shows the calculated t-value of 0.06 at 454 degree of freedom and 0.05 level of significance. Since the calculated t-value of 0.06 is less than the table value of 1.96, the null hypothesis is accepted. Therefore, there is no significant difference in the mean rating of second year female students in Nsukka campus and of Enugu campuses female students on the ways of enhancing healthy eating habit.

#### Discussion of findings

The findings of this study agreed with Duyff (2004), (Wright (2004), Whitney and Rolfes (2010) and Wardlaw and Hampl (2014) that individuals should

be aware of healthy eating pattern and this can be achieved by eating at normal time of the day such as breakfast, lunch and dinner, choosing fast foods wisely, eating healthy snacks and avoiding starvation. So the negligence of healthy eating behaviors by some university undergraduates causes some forms of eating disorder as evidenced by this study.

#### Conclusion

From the findings the study, it was concluded that social problems associated with eating disorder are feeling terrified about over weight, female students think that clothes do not fit her, the thought of looking too



thin or too fat. Other social problems as indicated in table one are; girls becoming anxious before eating and the habit of eating faster than other people.

Financial problems associated with eating disorder can be experienced when female students find themselves preoccupied with food; this will make them consume food in an unhealthy manner. Other financial problems common with eating disorder are: spending more money by female students on food, the attitude of eating variety of food at a time, spending more money on the intake of laxatives and the act of female students eating more than they can afford.

Health problems associated with Bulimia nervosa vomit after they had eaten, those with Binge eating suffer from constipation. They have teeth problems, experience irregular menstruation, noticeable weight loss, feel dizzy and always seek medical attention.

Ways of enhancing healthy eating behavior as depicted in table four are: the ability of female students to get counseling from Home Economics teachers, guidance counselors and parents, improving overall eating plan, avoiding the act of nibbling between meals, and watching their weight. Other constructive strategies for enhancing healthy eating food behavior as inscribed in table four are: restoration of lost weight through adequate diet, starting the school day with a good breakfast, indulging in a healthy exercise, and provision of

school based nutrition educationist and finally eating of vegetable and fruits in season. To a great extent, both the UNN and UNEC undergraduate female students shared a common view with regard to the three major problems associated with eating disorder as posited in this study. They also shared a common view in terms of ways of enhancing healthy eating habit.

### **Recommendations**

Based on the above conclusions of the study the following recommendations were made:

- 1 Undergraduate students of the University of Nigeria should stick to a regular eating schedule. Skipping meals or fasting for long stretches may be dangerous. To avoid this eat three times a day by Planning ahead of meals and snacks.
2. Students should adopt healthy eating plan as the key to avoiding weight gain. They should focus on nutritious foods that will energize and make the body strong. Think of food as fuel for the body. The body knows when the tank is low, one should listen to it. Eat when truly hungry, and then stop when full or satisfied.
3. The school authority should include the study of food and meal planning in the curriculum of the undergraduates in their first year General studies course.
4. The Federal Government should provide counseling services in

teaching and public hospitals where teenage and adolescent girls can seek for advice on their state of health.

5. Develop a solid support system. Surround yourself with people who support, appreciate you and want to see you healthy and happy. Avoid people that drain ones energy, encourage disordered eating behaviors, or make one feel bad about yourself.
6. Fill your life with positive activities. Make time for activities that bring you joy and fulfillment. Try something you have always wanted to do, develop a new skill, pick up a fun hobby, or volunteer in your community. The more rewarding your life, the less desire you will have to focus on food and weight.
7. Avoid pro-ana and pro-mia websites. Do not visit websites that promote or glorify anorexia and bulimia. These sites are run by people who want excuses to continue down their destructive path. The "support" they offer is dangerous and will only get in the way of your recovery.
8. Identify what triggers one's destructive behaviors. Triggers could be holidays, examination periods, rainy season, and harmattan season among others. Have a plan for dealing with them, such as going to therapy more often or asking for extra support from family and friends.

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## **Dietary Intake of Pregnant and Childbearing Aged Women within Low Income Families in Ibaji Local Government Area, Kogi State**

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### **Abstract**

The study investigated the food intake of pregnant and childbearing aged women within low income families in Ibaji Local Government Area. It focused on the major types of foods consumed by these women. Also it assessed the four days dietary intake, and mean daily dietary intake of pregnant and childbearing aged women within the low income families. 100 pregnant and childbearing aged women were randomly selected for the study with the use of 28 villages. Data were collected through the use of clinical Examination, observation, oral interview and direct weighing technique for four consecutive days of: 2 week days and 2 weekend days. Data collected were subjected to statistical analysis, using mean score, standard deviation and percentage 24hrs dietary recall was used to determine the quantity and quality of their food intake. All the subjects have met their recommended dietary allowance in energy (2173kcal), fat (58.3) calcium (450mg), phosphorus (450mg), except iron (30mg), Riboflavin (59.2) and protein (44.6). In conclusion, they were advised to schedule their time and use it wisely in order to have time to prepare their meals and eat them adequately.

**Keywords:** Food, Intake, Low, Income, Women.

### **Introduction**

Human beings are subsisting on products of plant and animal origin as their foods. Food is the most important basic necessity for human beings other than water and oxygen in body cells are dependent on the intake of food for the supply of nutrients such as carbohydrates, proteins, fats, vitamins, minerals and fibres. Therefore intake of a balanced diet is

of paramount importance for an optimal supply of nutrition to human beings. People have different nutritional requirements, for example children, pregnant women require different levels, pattern of nutrition in comparison to the elderly (Kapila and Zhong - June 2012).

Due to different social, economic, cultural factors, dietary pattern and eating habits that differ from person to

person as well as country to country, people from different religions consume differently, kinds of foods prepared in vary ways. However, the diet and what people desire to eat is decided by many factors such as family income, time available to home maker, resources and others.

Nutrition for each individual represents accumulation of habits formed throughout one's life time. Good nutrition requires that individuals should be well fed for health, growth and for physical and mental development. This could be achieved by consumption of food of diverse types and classes in the right quantity and quality (Agugo and Onimawo, 2009). Nutrition is crucial before, during pregnancy to optimize health for both the mother and the child (Sandra, Procter, Christiana, Campbell, Lucia and Kaiser, 2014). Adequate nutrition for pregnant women is crucial for the health and survival prospects new baby (Yue, Michael, Xuely, Lingxia and Hong, 2009; Oguizu 2015). Adequate nutrition is essential for anybody, including the childbearing aged women, to enhance optimal growth, development and good health because of the rapid growth and brain development taking place at the time there is good nutritional evidence that appropriate in the first year of life, that improve the outcomes of children's physical and mental health throughout life. The provision of adequate nutrition during infancy and early childhood is a basic requirement

for development and provision of optimum growth, health and behaviour of the child (Egbuna, Bral, Neiemogha, Enya, Nebe, Igbasi and Akinyele, 2009; Onyechil, 2011). Maternal nutritional nutrition during pregnancy plays a pivotal role in regulation, development, therefore has the potential to influence both short and long term health outcomes (Yokubu, Dewet and symonds, 2013). Eating adequate diet helps to lesson infection. However, evidence abound suggests on socio-economic position in different periods in the cycle of man, can influence his feeding pattern. (Kwokocha and Nwoko, 2008; Oganah and Dalmecida, 2008).

Poor nutritional status can precipitates diseases and increase its severity. Well nourished individuals are able tolerate and recover from acute illness and trauma (Ademilegun, and Ogudabasis, 2010; Oguntona, 2011, Yue, Michael, Xueli, Lingxia and Hong, 2009; Anyika, 2011; Oguizu, 2015).

Health is refers to a state of physical, mental and social well-being and not merely the absence of diseases or infirmity (Ewabare, 2014). Good health depends on many factors such as food, heredity, hygiene, exercise but food is the most important of all these. For many women, running a home, bringing up children and taking care of relatives, as well as working outside the home, can influence their physical and mental well-being ensuring good nutrition and a healthy lifestyle can contribute significantly to women's

health throughout their lives (Nzeogwu, and Uwaegbute, 2014; Steve-Edemba and Nnam, 2014).

The rapid growth during menstruation and also during pregnancy can result increase risk in low levels of nutrients such as iron, folic and calcium. Survey of malnutrition status frequently demonstrates chronic shortages of these nutrients not only in a woman's earlier years but extending through into later life. Low energy diets slim regimes, eating disorders and the increasing number of vegetarians diet make women even more vulnerable to nutritional inadequacies.

It is important that women of childbearing aged should adopt a life style that optimize health and reduce birth defects, suboptimal fetal development and chronic health problems in both mother and child. (Sandra, Proter, Christiana, Compbell, Lucia and Ikaiser, 2014).

Despite the nutritional stress on women position in society and their well being that begins in child hood, then adolescence and throughout childbearing period, women are held captive by food taboos and the society virtually does not give any opportunity for compromise. Food taboos limit access to food supply and nutritional adequacy among pregnant and childbearing women. Nutritional status of pregnant and childbearing aged women varies with socio-economic, cultural and demographic factors (Mustapha, Ademulegun, Ogundahan, 2010), childbearing aged

women need a lot of iron and folic because they are of iron deficiency anaemia if enough is not taken by them. All women of childbearing aged are capable of becoming pregnant and also consume folic acid every day for the purpose of reducing the risk of having the pregnancy being affected with spinabifida and other neural tube defects.

Low income women may experience a profound effect on subsequent pregnancy outcome, stress and depression may diminish a woman's ability to cope with barriers to healthy eating resulting in poor dietary quality. (Ellen and Miranda, 2011; Fowles, Murphey, Ruiz, 2010).

They may experience stress resulting from inadequate financial resources. Gayle and Adouna, (2012) reported that stressed pregnant woman were more likely to consume energy-dense, nutrient poor foods, thus decreasing their dietary quality during pregnancy. (FRAC, 2016; Steve - Edama and Nnam, 2016).

Poor choice of foods, rather than a shortage of finances, is the usual reason for inadequate nutrition practices (Odenigbo, Odenigbo and Onyeabor, 2010). The choice of what to eat in what form and quantity to be consumed as well as when she is force to compromise health and nutrition needs in the favour of her family's need (Nnam, Ayugo and Onyeabor, 2014).

The dietary choices which include consumption of cheap energy dense nutrient lean food have increased



prevalence of obesity, associate with poor dietary choices and reduced physical activities has led to serious concern about the dietary habits of all ages (Otitoola, 2014). Food is related to diseases, just as it is related to health, (Sivasqnkar, 2005).

Deficiency diseases such as rickets and beriberi have been found to occur due to insufficient amount of vitamins. These diseases can be eradicated with the use of available better processed and fortified foods, therefore the thrust of this work is to investigate the food intake within low income pregnant and childbearing women in Ibaji Local Government Area.

#### **Purpose of the Study**

The main purpose of this study was to investigate the dietary intake of pregnant and childbearing aged women within low income families in Ibaji Local Government Area. Specifically, the study determined:

1. major types of foods consumed by low income pregnant and childbearing aged women in Ibaji Local Government Area.
2. four days dietary intake of pregnant and childbearing aged women within low income families in Ibaji Local Government Area.
3. the mean daily intake of pregnant and childbearing aged women for energy, protein and fat.
4. the food consumption pattern of low income pregnant and childbearing aged women in Ibaji Local Government Area.

5. to access the influence of socio-economic, nutritional knowledge on dietary pattern of pregnant and childbearing women within Ibaji low income families.

#### **Research Questions**

1. What is the socio-economic problem that affects Ibaji low income pregnant and childbearing aged women in their dietary pattern in Ibaji Local Government Area?
2. How do nutritional knowledge and time factor influence the low income pregnant and childbearing aged women in Ibaji Local Government Area during their meals preparation?
3. Do pregnant and childbearing aged women in Ibaji Local Government Area low income families have access to high quality foods?
4. What are the reasons why fruits and vegetable are not included in Ibaji low income pregnant and childbearing aged women's food intake?
5. Do stress, depression, food habits and food choices affect the pregnant and childbearing aged women in Ibaji low income families?

#### **Methodology**

*Design of the study:* They has dietary information, oral interview and observation were used based on the research objectives to obtain responses from the respondents. Data collected were used to establish the dietary pattern, socio-economic, nutritional knowledge, and time available to the

pregnant and childbearing aged women in Ibaji Local Government Area, Kogi State.

**Area of the Study:** The area of study was Ibaji Local Government Area of Kogi State, Nigeria. Ibaji is made of ten wards namely: Unale, Ejule, Onyedega, Iyano, Odeke, Uje Echeno, Akuro, Odomomo and Akuro. Each of the ward constitutes four villages (i.e. 40 villages in total), in Ibaji there are just two geo-graphical divisions - Ibaji Ojukpale (Ibaji North) and Ibaji Ogane (Ibaji South). (Apeh, 2014). Kogi State has 21 Local Government Area of which Ibaji is one. Kogi State has three senatorial districts. Ibaji Local Government Area lies South of Idah town. It has boundary on the East of Idah by river Anambra and on the West by river Niger.

**Population for the Study:** The population for the study comprised all pregnant and childbearing aged women in Ibaji Local Government Area low income families. Ibaji Local Government Area has ten wards and each ward has four villages (i.e. 40 villages all together). The population for the study consisted of 112 households from 28 villages of 60 pregnant and 60 childbearing aged women in Ibaji low income families. A population of 127,572 in 2006 national census in Ibaji Local Government Area was recorded. Ibaji today is made up of 57 towns and villages (Ape, 2014).

**Sample for the Study:** Ibaji Local Government Area has forty villages from ten wards. Multistage sampling was used for easy selection.

**Stage I:** 28 villages were sampled for the study. **Stage II:** Four households from each village was randomly selected for the study i.e. 4 households in each village x 28 villages = 112 households, with the use of seven words, in Ibaji low income Local Government Area. A total of 112 families (of 60 pregnant and 60 childbearing aged were selected for the study).

**Data Collection Techniques:** The data collected for the study were: Oral interview, observation and dietary information.

**Instruments for Data Collection:** Oral interview guide and observation checklist/guide were used for data collection. Oral interview was used for the subjects who could speak and write in English Language while observation was used for those who could not understand English Language, shy and bias. Oral interview and observation were based on socio-demographic characteristics such as aged, occupation, income and marital status, Dietary information was also used.

**Oral Interview Guide:** Oral interview consisted 5 research questions based on dietary pattern including the types of foods consumed, nutritional knowledge, income, demographic characteristics and the time available to the subjects (i.e. 20 pregnant, 10 childbearing aged women). Research questions were framed in closed ended way in order to obtain relevant information required.

**Observation Guide:** Two technologists were also involved in carrying out observation on the dietary pattern, including the types of foods used, nutritional knowledge, income, demographic characteristics, and time available to the respondents (i.e. 40 pregnant and 50 childbearing aged).

**Dietary Information Guide:** Dietary information was obtained from the subjects using 24-hour dietary recall and weighing methods (Onimawo, Chinyere, Echendu, Udoli and Njoku, 2004). Each subject that could speak and write in English was given a food record diary to record the details of the food consumed and those subjects who could not understand English language were assisted by investigators to recall and fill their diaries correctly. Two week days and two weekend days were used to conduct dietary investigation according to (Linnea, 1980) stated that four days are sufficient to determine dietary intake of any group of people.

The weighing method involved the weighing of raw foods as purchased, processed, cooked, served and re-weighed by subjects as described by Olusanya, (1977). The nutrient contents were estimated using food composition table.

**Data Analysis:** All the data collected from oral interview, observation were subjected, mean score and standard deviation and percentage.

**Findings of the Study:**

1. About ¾ of the women visited during the study, were always on

the farm from 7:30 am to 6:30 pm and they depended on rechauffee cookery (leftover food) because they considered it as time wasting to cook three (3) square meals a day.

2. Due to the nature of their activities, they were used to cooking two types of meals which were dried fish, ogbono soup + Eko (corn pudding), roasted fist + pop corn.
3. Through dietary investigation it was observed that the respondents ate beans sparingly without including vegetables and fruits in their meals and also ate more of energy and protein nutrients at weekend days more than week days.
4. It was observed that the Ibaji low income, pregnant and childbearing aged women were not eating adequately due to lack of time, lack of nutritional knowledge even though they had enough foods.
5. It was observed that some pregnant and childbearing aged women in Ibaji low income families had scurvy and thyroid gland.

**Table 1:** Major Foods Consumed by the Pregnant and Childbearing Aged Women

Major Food Sources	Food% Score
Yam	10.16
Rice	33.43
Plantain	10.42
Maize	19.66
Sweet potatoes	3.33
Beans	3
Fish	20
Fruits & Vegetables	0
<b>Total</b>	<b>100%</b>

In Table 1, it was observed that fish was the major source of protein eaten by Ibaji low income pregnant and childbearing aged women while rice and maize are the major sources of energy giving foods that they consumed. Beans was eating sparingly without fruits and vegetables.

**Table 2:** Summary of Four days Dietary Intake of Ibaji Low Income Pregnant and Childbearing Aged Women

Meal	Energy (kcal)	Protein (g)	Fat (g)	Iron (mg)	Calcium (mg)	Phosphorus (mg)	Riboflavin (mg)	Ascorbic Acid (mg)
Breakfast	195	5.9	7.3	1.03	97.3	112	0.2	2.05
Lunch	452	16.4	17.2	2.8	75	132	0.3	1.2
Supper	477	9.8	20.8	2.9	101	159	0.2	6.8
Total	1154	32.1	45.3	6.7	273.3	403	0.9	10.5
Mean	285	16.7	15.2	2.2	913.2	134	0.3	3.4
+SD	2100	7	7	1	14	25.3	1.3	1.9
RDA	2123	44.6	58.3	21	450	450	59.2	30
%RDA	4616	72	77.7	31.9	60.7	89.6	1.5	35
Net	50kcal	12	77.7	32	51	-	-	13.5

In Table 2, it was observed that the subjects have met their recommended dietary allowance in energy, 4616(kcal), protein (72.7g), fat (77.7g), calcium (60.7mg), phosphorus (89.6mg), except in iron (31.9mh), riboflavin (1.5mg) and in ascorbic acid (35mg).

**Table 3:** Mean Daily Intake of Pregnant and Childbearing Aged Women For Energy, Protein and Fat for two week-days and weekend days

Pregnant Women intake	Nutrient	Weekdays	Weekend days	Childbearing Aged women	Weekdays	Weekend days
	Energy(kcal)	46.5	48.5		38.4	41.9
	Protein(gm)	2.4	3.2		2.2	2.9
	Fat(gm)	3	21		2.5	19.4

Table 3, reveals that the weekend days nutrient contents of both groups of subjects were more than week days for example, the energy contents are 46.5 vs 48.5kcal for pregnant women while that of childbearing aged women were

38.4 vs 41.9kcal. This also imply with protein and fat contents in Table 3.

### Discussion

Table 1, reveals the food intake of all the subjects understudy in Ibaji Local Government Area. The intake of nutrients of all the subjects represents

the food habits and food preference of Ibaji community which may reflect the food habits of the people in Nigeria were carbohydrates dominate their diets, this report agrees with (Onimawo, 2004). In table 1, energy sources of nutrients contributed 4616kcal while protein sources of nutrient was only 72%.

Table 2, reveals the summary of four days dietary intake of all the subjects, fats contributed 72%, 60.7% calcium, 89.6% phosphorus, 31.9% iron, 35% ascorbate and 1.5% riboflavin. However carbohydrates contributed 70% food intake of the subjects this is because low income women basically fed on carbohydrate dense food and had low ascorbate 35% and 1.5% riboflavin because there were no inclusion of fruits and vegetables in their meals, most of these women during clinical examination suffered from many disease especially thyroid gland and scurvy which might indicate lack of iodine and vitamins in their food intake, this agrees with (EUFK, 2011; Onimawo, Chinyere, Echendu, Udol Njoku, 2011) is reports.

Table 3 revealed mean daily intake of pregnant and childbearing aged women on weekdays and weekend days. The mean daily energy intake at week days of the pregnant women were lower than weekend days (46.5 vs 48.5kcal) this may be due to not having enough time to prepare food to eat at week days, also were the childbearing aged women had the higher mean energy intake at weekend

days than weekdays (41.9 vs 38.4kcal). This was because they had enough time at weekend days than week days. This implies to all other nutrients, intake of all the subjects studied, in table 3. In most of the studies of food intake pregnant women in developing countries, high energy intake was reported, this agrees with (Onimawo and Offurum, 2015; Eileen, 2011; Maranda, 2011). The pregnant and childbearing aged women in Ibaji have met the recommended dietary allowance in all most all the nutrients in table 2 except the ascorbic acid and riboflavin.

Women do not need to follow a special diet when they are expecting a child. A healthy balance of wholesome every day food satisfies the need of both mother and child and even the child bearing aged women, (Miostoo, Maeravernda, Lyoheilsustoo and Umhverfisstofnun, 2006; Oguizu, 2015). Nutritious food plays a significant role in maintaining a healthy body which is capable with long life, human body needs varying amount for daily activities. Nutrients are obligatory in order to build and repair the cells and tissues in human body. Moreover it helps to control the organs and bones in optimum working condition to provide energy (Kapila, Ratthnayaka and Zhung-Jun, 2012) also agree to this report.

## Conclusion

Throughout this study it has been revealed that the Ibaji pregnant and childbearing aged women within the low income families had almost all the food items to meet their recommended dietary allowance but they could not meet all the nutrients especially riboflavin and ascorbic acid in table 2, which are very important for activities and prevention of diseases.

Information was also gotten through dietary investigation that they could not eat adequately due to lack of time because they had to go to farm as early as 7.00 am and return home around 6 pm and also they depended on rehauffee cookery almost every day. It was also observed that they had lack of knowledge of nutrition, wrong choice of food, and food preference and eating habits had great influence on their dietary pattern. Therefore they create a enough time for themselves to enable them plan and prepare adequate meals for their health purpose. Since most of them are mostly farmers they should eat enough adequate meals before they take off for farm early in the morning, rather than eating snacks (Fried corn + roasted fish).

## Recommendation

Evaluating a woman's dietary intake is an important of the initial prenatal visit and dietary intake should be assessed frequently throughout the day. In addition health care providers should assess the factors that may enhances or pose as barriers for

healthy eating such passion, stress and eating habits and to identify pregnant and childbearing aged women's needs, more intensive dietary monitoring and intervention are needed.

Nutrition education and counseling seek to improve nutritional practices before and during pregnancy to improve maternal nutrition and reduce the risk of poor health outcome in both mothers and their babies.

To look healthy, is to be well nourished with appropriate quantity and quality of foods. On this basis and the finding of this study, it would be realized that all the pregnant and childbearing aged women from Ibaji low income families will value their time more on farm work than feeding adequately and also value eating quantity of food than quality of food therefore the following are recommended:

- The house wives of the Ibaji Local Government should be enlightened through the mass media on how to plan their budget wisely to suit their meal preparation.
- The pregnant and childbearing aged women should be educated on the importance of eating varieties of foods especially fruits and vegetables.
- The following offers practical and achievable advice for women of childbearing aged:
  - Nourish your body with a healthy diet and be practically active before, during and after pregnancy.



- Counselor should advise the pregnant and childbearing aged women on the importance of iron and other nutrients supplement,
- They should eat different types of nutritious foods.

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## **Dietary Habit and Nutritional Status of Commercial Tricycle (*Keke Napep*) Riders in Aba South Local Government Area of Abia State**

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### **Abstract**

The study was undertaken to investigate the dietary habits and nutritional status of commercial tricycle (*Keke Napep*) riders in Aba South L.G.A of Abia State. Data were obtained from 220 male tricycle riders who were randomly selected. Information on socio economic, demographic characteristics and dietary habit was obtained by means of questionnaire. Anthropometric method was used to determine the nutritional status of the subjects. Data were analyzed using frequencies, percentages and Chi square. The findings of the study among others showed moderate (53.6%) consumption frequency of cereals. High consumption frequency of roots/tubers (51.8%), fish/meat (49.1%), snacks (58.2%) and beverages (69.1%). Legumes (60.0%), fruits/vegetables (71.8%) consumption frequencies were low. There was a significant relationship ( $p < 0.05$ ) between nutritional status and source of food consumption.

**Key Words:** Dietary, Habit, *Keke Napep*, Nutritional, Status.

### **Introduction**

Commercial tricycle (*Keke NAPEP*) is a means of transportation introduced by the Nigerian Government through the

National Poverty Eradication Programme (NAPEP) to help ensure economic empowerment for the poor (Udeozo, 2013). Its history in Nigeria

according to Mgbemena (2013), can be directly traced to Governor Mohammed Buba Marwa of Lagos State (1996 -1999) who was the first to launch its use as a commercial means of transport. This led to its first name "Keke Marwa" and it is still referred to as same in Lagos. NAPEP was inaugurated under the administration of President Olusegun Obasanjo in 2001 when 2000 green coloured tricycle was distributed in Abuja as a commercial means of transportation in the Federal Capital Territory (FCT). The strategy was employed to convert area boys from idlers to a productive work force. NAPEP (2004) opined that the other objectives for the introduction of *Keke NAPEP* was to sustain wealth creation, provide affordable mass transit services, provide opportunity for the growth of other ancillary service such as vending water, mobile food canteens, mobile grocery shops and post delivery services as well as to facilitate technical entrepreneurs and other subsidiary businesses such as the sale of tricycle spare parts dealers, operators and mechanics. Udeozo (2013) added that *Keke NAPEP* helped to reduce transportation expenses and that its rate of accident is very low when compared to the use of motorcycle as a commercial means of transportation

Trade eventually began to grow as businessmen started to import, buy, sell and operate *Keke NAPEP* as a means of intra city commercial transportation in Nigerian. In Abia

State, the yellow coloured brand from Bajaj group, India was common. The ban on motor bikes "Okada" as a means of commercial transport in some cities in the South East such as Owerri in Imo State, Uyo in Akwa Ibom State, Port Harcourt in Rivers State, Aba and Umuahia in Abia State, among others significantly encouraged the proliferation of *Keke NAPEP* in those States as "Okada" operators allegedly collaborated with criminals to perpetuate crimes.

The dietary habit of people plays a significant role in their well being. It contributes to good health and can also be a factor on the prevalence of diseases, if not properly handled. The food available to a people to a large extent influence their dietary habit and food choices. Steyn, Nel,

Whadiah, Waudu, Kimiywe, Ajah and Mbithe (2006) reported that recently, the dietary habit of developing countries have been undergoing dramatic transformation from the traditional diets that was high in fiber, low in calories with minimal animal protein to the western type of diet that is low in fiber, calorie dense and high in protein, most of which are processed. This dietary shift has been attributed to the influence of urbanization and globalization (Ekpeyong and Akpan, 2013).

In Nigeria, Albala (2014) noted that formally, it was a common practice to eat three meals, (breakfast, lunch and dinner) in a day. The component of the meals varied across

culture but generally included grains and flesh. Men were mostly eating out while at work rather than families or individuals eating out as a way of socialization. But the trends are changing and that very fast too. Onimawo (2014) opined that dietary habit of people conform to the food habit of their immediate environment, which have changed overtime although some people still stick to what is familiar. For example Steyn *et al.* (2006) reported that in South Africa, the most commonly consumed foods were sugar, tea, maize porridge, brown bread, potatoes, hard blocked margarine and milk. In Kenya, tea, sugar, milk, cooking fat, maize porridge (kale), white bread and hard margarine were the most commonly consumed foods. Mennen, Mbanya and Cade (2000) reported that majority of the people in Cameroun now depend on imported and refined foods. Soft and carbonated drinks were consumed more often than unsweetened juice and diet soda. Tea was also consumed more often than chocolate/coffee and many consumed sweeteners usually sugar with their meals.

In Nigeria, the food habit of adults seem to cut across people from different works of life. Sally, Akarole-Anthony, Folake, Odubore, Vileme, Omolda and Adebamowo (2012) reported that rice was the most consumed food by the urban adult. In rural and urban areas, almost everyone ate bolus meals with soups. Other foods consumed by the people

include cassava, pounded yam and sweetened juice. Olamakiye, Atinmo and Olubayo-Falbragun, (2006) also reported an increase in the consumption of refined sugars, saturated fat and reduction of fiber intake among Nigerians. Rice and pounded yam were formally ceremonial foods or consumed at weekends, but the recent dietary trend have made rice (particularly the imported par boiled long grain variety) to be consumed on week days. The trend have also been strengthened by the introduction of fast food restaurants, whose major products offering is packaged chicken and rice meals. FAO (2010) attributed availability, reduced time and today's easier methods of pounded yam preparation as the reason for its increased consumption frequency.

The nutritional requirement of a person is determined by some factors such as age, height, sex, activity level, health status (FAO, 2013). As one grows from infancy to adulthood, the body requirements increases (Onimawo, 2014). At adulthood the nutritional needs are less age dependent until about 50 years or more when it starts to decrease (WHO/FAO, 2013). The taller an individual, the more foods will be required to stay healthy and the smaller the less. Nutritional requirement vary among sex. Men burn calories than women of the same age and need more food to stay healthy. People who are physically very active need more calories and

nutrients compared to inactive people. Those who are ill or recovering from illness require more nutrients than healthy people do. The average height man needs about 20% more calories a day than the average height woman and a very active person needs 20 - 30% more calories a day than an active person.

Good nutrition means eating a healthy diet consisting of the right kinds of food in the right amounts. Okeke (2014) reported that it helped to prevent diseases and aids in adequate weight management. Ekpeyong and Akpan, (2013) noted that among adults worldwide, poor nutrition and lack of physical exercise are the major causes of overweight and obesity as well as other non-communicable diseases. It is important to consume a healthy, varied diet according to British Nutrition Foundation (2014), as it provides the right amount of nutrients in the right quantities to give enough energy to maintain a healthy body weight. The WHO (2014) fact sheet reported that an adult requires about 56g/d of protein, 38g/d of fiber, at least 35g of potassium, less than 2g of sodium (equivalent to 5gm of salt) per day. Other vitamins/ minerals are required in small amount, often a few thousand in gram.

Malnutrition can occur if there is not enough of the right food to eat or if too much of a particular kind of food is consumed. For example eating too many calories for a long period will lead to overweight and obesity (WHO

2013). The WHO report also noted that over 26% of Nigerian adults are overweight and over 5% of men and over 9% of women are obese. Except for the study by Henry Unaeze and Ukairo (2012), the consumption pattern of *Keke NAPEP* riders have not been documented anywhere in literature despite their national relevance and the impact that urbanization is exerting on different occupational groups' dietary habits.

### **Purpose of the study**

The major purpose of this study was to investigate the dietary habit and nutritional status of commercial tricycle (*Keke Napep*) riders in Aba South L.G.A of Abia State. Specifically, the study determined

- 1.the demographic characteristics of *Keke NAPEP* riders .
- 2.the socio economic characteristics of *Keke NAPEP* riders.
- 3.their dietary habit.
- 4.Their food consumption frequency.
5. their nutritional status.

### **Research questions**

The following research questions were formulated.

1. What is the demographic characteristics of *Keke NAPEP* riders?
2. What is the socio economic characteristics of the riders?
3. What is their dietary habit?
4. What are the common foods they consume?



5. What is the weekly food consumption frequency of the respondents?
6. What is their nutritional status?

### **Methodology**

**Area of the study:** The area of the study was Aba South Local government area (LGA) of Abia State, which is located about 64km from Umuahia, the state capital. Aba is the commercial nerve centre of the South Eastern States of Nigeria. *Keke NAPEP* became the predominant mode of transport within the area between 2009 to 2011 to help curb kidnapping cases, following the barn of commercial motorcycle "Okada" who allegedly facilitated and provided a fast means of escape for the criminals.

**Population of the study:** The population for the study consisted of all the commercial tricycle riders who operate within Aba South L.G.A. route. Ikpeoha (2010) estimated that the number of *keke NAPEP* riders in Abia State was well over 16,000. This population however increased drastically shortly after normalcy returned to the state after the kidnapping era. The Aba South *Keke NAPEP* union office estimated that the riders as at the time of this study was about 4000 (Aba South 2014).

**Sample and sampling technique:** The sample size was determined by calculating 5 percent of the number given by the union office in Aba South L.G.A. Thirty five was added to the sample size to accommodate drop

outs. In all a sample size of 220 was eventually used for the study.

**Instrument for data collection:** Questionnaire and anthropometric instruments were used for data collections. Questionnaire was used to obtain information on demographic, socio economic, dietary habit and food consumption frequency of the respondents. It was validated by three university lecturers of Foods and Nutrition Cronback Alpha Statistics was used to determine the internal consistency of the items. A reliability coefficient of 0.91 was obtained.

### **Data collection methods**

**Questionnaire administration:** Two hundred and thirty five questionnaires was distributed but only two hundred and twenty which was properly filled and retrieved was eventually used for the study.

**a. Anthropometric measurements:** The height and weight of all the subjects were determined using the method described by WHO (2000).

i. The weight in kilograms was obtained by placing the scale (Hanson bathroom scale) on a flat surface. The pointer was adjusted properly to zero and the measurement taken The weight was recorded to the nearest 0.1kg.

ii. The height (in meters) was measured with the subject standing erect on the calibrated wooden meter rule. Reading was taken to the nearest 0.1cm.

iii. The body mass index was calculated as weight in kilograms divided by the square of height in meters.

**Data analysis:** Frequencies, percentages and Chi-square were used for data analysis.

### Findings of the study

**Demographic characteristics:** Data on demographic characteristics of the respondents showed that all of them (100%) were males. Only 18.2% were between 21 - 30 years. The rest were above 30 years. Although 76.4% had experienced married life, 60.9% were

still married while 11.8% and 3.6% were divorced and separated respectively. The rest 23.6% were single. Majority (85.9%) were of Christian religion, 12.3% traditionalist and very few (1.8%) Muslims. More than half (58.6%) had a small family size of between 1 - 6 members while the rest had large family sizes of 7 and above. Only (6.8%, 11.4%, 22.7%) had no formal education, dropped out of school and had primary education respectively, many (45.0%) had up to secondary school and 14.1% up to university education.

**Table 1:** The socio economic characteristic of the respondents

Variables	Frequency	Percentage
<b>Means of acquiring tricycle</b>		
Hire purchase	124	56.4
Gift	7	3.2
Drive for tricycle owner	57	23.2
Cash payment	38	17.8
<b>Cost of tricycle</b>		
N180 - N200 (cash fairly used)	32	14.5
N350 cash (brand new)	68	30.9
N400 and > (brand new)	34	15.4
N600 - N750 (hire purchase)	53	24.1
>N750 (hire purchase)	33	15.0
<b>Daily income from tricycle</b>		
N2000 - N3000	134	60.9
N3001- N4000	75	34.1
>N4000	11	30.9
<b>Average monthly maintenance cost</b>		
N10.000 - N15.000	68	5.0
N15.001 - N20.000	143	30.9
>N20.000	9	4.1
<b>Daily government levy</b>		
N150 - N300	220	100

Table 1 shows the socio economic characteristics of the respondents. More than half (56.4%) acquired their tricycle on hire purchase and 23.2% drive for tricycle owners. The cost of tricycle was between N180.000 - N750.000. Some (30.9%) purchased brand new tricycle for N350.000 and 24.1% purchased between N600.000 - N750.000 on hire purchase. The average daily income from the tricycle was between N2000 - above N4000. The official daily government levy for commercial tricycle ranged from N150 - N300 while the average monthly maintenance cost including exploitation by police and area boys ranged from N10.000 - above N20.000

**Table 2:** The dietary pattern of the respondents

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Daily meal consumption pattern</b>		
2 times	130	59.1
3 times	78	35.5
➤ 3 times	12	5.4
<b>Reasons for skipping meals</b>		
High cost of food	52	40.0
No time to eat	78	60.0
<b>Total</b>	<b>130</b>	<b>100</b>
<b>Place of meal consumption</b>		
Home	74	33.6
Restaurant	146	66.4
<b>Cost of meal/ plate</b>		
N150 - N200	125	56.8
N201 - N250	56	25.4
N251 - N300	15	6.8

Table 2 shows the dietary pattern of the subjects. More than half (59.1%) ate two meals in a day. Only 35.5% ate three meals in a day. Many (60.0%) skipped meals due to time constraints. Over half (66.4%) ate in restaurants while only 33.6% ate at home. Some (56.8%) spent between N150 - N200, others spent between N201 - N300 per meal.

**Table 3:** The commonly consumed foods (n = 220, the respondents were allowed to choose more than one option).

Variables	Frequency	Percentage
<b>Commonly consumed meals</b>		
Soup and garri / fufu	157	71.4
Rice/'ofeakwu'	142	64.5
Rice and stew	125	56.8
Jellof rice	114	51.8
Roasted yam/plantain/beans	84	38.2
Yam/bean pottage	74	33.6
Bean pottage/egg	43	19.5
Spaghetti/indomie/egg	34	15.5
Breadfruit pottage	33	15.0
<b>Snack consumption pattern</b>		
Biscuits	164	74.5
Bread / doughnut	126	62.4
Meat pie/ cake	134	60.9
Chin chin/egg roll	121	55.0
Plantain chips/ buns	114	51.8
Tapioca/ groundnut/ coconut	84	38.2
None	48	21.8
<b>Fruit consumption pattern</b>		
Orange	84	38.2
Water melon	58	26.4
Banana	54	24.5
Guava	40	18.2
Pineapple	40	18.2
Pawpaw	38	17.3
<b>Consumption of beverages</b>		
Water	220	100
Soft/carbonated drink	160	72.7
Malt drink	140	63.6
Alcohol	115	52.3
Energy drinks	70	31.8
Cocoa drinks/ tea	30	13.6

Table 3 shows the commonly consumed foods by the respondents. Many (71.4%, 64.5% and 56.8%) consumed soup with garri/fufu, rice with ofeakwu and rice with stew. Many (74.5%, 62.4% and 60.9%) also consumed biscuit, bread/doughnut and meat pie/cake respectively. Water was the only beverage consumed regularly and many (72.7% and 63.6%) consumed soft/ carbonate and malt drinks regularly.

**Table 4:** Weekly food consumption frequency

Food	Low 1-3	Moderate 4 - 6	High 7/>
Beverages	24 (10.9)	44 (20.0)	152 (69.1)
Snacks	30 (16.3)	62 (28.2)	128 (58.2)
Roots/tubers	33 (15.0)	74 (33.6)	114 (57.8)
Fish/meat	25 (11.4)	87 (39.5)	108 (49.1)
Cereals	24 (10.9)	118 (53.6)	78 (34.5)
Fruits/vegetables	150(71.8)	64 (29.1)	6 (2.7)
Legumes	132 (60.0)	51 (23.3)	37 (16.8)

Table 4 shows the weekly food consumption frequency of the respondents. It that showed beverages (69.1%), snacks (58.2%), roots/tubers (57.8%) and fish/meat (49.1%) consumption was high. Cereals (53.6%) was moderately consumed, while fruits/vegetables (71.8%) and legume (60.0%) consumption was low.

**Table 5:** Body mass index of the subjects

Nutritional status (kg/m <sup>2</sup> )	Frequency	Percentage
Underweight (,18.5)	99	45.0
Normal weight (18.5 -24.9)	42	19.1
Overweight (25 -29)	75	34.1
Obese (>30)	4	1.8

Table 5 shows the body mass index of the respondents. Almost half (45.0%) were underweight and as much as 34.1% and 1.8% were overweight and obese respectively.

**Table 6:** Comparison between the nutritional status of the respondents and source of food consumption.

Nutritional status	Place of food consumption			
	Home		Restaurant	
	F	%	F	%
Underweight	38	49.4`	61	42.7
Normal weight	26	33.8	16	11.2
Overweight	13	16.8	62	43.4
Obese	0	0.0	4	2.8
Total	77	100	143	100

$\chi^2 = 26.3052$ , P value  $< 0.00001$

Table 6 shows the Chi square test between nutritional status and the source of food consumption. The finding showed there is a significant relationship ( $P < 0.05$ ) between nutritional status and source of food consumption. Many (43.4%) of the respondents who ate in restaurants were overweight and 2.8% were obese while Some (49.4%) of the respondents who ate at home were underweight and none was obese.

### Discussion

The result of the study revealed that many of the respondents were matured men between 31 - 50 years of age. This explained why 60.9% of them were married with families. Olurinola, Fadayomi, Amoo and Ola-David (2014) reported that one of the characteristics for distinguishing people in African societies is marital status. Traditionally, marriage confers respect, prestige and responsibility on people which includes the care of women/ wives, children and members of the extended family. Little wonder many (44.5% and 36.8%) had family sizes of 4-6 and 7 -9 respectively. This showed that the subjects had many mouths to feed.

The United Nations (UN) Report (2011) opined that individuals with large families need to be economically empowered in order to assist them meet with the responsibilities of family life. Majority (85.9%) of the respondents were Christians. The result is in line with the Abia State

official portal (2014) which opined that Abians are predominantly Christians of different denominations and that there were good number of traditional worshippers and few Muslims in the state.

Although the (UNFP 2007) rated Abia State a fairly literate state in Nigeria, yet the educational status of the respondents showed that some (6.8% and 11.4%) had no formal education and dropped out of school respectively. Many (45.0%) had up to secondary school education. This is not good as the level of education had been shown to be one of the important factors that adequately empowers individuals to make good economic choices and consume adequate diets (Hossain 2011).

The high cost of acquiring the tricycle (between N180 - >N750.000) suggested a big burden to the riders and may have made many (56.4% and 23.2%) to have acquired their tricycle on hire purchase and others ride for owners on commission basis. The situation was further compounded by the high cost of average monthly maintenance cost of the tricycle with the daily levy charged by the government. This may have a negative toil on the purchasing power and dietary habit of the drivers who were the bread winners of their families. Adekany (2014) had reported that with improved purchasing power, individuals can get better and more nourishing meals



which is a key driver to good dietary pattern.

The dietary pattern showed that more than half (59.1%) of the respondents skipped meals and ate only twice in a day. Meal skipping is an unhealthy practice which deprive the body of necessary nutrients and energy needed for optimal performance (Ndukwe 2014). The major reasons for skipping meals were time constraint (60.0%) and high cost of food (40.0%). This showed that the respondents were always in a hurry to catch up with customers in order to make more money. Majority (66.4%) ate food in restaurants and spent between N150 - N300 per plate. Ekpenyong and Akpan (2013) opined that restaurants were the primary settings where the public buy and eat quick meals. However, the setting was often designed to maximize profit and encourage impulse buying. Moreover most of the food served in restaurants are salt laden which the owners use to improve taste.

Soup and garri/fufu were the most common foods consumed by the respondents followed by rice, biscuits, groundnuts, meat pie/cake and bread/doughnut. Orange was the common fruit and water the common beverage consumed by the respondents. The weekly consumption pattern showed that roots and tubers were the only plant based foods which were consumed on a regular basis. Cereals were consumed moderately but fats/oil, snacks, beverages, legumes, fruits and

vegetable consumption were low. The high snack consumption may be as a result of the rush by the respondents to meet up with customers. Even though snacks can help supply nutrients to the body, but they are not enough to provide all the nutrients required by the body. High intake of fat/oil and fish/meat may also not be very good for the respondents considering the fact that majority of them were above 40 years. Apart from the that, high consumption of some animal products (like fatty meat) could lead to increased cholesterol in the blood. Research (Chinenye, Oko-Jaja and Young 2013) had shown that the prevalence of many NCDs increases with age. Moreover, inadequate consumption of vegetables and fruits are predisposing factors to non-communicable diseases. This is because vitamins contain antioxidants which help to fight against diseases (Onyeka and Nwambekwe 2007). The data on nutrition status showed that 45.0% of the respondents were underweight and 34.1% overweight. This tallied with the report of Onimawo (2014) that the under developed countries are facing the double burden of malnutrition (under and over nutrition) which is as a result of inadequate selection, consumption and utilization of foods and its nutrients. Moreover, overweight (25 - 29.9 kg) and obesity (30kg) as categorized by Wardlaw and Smith (2008) is linked to excessive intake of saturated fats and cholesterol which results to diet related diseases rather

than under nourishment. Underweight (<18.5kg) has also been linked to many NCDs and reduced work capacity. The Chi-square test showed a significant relationship between source of food consumption and dietary habit.

### Conclusion

The findings of the study showed poor dietary habits which negatively affected the body weight and nutritional status of the respondents. The poor dietary pattern was necessitated by time constraint, high cost of food and over consumption of snacks, soft drinks, fats and oil and low consumption of fruits and vegetables. This translated to high level of under and over nutrition among the respondents. Overweight was more pronounced among those who eat out probably because restaurants serve large portion size of food.

### Recommendations

1. There should be intensive public nutrition education on adequate and proper dietary habits.
2. The issue of poverty alleviation should be revisited to make it more result oriented so that the funds mapped out for such programmes gets to the right and target population

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## **Influence of Breakfast Habit on Body Mass Index: Case Study of Undergraduates of Abia State University Uturu.**

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### **Abstract**

The study investigated the effect of breakfast consumption on Body Mass Index (BMI) of undergraduates of Abia State University, Uturu (ABSU). It determined: the socio demographic characteristics of respondents, their breakfast consumption pattern and types of food they consumed at breakfast. It also ascertained reasons for skipping breakfast and if it had any influence on the body mass index of the undergraduates. A random sample of 120 undergraduates was drawn from the Faculty of Education, ABSU. Questionnaire was used for data collection and anthropometric measurements of weight and height were taken. BMI was calculated. Data were analyzed using descriptive statistics. The results showed among others, that some (16.6%) of the undergraduates skipped breakfast due to time constraints, others (14.6%) to prevent weight gain. It recommended among others that undergraduates should be enlightened on the importance of eating nutritious breakfast to help maintain adequate and normal body mass index.

**Keywords:** Breakfast, habit, body mass index, undergraduates.

### **Introduction**

Globally, the prevalence of high body mass index (BMI) among young adults have remarkably increased over the

past decades (Ogden, Carroll and Flegal 2008). Flegal (2013) had estimated that 10 percent (10%) of school age children are either

overweight or obese worldwide. With Americas leading at (32%) followed by Europe (20%) and the Middle East (16%) (Jonas, Thompson-McComick, Thomas, Bainvualiku, Khan and Becker (2010); Lobstein, Baur, Uauy and IASO (2014). Some scholars (Cho, Dietrich, Brown, Clark and Block 2008; Fujiwara 2006) have suggested that a definition of breakfast should include all the elements that make it up, such as the component of time, type of food eaten as well as the portion size. Although there is no universal definition that included all these elements. Okpala and Okponibuot (2013) defined it as the first meal of the day often eaten early in the morning after rising from night's sleep before undertaken work for the day.

Breakfast has been described as the most important meal of the day and a good indicator of a healthy lifestyle (Mahoney, Taylor, Kanarek and Samuel 2005). This is because it breaks the overnight fast, replenishes the supply of glucose and gives energy to the body. According to Okpala and Okponibuot (2013), the gap of about twelve hours between dinner and breakfast, may lead to energy depletion which results in glucose deprivation. If this deprivation occurs in sufficient degree, it can result in a rapid disturbance of the cerebral functions. In spite of its importance, research (Nicklas, Reger, Myers and O'Neil 2000; Gross, Bronner, Welch, Dewberry-Moore and Paige, 2004; Ndukwe 2014) have shown that it is

the most frequently skipped meal. Breakfast skipping is on the increase globally among all ages. In Nigeria, Umairah, Yahya, Datin and Yusof (2012) reported over half (55.1%) and Ndukwe (2014) reported 33.4 percent breakfast skipping among pupils in primary schools. For the secondary school students, Onyiriuka, Umoru and Ibeawuchi (2012) reported that 48.1percent skipped breakfast. While Oladapo, Roland Ayodele, Quadiiri and Oluranti (2014) reported 52 percent of Nigerian undergraduates do skip breakfast.

Various authors have indicated reasons why people may skip breakfast to include lack of time for preparing and consuming meals (Cho *et al.* 2008), insufficient feeding allowance and busy schedule (Oladapo *et al.* 2014) as well as stress, lack of parental control (example when parents work outside the town or when they are divorced or separated (Mullie, De-Ridder, Deriemeaker, Davingeaud and Hobbelink 2006).

The university age has been identified by Arnette (2009) as the age (18 -25years) of emerging adulthood and unique developmental period because individuals may be at risk of a range of adverse health behaviours which may affect them later in life. According to Freitas, Araujo, Lima, Peereira, Alencar and Damasceno (2013), the age range of 18 - 25 years corresponds to probably the first time many young adults leave home for the first time and will have to take



responsibility of their own housing, feeding and managing their own finances. This may expose them to inappropriate lifestyle habits such as skipping of meals, consumption of fast foods, and eating nutritionally inadequate diets which can result in a number of non-communicable diseases including obesity later in life (Salvaro, 2009).

Research (Enwere and Obidiora 2006; Sandercock, Voss and Dye 2010) reported that students who skipped breakfast battle with low energy level, feel tired before mid day, are irritable, apathetic, weak, dull, dizzy, lack concentration, feel sick and sleepy at school as well as experience low cardio-respiratory fitness level. Eberechukwu, Eyam-S, and Nsan (2013) noted that skipping breakfast increases the risk of hypoglycemia or low blood sugar. This condition can bring symptoms such as dizziness, weakness and decline in physical activities. More so, breakfast skipping has been associated with negative dietary practices such as over-eating which exposes individuals to obesity. The work of Balvin-Frantzen,, Trevino, Echon and Garcia-Dominic and Dimarco 2013) disclosed that children, adolescents and college students who habitually consume breakfast including ready-to-eat-cereal (RTE) have reduced likelihood of being overweight.

Breakfast skipping among students have been associated with poor academic performance, low cognitive performance as well as poor

mental functioning (Copper, Bandelow, and Nevill, 2013). Researches (Wesnes, Pincock Richardso Helm, and Hails 2003; Wesnes, Pincock Richardso Helm and Hails 2008; ) have also demonstrated that breakfast consumption positively affects children's cognitive performance, particularly in the area of memory and retention. Widdenhorn-Muller, Hille, Klenk and Weiland (2008) also showed that breakfast skipping negatively impacts on students ability to effectively solve problems . Their work showed that students who consumed breakfast tested higher in a standardized test score, were less absent from school, and were more in time to class. A study by Fujiwara, Sato, Awaja and Nakata (2007) observed menstrual irregularities among female undergraduates who skipped breakfast. The irregularities included severity of painful menses and irregular menstrual bleeds. According to Fujiwara (2003) and (Fujiwara 2006), young women who skipped breakfast have a significantly higher degree of dysmenorrheal symptoms and constipation than young women who ate breakfast suggesting a correlation between skipping breakfast and menstrual disorders.

Consuming breakfast can aid in maintaining a normal body mass index (BMI). De la Hunty, Gibson, and Ashwell, (2013) reported that adolescents and young adults who habitually consumed breakfast (including ready-to-eat-cereals) have

reduced likelihood of being over weight. Cross sectional (Berkey, Rockett, Gillman, Field and Colditz 2013) and longitudinal studies (Affenito, Thompson, Barton, Franko, Daniels, Obarzanek, Schreiber and Striegel-Moore 2015) have shown that regular skipping of breakfast is associated with greater BMI in all age groups. Jonas *et al.* (2010) reported that among some of the numerous behavioural changes contributing to overweight in youths residing in nations under going rapid economic and social changes, meal skipping has not been examined as a potential factor. Various degrees of overweight and obesity have been observed among undergraduates of Abia State University Uturu, yet, there are no published studies that have examined the influence of breakfast consumption on their BMI.

### Objectives of the Study

This major objective of this study was to investigate the breakfast habit and its influence on the body mass index (BMI) of undergraduates of Abia State University, Uturu. Specifically the study:

1. Identified weekly breakfast consumption frequency of the respondents.
2. Determined common foods undergraduates consumed as breakfast.
3. Identified the reasons for skipping breakfast.

4. Determined the influence of breakfast skipping on the BMI of undergraduates.

**Research Questions:** The following research questions guided the study:

1. What is the socio demographic characteristics of the respondents?
2. What foods were undergraduates consuming at breakfast?
3. How frequent does undergraduates consume breakfast in a week ?
4. What are their reasons for skipping breakfast?
5. What is the BMI classification of the respondents and does breakfast skipping have any influence on it.

### Methodology

**Area of study:** The study was carried out in Abia State University, Uturu . The university was established in 1981. It has two main campuses, its main campus is in Uturu and the faculty of Agriculture and veterinary medicine is housed by the campus in Umuahia, Abia State capital. ABSU offers undergraduates, graduates and doctorate degrees with about 20,389 students (18,940 undergraduates, 1139 post graduates and 300 doctoral students).

**Design of the study:** The study was a descriptive cross sectional study.

**Population of the Study:** The population for the study comprised all the regular undergraduates of the university. ABSU is made up of 10 faculties (Agriculture and Veterinary Medicine, Biological and Physical Sciences, Business Administration,

College of Medicine, Education, Environmental Studies, Basic Medical Sciences, Clinical Medicine, Health Sciences, Humanities and Social Sciences)(ABSU , 2016) .

**Sample of the Study:** The stratified random sampling technique was used to select 10 percent of the undergraduates of the Faculty of Education (made up of 6 departments : Curriculum and Teacher Education, Educational Foundations, Psychological Foundations, Educational Management and Planning, Science Education and Vocational Education with about 1005 students (statistics from Faculty office) which was approximated to 130 undergraduates for ease of calculation and to accommodate drop outs.

**Instrument for Data Collection:** The instrument for data collection was a questionnaire and anthropometric measurements. The questionnaire was development by two lectures in the department of Department of Vocational Education (ABSU) and validated by two lecturers in Home Economics Unit (AIFCEO). Cronbach Alpha Statistics was used to determine the internal consistency of the items and reliability coefficient of 0.91 was obtained.

#### **Method of Data Collection**

**Questionnaire:** The questionnaire was made up of 3 sections with 8 questions

(4,3 and 1 respectively).130 questionnaires was distributed through direct approach by hand. This was to ensure maximum return of the questionnaire. However 120 (60 males and 60 females) duly filled questionnaire was used for the study.

**Anthropometric measurements :** Anthropometric measurements of height and weight were also taken to determine the BMI of undergraduates with the help of two trained research assistants. (The assistants were taught to master how to take adequate height and weight measurements). The weight of the subjects was measured to the nearest 0.1kg using a portable bathroom scale (HARSON EMPERORS, model H89 BLACK). Height was measured to the nearest 0.1cm using a wooden heightometer. Body mass index (BMI) was calculated by dividing the weight measurement with the height measurement squared. Obesity was therefore classified as BMI greater than 30kg/m<sup>2</sup>.

**Data analysis technique:** Data was analyzed using frequencies, percentages and chi-square.

#### **Findings and Discussion**

The demographic characteristics of the respondents showed that many (52.5%) were in the 20-23 years age range. The mean age was 22.8 years, 85% of the respondents were single while 45% reside in the school hostels.

**Table 1:** Common Foods Undergraduates Consumed as Breakfast ( n = 120, the respondents were allowed to choose more than one option).

Foods	>5times F (%)	3- 5 times f (%)	<1 -2times f (%)
Beverages	111 (92.5)	9 (7.5)	0 (0.0)
Meat/Fish	110 (91.6)	10 (8.4)	0 (0.0)
Sweetners	105 (87.5)	15 (12.5)	0 (0.0)
Snacks	99 (82.5)	21 (17.5)	0 (0.0)
Margarine/ butter	80 (66.7)	3 (29.2)	5 (4.1)
Cereals	68 (56.7)	42 (35.0)	10 (8.3)
RTE	65 (54.0)	50 (41.5)	5 (4.5)
Meat products	80 (66.7)	35 (29.2)	5 (4.2)
Roots / tubers	10 (8.3)	101 (84.2)	9 (7.2)
Nuts	8 (6.7)	95 (79.2)	17(14.2)
Fruit	3 (2.5)	5 (4.2)	105 (87.5)
Legumes	17 (14.2)	35 (29.2)	68 (56.6)

Table 1 shows the foods respondents consumed as breakfast. Beverages (92.5%), meat/fish (91.6%), sweetners (87.5%), snacks (82.5%) including processed oils like margarine on bread and milk /egg (66.7%) respectively were consumed more than five times

in a week. Roots/ tubers (84.2%) and nuts (79.2%) were consumed between 3 - 5 times in a week. Fruits (87.5%) and legumes (56.6%) were rarely consumed between <1 - 2 times in a week.

**Table 2:** Frequency of Breakfast Consumption in a Week

Variables	Female F (%)	Male f (%)	Total (f) (%)
Everyday	25 (41.7)	20 (33.3)	45 (37.5)
5-6 times	12 (20.0)	11 (18.3)	23 (19.2)
3 -4 times	17 (28.3)	19 (31.7)	36 (30.0)
1 - 2 times	6 (10.0)	10 (16.7)	16 (13.3)
Total	60 (50.0)	60 (50.0)	120 (100)

Table 2 shows how frequent the respondents consumed breakfast in a week. Few (37.5%) of the respondents indicated that they ate breakfast everyday, the remaining skipped breakfast. Some (30.0% and 13.3%) consumed breakfast only 3 - 4 and 1 - 2 times in a week respectively.

Table 3: Reasons for Skipping Breakfast

Variables	Female f (%)	Male f (%)	Total f (%)
Time constraint	10 (16.7)	10 (16.7)	20 (16.6)
Prevent weight gain	10 (16.7)	7 (11.7)	17 (14.6)
Woke up late	7 (11.6)	7 (11.7)	14 (11.6)
No money	2 (3.3)	11 (18.3)	13 (10.7)
Dislike breakfast	4 (6.6)	3 (5.0)	7 (5.7)
Not hungry	2 (3.3)	2 (3.3)	4 (3.3)
Never skipped breakfast	25 (41.7)	20 (33.3)	45 (37.5)

Table 3 showed some of the reasons given by the respondents for skipping breakfast. This include: time constraint (16.6%), prevent weight gain (14.6%), woke up late 11.6% and no money 10.7%.

Table 4: Comparison of BMI of Regular Breakfast Eaters and Non Breakfast Eaters.

Class	Regular breakfast eaters f(%)	Regular breakfast skippers f(%)
Underweight	1 (1.5)	3 (5.7)
Normal	42 (61.7)	8 (15.4)
Overweight	18 (26.5)	18 (34.6)
Obese	7 (10.3)	23 (44.2)
<b>Total</b>	<b>68 (100)</b>	<b>52 (100)</b>

Chi - square 53.1243. p value is < 0.00001. Significant at p <0.05

When a comparison of BMI of regular breakfast eaters with non- regular breakfast eaters was done in Table 4, it was revealed that 26.5% and 10.3% of regular breakfast eaters were overweight and obese whereas 34.6% and 44.2% of regular breakfast skippers were overweight and obese. The Chi- square showed there is a significant difference between the BMI of regular breakfast eaters and regular breakfast skippers.

### Discussion

Information gathered from this study showed that 50% of the respondents were females and 50% males. About 45% reside in the hostel, and majority (85%) were single. The mean age of the respondents was 22.8 years. This agreed with the age of emerging adulthood identified by Arnette (2009) and Freitas *et al.* (2013), corresponding to probably the first time young adults will have to take responsibilities of their own welfare including their feeding habit. The breakfast consumption pattern of

undergraduates showed high intake of beverages (92.5%), sweeteners (87.5%), snacks (82.5%) and margarine/ butter (66.7%). Perry (2011) opined that these were empty calory foods that was high in fat but low in nutrients, vitamins, minerals, anti-oxidants and fiber. These foods were highly processed and have added sugars, examples include cake, biscuits, meat pie, doughnuts and soft drinks. Regular consumption of these foods and eating nutritionally inadequate diet including low consumption of fruits can result in a number of non communicable diseases including obesity (Salvaro, 2009). This may have contributed to the high prevalence of overweight and obesity (30% and 25%) observed among the respondents respectively.

The study confirmed that breakfast consumption is an important indicator of a healthy lifestyle but a cumulative percentage (62.5%) of the undergraduates skipped it at one time or the other within the week. The finding was similar to the work reported by Oladapo *et al.* (2014) that 52% of Nigerian undergraduates skipped breakfast. This is not a positive attitude as observed by Eberchukwu *et al.* (2013) because the brain makes use of the blood sugar (glucose) stored up overnight and if breakfast is skipped, by mid day, the sugar gets used up and people grow tired and irritable. Nadeem and Umair (2014) opined that students who skip meals are lazy, lose weight, often wake up late and miss lectures.

Skipping breakfast create a state of hunger, which can diminish the ability to learn and concentrate in class. Giovannihi, Agustinia and Shamir (2010) affirmed that students who ate breakfast are active, early to class, have enhanced memory retention, concentrate and participate actively in class.

The reasons undergraduates gave for skipping breakfast include: time constraint (16.6%), to prevent weight gain (14.6%), woke up late (11.6%) and no money (10.7%). Okpala and Okponibuot (2013) in a similar study had observed that the primary reason why undergraduates skipped breakfast was lack of time. Skipping breakfast to prevent weight gain was another major reason given by undergraduates. On the other hand Balvin-Frantzen *et al.* (2013) had shown that meal skipping is not very effective in preventing weight gain, rather it contributed to the development of poor eating habits such as snacking on high sugar and fat diets which eventually leads to overweight (Salvaro 2009). When the BMI of the regular breakfast skippers was compared with the BMI of regular breakfast eaters in the study, the breakfast skippers were found to have a significant high BMIs (34.6% and 44.2%), overweight and obese than the non breakfast skippers (26.5% and 10.3%) respectively. The Chi-square statistics also showed a significant difference between the BMI of regular breakfast eaters and regular breakfast skippers at  $< 0.05$ . This gave credence



to the fact that skipping breakfast cannot be regarded as a good dietary practice when one wants to lose weight. Similar observations by Okpala and Okponibuot (2013) showed that a higher percentage of overweight and obese students were found among non breakfast eaters when compared with regular breakfast eaters. The third National Health and Nutrition Examination Survey (2010) reported that adolescents and young adults who skipped breakfast had significantly higher body mass index than those who ate breakfast. This has been explained to be due to the fact that breakfast eaters tend to make healthier decisions in food choices than breakfast skippers. Breakfast is important in the overall health of the undergraduates and can improve performance and participation during studies.

### **Conclusion**

The study revealed that many undergraduates of the Faculty of Education ABSU skipped breakfast regularly. Those who ate breakfast consumed mainly beverages (softdrinks, cocoa drinks and tea), sweetners, snacks (cakes, buns, doughnuts, biscuits, meat pie) and processed oils (margarine or butter as spread on bread and biscuits). These are empty calory foods that may not provide all the nutrients needed for the normal functioning of the body, but have been identified as predisposing factors to diseases. This

may have contributed to the high prevalence of overweight and obesity observed among the respondents.

### **Recommendations**

1. The findings recommend the introduction of nutrition education (including adequate breakfast consumption and healthy feeding habit) as part of the orientation programmes organized for fresh students because it will go a long way to help the undergraduates make informed decisions on their breakfast habits which will in turn help reduce the risk of obesity with its accompanying health challenges.
2. The department of Home Economics can launch training and awareness campaigns in the campus to point out the dangers of breakfast skipping among undergraduates.
3. More professors of Home Economics and nutrition should be given slots for nutrition education seminars during the monthly inaugural lecture series presently championed by the present administration in the university.

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## **Contribution of Indigenous Vegetable Production to the Income Generation of Rural Vegetable Farmers in Egbeda Local Government Area of Oyo State**

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### **Abstract**

The study determined the contribution of indigenous vegetable production to the income of farmers in Egbeda Local Government Area of Oyo State. Five wards in Egbeda local government area were purposively selected due to their dominance in indigenous vegetable production. Thirty percent of registered indigenous vegetable farmers were randomly selected from each of the wards to give a sample size of 113 respondents. Data were analysed using frequency counts percentages, and Pearson's Product Moment Correlation (PPMC). The major findings include a high level income derived from indigenous vegetable production among farmers with an average yield of 2700 kg and an average monthly income of ₦50,740. Significant relationship existed between constraints faced by respondents and income generated from indigenous vegetable ( $r = -0.191$ ,  $p \leq 0.05$ ). The study recommends that more farmers should go into vegetable production because it is lucrative and to increase the food and nutrition security of the nation.

**Key words:** Contribution, Indigenous, Vegetable Production, Income

### **Introduction**

In Nigeria, indigenous vegetables are generally regarded as plant species grown and consumed in specific location as part of traditional diets and have the potential of being nutritious with anti-diabetic potentials (Udenta, Obiozoba and Oguntibeju, 2014). Their characteristics are easy to grow, fast maturing, and has very vigorous growth. Hence their current consumption by many rural dwellers is widespread. There are wide of indigenous leafy vegetables found in

Africa, which are chief sources of nutrients, vitamins, antioxidants, minerals and proteins. (Oladele, 2011). Some of the indigenous leafy vegetables are mainly used by inhabitants for medicinal purposes (Agboola, Adekunle, and Ogunjimi, 2015). Vegetable also form part of the daily staple diet of individuals and are rich in nutrients such as Vitamin A and Iron. Indigenous vegetable crops have a significant impact on both household food security and health among the rural vegetable farmers

(Legwanla, 2011). They provide sources of employments for those outside the formal sector in peri-urban areas because of their generally short production cycle, low investment and high yield (Kwenin, Wolli, and Dzomeku, 2011).

Over the year past, the role of indigenous vegetable farmers in the society cannot be underestimated because of its significant contribution both to the income of the rural farmers and the improvement in the economical stability of the country (Cervantes and Dewbre, 2010). The rural vegetable farmers have also engaged in relevant training with a view to improve the skills of farmers towards ensuring increased productivity, domestic supply and prevention of indigenous vegetable crops from extinction. (Baiphethi and Jacob, 2009). According to Chiwenge *et.al* (2011), indigenous vegetable crops are much easier to produce since they have adapted to the tropical environment. There are many examples of these crops (fireweed, garden egg, field pumpkin, Amaranth, Bologi, bitter leaf, snake tomato, glossy night shade, and fluted pumpkin). They may also be more profitably produced during specific periods of the year.

Indigenous vegetable production has become an important occupation for rural farmers because the crop can be harvested several times in a growing season. The productions of this vegetable play an important role in income generation and subsistence

in low income- households. As a consequence, offer an opportunity for people to earn living as producers and traders without large capital input (Adhikari, 2008). Despite the importance of these crops there are various production constraints such as lack of fertile soil, environmental depletion and degradation, pest and disease attack, inadequate capital among others. These lead to low level of productivity and consequently reduce the income derive from the indigenous vegetable. Despite several efforts by the government, extension agents, and research institutes to encourage the farmers to produce indigenous vegetable in order to increase their income, farmers have shown little interest in producing indigenous vegetable to increase their income.

#### **Purpose of the study**

The major purpose of the study was to investigate on the contributions of indigenous vegetable production to the income generation of rural vegetable farmers in Egbeda LGA of Oyo state.

- Measure level of income generated from indigenous vegetable among rural farmers in the study area.
- State constraints faced by the farmers in the indigenous vegetable production in the study area

#### **Research Questions**

The research question sought answers to the following questions:



1. What is the level of income generated from indigenous vegetable among rural farmers in the study area?
2. What are the constraints faced by the farmers in the indigenous vegetable production?

### **Hypotheses of the study**

1. There is no significant relationship between constraints faced by respondents and income derived from indigenous vegetable.

### **Methodology**

**Design of the study:** The study adopted a survey research method. It sought information from vegetable farmers who produce indigenous vegetables in Egbeda local government of Oyo state.

**Area of study:** The area of study is Egbeda local government area of Oyo state, Nigeria with an area of 191Km<sup>2</sup> and a population of 281,573 (NPC, 2006). Egbeda local government is divided into 11 wards. The climatic conditions of the area include 1350-2900mm mean annual rainfall and a temperature range of 500-730°F while relative humidity is low. The vegetation is rainforest type. It has heterogeneous population of Yoruba and Togolese.

**Population of the study:** The target population are males and females literate and illiterate indigenous vegetable farmers in Egbeda local government of Oyo state. Most of farmers were major producers of cash and food crops especially cocoa,

kolanut, oil palm, yam, cassava, maize and including indigenous vegetables.

**Sample of the Study:** Five wards were purposively selected from the 11 wards in Egbeda Local government Area (LGA) due to their high involvement in indigenous vegetable production. Simple random sampling techniques was used to select thirty percent from the list of three hundred and seventy seven (377) registered indigenous vegetable farmers in each of the randomly selected wards in the LGA to give a sample size of one hundred and thirteen (113) respondents.

**Instrument for Data Collection:** Questionnaire was used for data collection. The validity of the questionnaire was ascertained by three lecturers, two each from the Home economics unit and one from department of Agricultural extension and rural development of the University of Ibadan. The reliability of the instrument was tested using cronbach alpha to test the clusters. The coefficient of the reliability was 0.75, confirming the reliability and consistency of the instrument. The questionnaire comprised of two sections A and B. Section A solicited for responses about demographic characteristics of the respondents, namely age, sex, years of experience, section B contained questions relating to the three research questions.

**Data collection and analysis technique:** A total of one hundred and thirteen (113) copies of the

questionnaire were distributed to the respondents with the assistance of the two trained research assistance. A total of one hundred and ten (110) of the questionnaire was completed and retrieved representing (97%) recovery rate. Data were analysed by frequency

and percentage and represented as tables. Inferential statistics such Product moment Correlation (PPMC) was used to test the hypothesis.

### Findings

The following findings were made

**Fig 1:** Showing the average daily income (₦) derived from indigenous vegetable

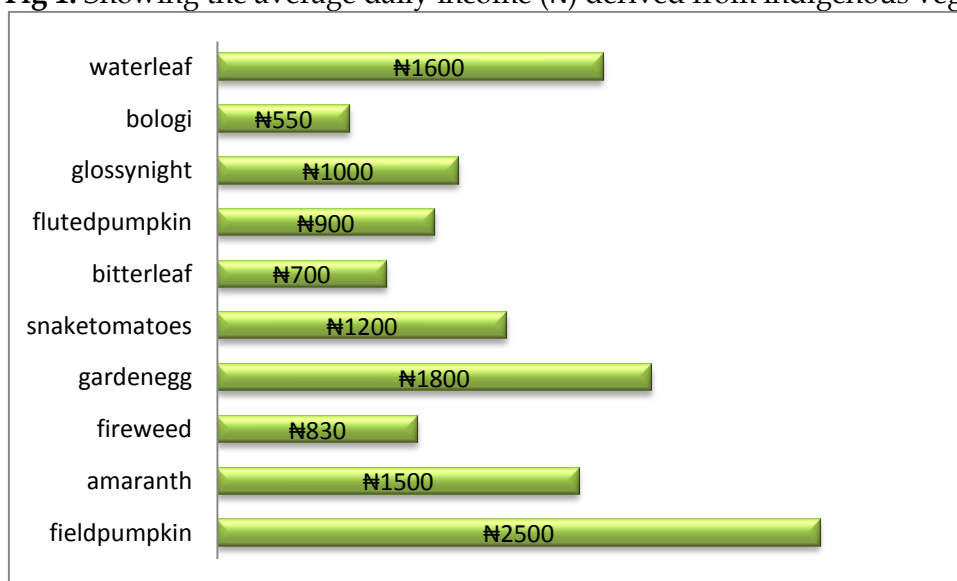


Figure 1: shows that an average income of ₦2, 500 was generated from daily sales of field pumpkin. The result further showed that an average income of ₦ 1,800, ₦ 1,600, ₦ 1, 500 and ₦1, 200 were generated from garden egg, waterleaf, amaranths and snake tomatoes.

**Table 1:** Percentage responses of farmers on level of production of indigenous vegetable production.

Level of income	Frequency	Percentage
Low	45	39.8
High	68	60.2

Table shows that more than half (60.2%) reported a high level of income from indigenous vegetable while the remaining 39.8% reported low level of income.

**Table 2:** Distribution according to the constraints faced by respondents

Constraints	Very severe	%	Severe	%	Not a constraint	Mean	Rank	
Lack of fertility of the soil	38	33.6	40	35.4	35	31.0	1.03	5 <sup>th</sup>
Environmental depletion and degradation	39	34.5	44	38.9	30	26.5	1.08	4 <sup>th</sup>
pest and diseases infestation	46	40.7	35	31.0	32	28.3	1.12	3 <sup>rd</sup>
Lack of improved seed	27	23.9	50	44.2	36	31.9	0.92	9 <sup>th</sup>
Inadequate capital	44	38.9	43	38.1	26	23.0	1.17	1 <sup>st</sup>
Inadequacy of planting materials	35	31.0	56	49.6	22	19.5	1.13	2 <sup>nd</sup>
High level of illiteracy	25	22.1	37	32.7	51	45.1	0.77	8 <sup>th</sup>
climate change	29	25.7	54	47.8	30	26.5	0.99	6 <sup>th</sup>
Lack of technical know how	33	29.2	43	38.1	37	32.7	0.96	7 <sup>th</sup>

Table 3 shows inadequate capital (1.17) to be the most severe constraint faced by the respondents and it was ranked first. Inadequate planting material (1.13) was ranked second. Pest and disease infestation (1.12) and environmental degradation (1.08) were ranked third and fourth respectively. However, high level of literacy (0.77) and lack of the technical (0.99) were not major constraints faced by the respondents.

**Table 3:** Categorization of level of indigenous vegetable production

Production level	Freq.	%	Mean
Low (0-9)	79	69.9	
High (10-20)	34	30.1	
Total	113	100	2700kg

The mean 2700kg was derived by obtaining average score of the respondents on their level of indigenous vegetable production and respondents above the mean were categorised as high level of production while those below the mean were regarded as low. Table 1 reveals that most of (69.9%) the respondents recorded low level of indigenous vegetable production.

**Table 4:** Distribution according to the relationship between constraints faced by the respondents and their income generated from indigenous vegetable

Variable	r	p	Decision
Constraints	-0.191	0.042	Significant

The Pearson Product Moment Correlation (Table 4) shows that there is a significant relationship between the constraints faced by respondents ( $r = -0.191, p \leq 0.05$ ) and the income generated from indigenous vegetable production. This shows that constraints had negative effect on the income generated by respondents in the study area.

### Discussion on Findings

The finding reveals that most of the respondents recorded low level of indigenous vegetable production. This result is corroborated with the findings of Makarau *et.al* (2014) that inadequate capital for vegetable production is a major constraint faced by farmers. The implication is that farmers who want to produce at large scale are limited as a result of financial inadequacies. Inadequate planting material was ranked second which suggests that farmers are restricted to farm inputs within their reach which will adversely affect their level of production and consequently their level of income from the enterprise. Pest and disease infestation and environmental degradation were ranked third and fourth respectively. The implication of this is that the quality and quantity (yield) of vegetables will be affected and this in turn affects the returns or profit from the enterprise. However, high level of literacy and lack of the technical were not major constraints faced by the respondents. The finding is confirmed

by Fabiyi and Akande (2015) that rural farmers are faced with constraints in their farming activities, and this reduces their productivity. **It also** shows that an average income of ₦2,500 was generated from daily sales of fluted pumpkin, an average income of ₦1,800, ₦1,600, ₦1,500 and ₦1,200 were generated from garden egg, waterleaf, amaranths and snake tomatoes respectively. This finding suggests that indigenous vegetable is a viable enterprise and farmers should be provided with farm inputs so as to expand their scale of production and consequently generate more profit. This is in line with the findings of Oladele (2011) that indigenous vegetable is a means of sustaining farmers' income. There is a significant relationship between the constraints faced by respondents ( $r = -0.191, p \leq 0.05$ ) and the income generated from indigenous vegetable production. The negative correlation implies that the more constrained faced by farmers, the less income generated from indigenous vegetable production. This result is in consonance with Nor and Madukwe (2000) assertion that increased agricultural productivity and enhanced farmers income are only attainable when effective agricultural system is put in place.

### Conclusion

The major constraints faced by respondents were inadequate credit facilities, inadequate planting materials, pest and disease infestation

and environmental degradation climate change. The level of indigenous vegetable production in the study area was on low with an average yield of 2700kg and an average income of ₦50,740. Age, farm size, educational qualification and constraints faced by respondents all had influence on the income generated from indigenous vegetable. Therefore the government should subsidies cost of inputs (i.e. improved seeds, subsidies cost fertilizer and farm implement) so as to encourage more farmers to purchase and use them judiciously.

### Recommendations

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

- Government should set up more institution where extension agents can be well trained on how to disseminate new technology to the vegetable farmers so as to increase their level of production.
- Government and banks should give out loans to vegetable farmers so they can enlarge their enterprise and purchase modern equipment such as harrowing, plough etc.
- Government should of inputs (i.e. improved seeds, subsidies cost fertilizer and farm implement) so as to encourage more farmers to purchase and use them judiciously.

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## **Common Causes of Accidents and Required Safety Practices in Pre-Primary School Classrooms in Enugu State, Nigeria.**

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### **Abstract**

The study investigated common causes of accidents and required safety practices in pre-primary school classrooms in Enugu state, Nigeria. Three research questions and one null hypothesis at 0.05 level of significance guided the study. Descriptive survey design was adopted for the study. The population for the study was 2,242 pre-primary schools. The sample size was 400 administrators. Structured questionnaire validated by three experts was the instrument used for data collection. Data were analyzed with mean, percentages and t-test. The result showed 14 common causes of accidents in the classrooms with overall  $\bar{X}$  2.8 to 3.2 accepted by the respondents. There was no significant difference in the mean responses of administrators on the causes of accidents in preschools classrooms based on school types ( $p > 0.05$ ). Only three safety practices were presently adopted in the classrooms:- provision of adequate child sized facilities, well equipped first aid kits, installation of safety devices with 66%, 63% and 52% respectively. Thirteen safety practices outlined were highly rated (81%-97%) required for adoption in the preschool classrooms. Going by the numerous causes of accidents, the study recommends effective and timely implementation of the rated safety practices in the classrooms to ensure safety of all users.

**Key words:** - Safety, practices, pre-primary, schools, classrooms, accidents.

### **Introduction**

Accidents constitute one of the main causes of death among children aged 1-5 years. Accident is an unplanned, unexpected, and undersigned event

which occurs suddenly, causes injury or loss, a decrease in value of the resources, or an increase in liability. The association for Behavioral and Cognitive Therapies (ABCT), (2012)

opined that the leading killer of children in the world including Nigeria is accident/injury. Henry (2010) reported that 200,000 children every year visit US emergency room for injuries sustained on playgrounds. This could be understood since children engage in many physical activities, without considering danger in the process. Report by Eniola (2011) indicated that 400,000 people between childhood and 24 years die around the world each year through accidents while millions get injured. In a study on accidental deaths in Niger Delta Region of Nigeria by Seleye- Fubara and Ekere (2003) showed that 20.1% of the cases occurred in preschool age children.

Varieties of accidents that happen in pre-primary schools include: fall, burns & scalds, poisoning, drowning, head injuries, insect sting, and muscle strains (Amirat, Abd El-Aziz & Salwa, 2014.& Bulus, Lar, Remon, Inyang, Shu'aibu,& Aboiyar, 2015) Accidents/injuries interfere with the orderly progress of activities in the preschools. The sources of accidents/injuries in preschools are many. Charlotte (2001) outlined the sources to include:- the entrance and exits of the activity areas, unprotected windows, furniture/equipment, classroom, toys and supplies, incomplete building sites, and children fighting. Many factors/causes are responsible for accidents in preschools and are classified into human and environmental factors. Human factors/causes are those

behaviors that affect the wellbeing of individuals.

Environmental factors/causes are prevailing conditions within and around the preschools that could cause accidents.

The preschool age is characterized by rapid mental and physical development. Some of the characteristics preschoolers typically display include: curiosity, gaining strength and coordination, engage in pretend play, and lots more (Segal, Bardige and Leinfelder, 2006). The preschooler therefore, requires stimulation and activities that will provide fun, help in the physical development and early learning (Amirat, *et al.*, 2014). In view of the preschoolers' characteristics and their need for stimulation and activities, the necessity for provision of enabling environment is of paramount importance. Such environment could provide them with opportunities and age appropriate facilities for play, stimulate learning and be appropriate for physical activities (Francis, 2008). The pre-primary school is expected to provide such environment.

Pre-primary school is an educational institution for children prior to their entering the primary school. Typical pre-primary school environment is usually organized in basic activity areas where specific preschool activities take place. These activity areas include the classroom, playground, bathroom/toilets, food preparation and eating area etc. The preschool classroom is an environment where young children

can safely explore and learn (Thomson, 2010). According to Diana (2013), preschool classrooms are usually organized around interest areas or learning centers. These defined areas allow children to play and explore materials with the guidance of the teacher either as individuals or in small groups. Pre-primary schools have lots of activities that are fun and entertaining for the preschoolers. The activities help to mold and channel preschooler's growth and set the foundation for better learning and development. Preschool activities include: reading, writing, mathematics, science, social studies, art and crafts, recipes and games (Catherine, 2012). Most of these activities are performed by the teachers, nannies and preschoolers in the preschools. The administrators are responsible for the provision of equipment and facilities, safe environment, adequate supervision of teachers in the preparation and execution of daily activities among others. For effective participation of the teachers and the preschoolers in the classroom activities, the classrooms should be equipped with child appropriate materials and equipment such as tables, chairs, toys, toy racks, bookshelves, computer, books, television set and so on. The preschool activities as well as the equipment and materials used therein frequently give rise to different forms of accidents or injuries as the class teachers or nannies and the

preschoolers interact with them during indoor activities.

Accidents and injuries among preschoolers could be prevented or reduced to ensure safety in the preschool classroom environment. The prevention of childhood accidents is identified as one of the key indicators in the 2013-2016 Public Health Outcomes Framework for England (Public Health & Child Accident prevention, 2013). Accident prevention includes all measures taken in an effort to save lives, escape from injury, lessen the degrees of injury, and reduce loss of properties. According to European child safety Alliance (2009), it is estimated that if all strategies known to be safe are adopted in preschools approximately 90% of the accidents/injuries could be prevented. The prevention of accidents/injuries in preschools classrooms demands that consciously planned measures or practices should be taken. These accident preventive measures are safety practices. Safety practices are sets of practices or measures that ensure the safety of the workers, equipment and the environment in general (Olaleye, 2012). Safety practices in preschool classrooms are crucial because safety is one of the basic needs of the child. Thus, adequate development of the child cannot take place in a hazardous environment.

Maduewesi, (2002) and Chukwu, (2010) observed that preschool environment including classrooms, playgrounds in Enugu state was

inadequate for physical learning, it follows then that pre-primary schools in Enugu state need to adopt safety practices in order to cut down or eradicate the high prevalence of childhood accidents, injuries and even death. The need to adopt safety practices in preschool classrooms in Enugu state is equally urgent since majority of the preschools are run by private individuals and organizations without specified standard guidelines on safety.

#### **Purpose of the Study**

The major purpose of this study was to investigate the common causes of accidents and safety practices required in pre-primary school classrooms in Enugu state. Specifically, the study:-

- 1 identified common causes of accidents in the classrooms in pre-primary schools in Enugu State
- 2 identified safety practices presently adopted by administrators in the classrooms in pre-primary schools in Enugu state.
- 3 determined safety practices required for adoption by the administrators in the classrooms in pre-primary schools.

#### **Research Questions**

- 1 What are the common causes of accidents in the classrooms in pre-primary schools in Enugu State?
- 2 What are the safety practices presently adopted by the administrators in the classrooms in pre-primary schools in Enugu State?
- 3 What are the safety practices required for adoption by the

administrators in the classrooms in pre-primary schools in Enugu State?

#### **Hypothesis**

The study tested the null hypothesis at 0.05 level of significance.

**Ho<sub>1</sub>:** There is no significant difference in the mean responses of administrators in public and private pre-primary schools on the causes of accidents in the classrooms in Enugu state.

#### **Methodology**

**Design of the study:** The study adopted a descriptive survey research design.

**Area of the study:** The study area was Enugu state located in the South East of Nigeria. The state is made up of seventeen (17) local government areas. There are six education zones in the state. There is good number of private and public pre-primary, primary and secondary as well as tertiary institutions in the state. The people are interested in educating their children from infancy to adulthood.

**Population for the study:** The population for the study consisted of 2,242 pre-primary schools in the area. These were made up of 1,034 and 1,208 private and public schools respectively. The population size of the school administrators was 2,242. (Ministry of Education Enugu state, 2011)

**Sample and Sampling Technique:** A multi-stage sampling technique was adopted for the study. Yamane 1967 formula was used to select a sample of

400 pre-primary schools 188 private and 212 public for the study. The number of pre-primary schools to be selected in each zone was determined by simple ratio. All the pre-primary school kindergarten administrators (400) in the sampled pre-primary schools 188 private and 212 public were used for the study.

**Instrument for Data Collection:** Common Causes of Accidents and Safety Practices required in the pre-primary school classrooms questionnaire" was the instrument used for the study. Four and two points scale response options were used. The questionnaire was face validated by three experts from University of Nigeria, Nsukka, from Art Education, Vocational Teacher Education, and Library Science Departments. The reliability of the instrument was determined using

Cronbach Alpha reliability method and reliability coefficients of 0.97 and 0.87 were obtained.

**Method of Data Collection and Analysis:** Data was collected by the help of three trained research assistants by hand within four weeks, coordinated by the researcher. The 400 copies to the questionnaire given to the preschool kindergarten administrators were all duly completed and retrieved. This represents a 100% return rate. Mean and percentage were used to answer the research questions, while t-test was used to test the null hypothesis at 0.05 level of significance

#### Findings of the study

#### Common causes of accidents in the classrooms in pre-primary schools in Enugu State.

**Table 1:** Mean responses ( $\bar{X}$ ), standard deviation (SD), t-cal and p-values on common causes of accidents in the classrooms in pre-primary schools in Enugu state. (N=400:- private=188, public=212)

S/ N	Administrators Common causes of accidents in the Classrooms	Private		Public		Over- all $\bar{X}$	Over all SD	DEC	t-cal	p-values	Remarks
		$\bar{X}_1$	SD <sub>1</sub>	$\bar{X}_2$	SD <sub>2</sub>						
1	Inadequate provision of age appropriate classroom furniture and equipment	3.1	.91	3.2	.84	3.2	.88	A	-1.615	.107	NS
2	Poor, worn out floor covering or layout	3.1	.84	3.2	.79	3.2	.82	A	-1.244	.214	NS
3	Lack of ample space	3.0	.94	3.2	.79	3.1	.87	A	-1.615	.107	NS

4	Excessive cold or heat	3.1	.91	3.0	.97	3.1	.94	A	.567	.571	NS
5	Unprotected windows	3.0	1.1	3.1	1.1	3.1	1.1	A	.222	.824	NS
6	Poor storage facilities	3.1	.90	3.0	.98	3.0	.95	A	.829	.407	NS
7	Dilapidated building	3.0	1.1	3.1	1.0	3.0	1.1	A	-.675	.500	NS
8	Poor ventilation	3.0	.99	3.0	.96	3.0	.97	A	-.823	.114	NS
9	Provision of none age appropriate classroom materials and equipment	3.0	.94	3.0	.89	3.0	.91	A	.271	.787	NS
10	Lack of safety equipment e.g. Fire alarm	3.0	.99	3.0	.92	3.0	.95	A	-.235	.814	NS
11	Inadequate illumination or poor lighting	3.0	1.0	3.0	.94	3.0	.98	A	-.085	.932	NS
12	Excessive noise	2.9	.99	2.9	.98	2.9	.98	A	.165	.869	NS
13	Hazardous location of the classroom	2.9	1.1	2.9	1.0	2.9	1.1	A	.329	.742	NS
14	Presence of poisonous/ toxic substances	2.9	1.0	2.8	1.1	2.8	1.1	A	-.816	.415	NS

**Key:**  $\bar{X}_1$  = Mean for private school administrators,  $SD_1$  = standard deviation for private school administrators, A= Accept,  $\bar{X}_2$  = mean for public school administrators,  $SD_2$  = standard deviation for public school administrators, Dec. =Decision, Cluster mean=3.0.

Table 1 shows 14 accepted common causes of accidents in the pre-primary school classrooms rated by preschool administrators in Enugu State. All the items listed were accepted by the administrators as common causes of accidents in the classroom. Eleven items had their overall mean from 3.0 to 3.2 up to and above the cluster mean of 3.0 and were ranked 1<sup>st</sup> to 11<sup>th</sup>. The eleven items had corresponding overall standard deviations less than 1.0. This showed similar ratings among the respondents

in the items. Table 1 also showed that all the items had their exact p-values greater than 0.05 level of significance. The 14 items showed no significant differences (NS) in the mean ratings by administrators in private and public pre-primary schools on the causes of accidents in the classrooms. The null hypothesis  $H_0$  for all the items is therefore accepted.

**Safety practices presently adopted by the administrators in the classrooms in pre-primary schools in Enugu State.**



**Table 2:** Frequency counts F and percentage % responses on the safety practices that are presently adopted in the classroom in pre-primary schools by the administrators. (N=400:- private=188, public=212,)

S/ n	Safety Practices presently adopted in the Classroom	Private Administrators				Public Administrators				Total		Dec
		Not Adopted		Adopted		Not Adopted		Adopted		F (P)	%	
		F	%	F	%	F	%	F	%			
<b>Activity Area Related Safety Practices</b>												
1	Provision of adequate child sized classroom facilities	117	62	71	38	127	60	85	40	156	39	R
2	Provision of well equipped first aid kits	129	69	59	31	153	72	59	28	118	30	R
3	Installation of safety devices like fire extinguisher, alarm	143	76	45	24	171	81	41	19	86	22	R
4	Floor/mats/carpets in good condition to prevent tripping and slipping	108	57	80	43	139	66	73	34	153	38	R
5	Ensure adequate ventilation	70	37	118	63	78	37	134	63	252	63	A
6	Provide adequate lighting	94	50	94	50	98	46	114	54	208	52	A
7	Noise should be controlled	78	41	110	59	58	27	154	73	264	66	A
8	Use of finger jam protectors on the door	136	72	52	28	156	74	56	26	108	27	R
9	Provided ample space for the number of children	110	59	78	42	124	59	88	42	166	42	R
10	Prompt repairs and regular maintenance of facilities	103	55	85	45	118	56	94	44	179	45	R
11	Recruiting qualified teachers and nannies	112	60	76	40	122	58	90	43	166	42	R
12	Organizing safety training for workers	120	64	68	36	147	69	65	31	133	33	R
13	Securing windows and stair cases properly	101	54	87	46	133	63	79	37	166	42	R

**Key:** F: Frequency count, % = percentage, Dec=Decision, Cluster F (P) =166, A=accept, R= Reject

Table 2 shows three safety practices presently adopted in the classrooms in pre-primary schools rated by preschool administrators in Enugu State. The 13 safety practices listed for the classrooms were rated by the respondents with varying percentages. Only three items had percentages 66.0%, 63.0% and 52.0% above 50.0%

the adoption acceptance level. Seven items had their total adoption frequency counts up to the cluster adoption frequency count 166.

**Safety practices required for adoption in the classrooms in pre-primary schools in Enugu State.**

**Table 3:** Frequency counts (F) and percentage (%) responses on the required safety practices in the classrooms in pre-primary schools in Enugu State. (N=400:- private=188, public=212.)

S/ no	Required safety practices in the  Classrooms	Private Administrators				Public Administrators				Total F(lm)	%	Dec
		Important F	Not important %	Important F	Not important %	Important F	Not important %	Important F	Not important %			
	<b>Activity Area Related Safety Practices</b>											
1	Provision of well equipped first aid kits	183	97	5	2.7	204	96	8	3.8	387	97	A
2	Recruiting qualified teachers and nannies	178	95	10	5.3	205	97	7	3.3	383	96	A
3	Organizing safety training for workers	177	94	11	5.9	206	97	6	2.8	383	96	A
4	Provision of adequate child sized classroom facilities	182	97	6	3.2	200	93	12	5.7	382	96	A
5	Provided ample space for the number of children	176	94	12	6.4	204	96	8	3.8	380	95	A
6	Ensure adequate ventilation	176	94	12	6.4	203	96	9	4.2	379	95	A
7	Noise should be controlled	175	93	13	6.9	203	96	9	4.2	378	95	A
8	Prompt repairs and regular maintenance of facilities	175	93	13	6.9	201	95	11	5.2	376	94	A
9	Securing windows and stair cases properly	178	95	10	5.3	197	93	15	7.1	375	94	A
10	Provide adequate lighting	177	94	11	5.9	193	91	19	9.0	370	92	A
11	Floor/mats/carpets in good condition to prevent tripping and slipping	173	92	15	8.0	195	92	17	8.0	368	92	A
12	Installation of safety devices like fire extinguisher,	177	94	11	5.9	183	86	29	13	360	90	A

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13	Use of finger jam protectors on the door	162	86	26	14	171	81	41	19	333	83	A
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**Key:** F: Frequency count, % = percentage, NP = Not important, IM = important, Cluster F (IM) = 373, A= Accept

Table 3 shows 13 safety practices required for adoption in the classrooms in pre-primary schools rated by preschool administrators in Enugu State. The 13 safety practices listed were accepted by the respondents as required for adoption in the classrooms. Nine out of the 13 safety practices listed had their total important frequency count from 375 to 387 above the cluster overall importance frequency count 373 and were ranked 1<sup>st</sup> to 9<sup>th</sup>

#### Discussion of Findings

The study revealed common causes of accidents in the pre-primary school classrooms to include: Inadequate provision of age appropriate classroom furniture and equipment, Poor/worn out floor covering or layout, Lack of ample space, Unprotected windows, Dilapidated building, Poor ventilation, hazardous location of the classrooms, poor lighting, among others. . These findings agree with some of the literature on causes of accidents in activity areas by Ejeh (2006), Obeng (2009), Emeka-Okafor (2014) & Morrongiello & Corbett (2015), who noted that the conditions which lead to accidents in the learning centers include; overcrowding, poor ventilation and lighting, inadequate or poor maintained equipment,

inexperience in the part of staff and preschoolers, poor lighting, bad posture, and to sum it up, the absence of safety plans.. The study also revealed that the null hypothesis tested at 0.05 level of significance on the causes of accidents in pre-primary school classrooms had no significant difference (NS) in the mean ratings of administrators in private and public pre-primary schools. The null hypothesis Ho was therefore accepted. This is in line with the findings by Chukwu (2010) and the researcher's observations during her preliminary visits to some pre-primary schools private and public in some education zones in the state safety practices and general standards in pre-primary schools classrooms in Enugu state are very poor. Most schools were characterized among other things by: inadequate provision of age appropriate facilities, poor location of the classrooms, dilapidated buildings, inadequate classroom space children learn under the shade of trees while many sit on the floor, poor hygienic sanitation, lack of easy access to good drinking water, unqualified workers without safety skills.

On safety practices presently adopted in the classrooms the finding revealed that only Provision of adequate child sized classroom facilities (52%), Provision of well

equipped first aid kits (63%) and Installation of safety devices like fire extinguisher (66%) were presently adopted in the classrooms rated by the preschool administrators in Enugu State. The result shows that there is still much room for improvement to ensure safety in the classrooms. The findings are in line with the report by Maduewsi (2002), Ejeh (2006) and Chukwu (2010) who reported that the physical structures and practices in pre-primary schools in Enugu State vary widely in quality and aesthetics from one establishment to another, the facilities and equipment, teacher qualifications, safety practices etc are not based on specified government standard. Since the policy statement on governments' involvement was mere lip service.

The findings in Table 3 revealed that recruiting qualified teachers and nannies, organizing safety training for workers, provision of adequate child sized classroom facilities, provision of ample space for the number of children, ensure adequate ventilation, noise properly controlled, prompt repair of classroom equipment and facilities among others are safety practices in the pre-primary school classrooms in Enugu State that are required to be adopted. The findings agree with the literature on safety practices by Robertson (2010), Bullard (2011), Mariana (2012) & Riyady, Sahar and Seba (2013) that the child should be closely and constantly supervised, prompt repair and maintenance of facilities, safety

knowledge and skill of caregivers among others are important in ensuring the safety of children at all times. Phil (2006) said that regular maintenance of facilities, Securing windows and stair cases properly and Provision of adequate light among others that accident and injuries among preschoolers could be prevented or reduced to ensure safety in pre-primary school environment. European child safety Alliance (2009) in line with the findings estimated that if all strategies (safety practices) known to be safe are adopted in preschools approximately 90% of the accidents/injures could be prevented.

### **Conclusion**

The causes of accidents in pre-primary school classrooms are numerous both human and environmental sources. Accidents being the leading killer of children would be preventable if required safety practices identified in the study are put in place in preschool classrooms.

### **Recommendations**

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

- 1 The identified required safety practices in the preschool classrooms should be implemented by the government unit in-charge of early childhood education in the state.
- 2 Pre-primary schools education unit should develop and use uniform guidelines/ programme with safety

standard spelt out to ensure safety of the programme users and the facilities.

- 3 Preschool classrooms should be equipped with child appropriate materials and equipment to ensure safety of the users.

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## **Challenges of Male Students of Home Economics in Tertiary Institution in Anambra State**

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### **Abstract**

This study investigated the challenges faced by male students of Home Economics in tertiary institutions in Anambra state. Five research questions were answered. It adopted a survey research. The population for the study was 260 students offering Home Economics as a course of study. 155 students was selected through random sampling. Questionnaire was used for data collection. Data were analysed using mean. Findings include among others, family related challenges, society related challenges, self and peers related challenges. It was recommended that adequate enlightenment programmes should be given to the public on prospects and career opportunities in Home Economics, parents should not discriminate among their children on choice of courses and government should pay adequate attention to Home Economics education by providing funds, equipment and training of the teachers.

**Key words:** Challenges, Males, Home Economics.

### **Introduction**

The continued dwindling in the economy of the nation with its resultant effects on the citizenry calls to mind the need for the youths to be exposed to salable skills that will make them independent and self reliant. This can be achieved by exposing the youths to those courses that can equip them with knowledge and practical skills. In the face of growing threat of unemployment in Nigeria today, it becomes pertinent that youths be

exposed to courses in Home Economics at all levels of education to make them self employed on graduation (Nwankwo & Okpetu 2008). Home Economics is a broad field of study that draws knowledge from other disciplines including physical, biological, social sciences, the arts and the humanities.

Home Economics is a vocational technical course offered in most tertiary institutions in the country. It is a broad based field of study which

brings together knowledge from many disciplines for the purpose of achieving and maintaining the wellbeing of individuals and families in an ever-changing world (Lemchi and Anyakoha 2006). The content of Home Economics encompasses the physical, biological and social sciences, the arts and the humanities, with the major objective of equipping individuals with skills to enable them live a useful and satisfying life and be self-reliant. Home Economic education is expected to help youths assume their roles in their environments in areas of personal growth, family life, vocational preparation and community involvement. It contributes meaningfully to the solution of the problems of the society such as unemployment, poverty and malnutrition (Flecks 2000). Home economics is an entrepreneurship-based skill, oriented field of study that is expected to equip learners with salable skills that makes for self-reliance (Abiamume, Seriki, and Lemon 2014). Home economics is made of many areas which are inter-related such as foods and Nutrition, Clothing and Textile, Home management, consumer education, housing and interior decoration, child care and development. All these areas of home economics have various career opportunities which equip boys and girls for self-reliance and national growth development (Anyakoha 2014).

According to Obiaze and Ukpore (2014), one of the objectives of

education is to produce persons who are capable of playing effective roles in national, economic and technological growth and development. Home economics prepares males and females for both home making and different jobs that require home economics skills, knowledge and attitude (Anyakoha 2014). Some of these career opportunities are seen in different areas of home economics which include careers in clothing and textile which according to Anyakoha (2014), offers employment opportunities in occupations related to clothing construction, costume designing, craft work among others, careers in food and nutrition which include nutritionist, catering, hotel management etc, careers in home management which include interior decoration, advertising and promotion, institutional housekeeping, social welfare among others.

The aim of Home Economics education curriculum at the tertiary level is to teach the learners how to strategically plan and use available resources in their environment to improve their homes, families and societal needs (National Policy on Ed 2013).

Arubaye (2014) asserted that Home Economics is characteristically skill and activity oriented which when properly taught with relevant tools and equipment will equip the learner with salable skills needed for self-reliance. Home Economics is very important to every individual as it

aims at improving their lives. According to Anyakoha (2014) Home Economics is very important in the following way: It teaches people how to live a good healthy and happy life in the family, it prepares people to use what they have (resources) to get what they need, it prepares boys and girls for home making, it prepares people for the jobs that require Home Economics knowledge and skills, it can help people to start their own business, it teaches people how to care for themselves.

Home Economics as a field of study does not exclude any gender, age or any other classification (Ovute 2001). According to her, the low enrolment and gender disparity in enrolment have been attributed to the wrong perception of the meaning and role of Home Economics. This wrong perception has grossly affected the attitude of male students in choosing Home Economics as a course of study. According to Ovute (2001) Home Economics is perceived as "the female domain" into which males need not venture. This is why males are inferior to females in attitude, interest and enrolment in Home Economics as a course of study in tertiary institution.

Challenges are those things encountered while carrying out a particular task and which tends to deter the individual from progressing in the task. (Chidume & Igbo 2012). Social challenges refer to problems that people have in interacting with people in the society or engaging in normal social behavior. Hartley (2001)

stated that social issues are moral problems that affect a member or members of a society directly or indirectly. Some of these issues include poverty, divorce, bullying etc which are considered to be matters of concern, problems and controversies. Some of these challenges are family related challenges, society related challenges, self related and peers related challenges.

Youths in Nigeria are faced with challenges which may be sociological in nature. According to Chidume & Igbo (2012) societal challenges pertains to problems we have as we interact with one another, either as individuals or in group. Some of these society related challenges include: society see home economics as subject for female, society look down on boys who offer home economics as a course of study, society see home economics as only cooking and sewing, society has poor perception of home economics among others.

Some family members due to their wrong perception of Home Economics do not encourage their male children to register the course. According to (Young 2000) parents have different career aspiration for their sons and daughters. According to Meyer and Anderson (2012) parental attitudes starts early in life as they place the males at a disadvantage as far as Home Economics is concerned.

Families, parents and guidance play significant role in the occupational aspiration and career development of their children. Without parental

approval or support, students and young adults are often reluctant to pursue or even explore diverse career possibilities (Wong and Liu 2010). The parental influence upon their children's career choice is very high. Some of these family related challenges include: parents have different career aspirations for their sons and daughters, some parents look down on home economics as a course of study, parents allow gender stereotyped activities for their male and female children at home, parents prefer their female children rather than male to study home economics as a course of study among others.

Through socialization, peers play an important role in influencing young people's choice of career. In line with this, Kenellekis (2007) stated that individuals are usually receptive to the various social influences around them. According to Meyer and Anderson (2012) social influences are strong variables in the susceptibility of individuals to peer acceptance and reference group. A peer group is made up of members who have equal standing within the group. Makgosa and Mohube (2007) asserted that most people feel a strong need to fit in with other members of their peer group. Students who want to belong choose courses to fit the group they are associated with for peer acceptance or approval.

Some of the peer related challenges include: peers look down on males who offer home economics as a course of study, peers make jest of male

students who offer home economics as a course of study, peers see the course as only reserved for girls among others.

The major challenges facing our graduates today is the issue of unemployment. It leads to economic waste, suffering in the family and it is the main cause of poverty and ill health (Alabi & Anyakoha 2014). Home Economics courses as stated in the National policy on Education (2013) at tertiary level provide entrepreneurial technical and job - specific skills for self reliance, commercial and economic development, provide trained manpower in the applied science and technology and also inspire students with a desire for self-improvement and achievement of excellence. Considering therefore the foregoing definitions of Home Economics, we can see that Home Economics education is capable of producing graduates who have the capacity to engender economic growth, create wealth, reduce poverty and enhance a sustainable national economy. In spite of this usefulness of Home Economics it appears that male students who are studying home economics are not adequately encouraged by the society, family, peers, siblings and government thus leading to low self esteem of the males studying home economics .

#### **Purpose of the Study**

The major purpose of the study was to investigate the challenges faced by male students of Home Economics in

tertiary institutions in Anambra State. Specifically, the study identified:

1. family-related challenges facing male students of Home economics.
2. society-related challenges facing male students of Home economics.
3. peer group related challenges facing male students of Home economics.
4. personal challenges of male students of Home Economics in tertiary Institution in Anambra State.
5. ways for resolving the challenges faced by male students of Home Economics in tertiary Institution in Anambra State.

#### **Research Questions**

1. what are the family- related challenges facing male students of Home Economics?
2. what are the society-related challenges facing male students of Home Economics?
3. what are the peer group related challenges facing male students of Home Economics?
4. what are personal challenges of male students of Home Economics in tertiary institutions in Anambra State?
5. What are the ways of resolving the challenges faced by male students of Home Economics in tertiary institution in Anambra State?

#### **Methodology**

**Research Design:** A survey design was employed to seek the opinion of the respondents on the challenges

faced by male students of Home Economics at tertiary institutions in Anambra State.

**Area of the Study:** The study was carried out in Anambra State. The study covered three tertiary institutions in the state that offer Home Economics.

**Population for the study:** The population for the study consisted of students offering Home Economics as a course at tertiary institutions in Anambra State. The total population of these students according to school record was 260. This number was retrieved from school record for (2014/2015) academic session Federal Polytechnic Oko 105, Federal College of Education (Technical) Umunze 90 while Nwafor Orizu College of Education 75.

**Sampling for the Study:** A sample of 155 students was used for the study. This was made up of 70 students from Federal Polytechnic Oko, 50 Students from Federal College of Education (Technical) Umunze and 25 Students from Nwafor Orizu College of Education Nsugbe. This selection was done through random sampling.

**Instrument for Data Collection:** Data were collected using structured questionnaire and focus group guide. The questionnaire was divided into two parts. Part one contained three items designed to seek background information about the respondents. The second part was divided into four sections. This section consisted of 45 items based on literature review and specific purposes of the study. The

questions sought information on social challenges faced by male students of Home Economics in tertiary institutions in Anambra State. The response options were based on a 4 - point rating scale. It was validated by three experts from the department of fashion design and clothing technology and Home and rural science, federal polytechnic Oko. The reliability index of 0.83 was obtained, and adjudged reliable for embarking on the study.

**Method of Data Collection:** The questionnaires were administered by the researcher to the respondents by hand with the help of two assistants. One hundred and fifty copies of questionnaire were retrieved back from the respondents after five days showing 95% return rate. One session of focus group discussion were also held to obtain a qualitative data from the respondents.

**Method of Data Analysis:** The data were analysed using mean to answer research and information retrieved through focus group discussion. The

mean scores were used to determine the perceived importance level expressed on a 4 - point scale for each of the item. A mean rating of 2.50 was used for decision making.

### Findings

The study identified the following:

- A. Thirteen family related challenges of male students of Home Economics in tertiary institutions in Anambra State. (see table I)
- B. Eight society - related challenges of male students of Home Economics in tertiary institutions in Anambra State.
- C. Eleveen self - related challenges of male students of Home Economics in tertiary institutions in Anambra State. (see table 3)
- D. Eleveen peers related challenges of male students of Home Economics in tertiary institutions in Anambra State (see table 3)
- E. Thirteen ways for resolving the challenges faced by male students of Home Economics in tertiary institutions in Anambra.

**Table 1:** Mean responses on family-related challenges of male students of Home Economics in tertiary institutions in Anambra State.

SN	Family related challenges	Mean	Remark
1.	Parents have different career aspirations for their sons and girls.	2.82	Agreed
	Some parents look down on Home Economics as a course of study.	2.72	Agreed
2.	Parents allow gender stereo-typed activities for their male and female children		



at home.	3.05	Agreed
3. Parents prefer their female children rather than male to study Home economics as a course of study.	3.07	Agreed
4. Parents wants their male children to study other subjects rather than Home economics.	2.75	Agreed
5. Parents do not provide necessary requirement For their male child learning home economics	2.67	Agreed
6. They encourage them to do other courses other than home economics.	2.59	Agreed
7. Parents tell their male child that home economics has no job prospect other than teaching.	2.70	Agreed
8. Parents tell their male child offering home economics that the course cannot fetch them enough money to run a home.	2.55	Agreed
9. Siblings of male students offering home economics make Jest of them.	2.67	Agreed
10. Siblings look down on their brothers who offer home Economics	2.66	Agreed
11. Siblings tell their brothers offering the course that they feel shy telling their friends the course of study of their brother	2.67	Agreed

Table shows the family related challenges of male students offering Home Economics as a course of study which include: Parents have different career aspiration for their sons and daughters, parents allows gender stereo-typed activities for their male and female children at home, parents do not see home economics as lucrative subject, parents want their male children to study other subjects

rather than home economics and others. From the items listed above, all the items have their mean ranged from 2.55 to 3.07. This showed that the mean value of each item was above the cutoff of 2.50 indicating that Nigerian families discriminate against their boys offering Home Economics as a course of study in tertiary institutions in Anambra State.

**Table 2:** Mean responses on the society related challenges of male students offering Home Economics as a course of study in tertiary institutions in Anambra State.

SN	Society related challenges of male students of Home Economics	Mean	Remark
	Society:		
1.	see Home economics as subject for female	2.62	Agreed
2.	look down on boys who offer Home economics as a course of study	2.52	Agreed
3.	see Home economics as only cooking and sewing	2.75	Agreed
4.	has poor perception of Home economics	2.83	Agreed
5.	lack adequate information about Home economics.	2.73	Agreed
6.	lack adequate information on career opportunities in Home Economics	2.85	Agreed
7.	have misconception that Home economics is for dull students	2.65	Agreed
8.	see male students offering Home economics as wasting their time	2.60	Agreed

Table 2 shows that the society is not adequately informed about the prospect and job opportunities in Home Economics as a result they look down on males offering the course at tertiary institutions.

**Table 3:** Mean responses on the self-related challenges of male students offering Home Economics as a course of study at Tertiary institutions in Anambra State.

SN	Self related challenges of male students of Home Economics	Mean	Remark
	Male students offering Home Economics		
1.	feel inferior to their friends and relations	2.63	Agreed
2.	feel inferior to their friends in other subject areas.	3.02	Agreed
3.	lack interest in Home economics	2.70	Agreed
4.	lack encouragement from lecturers	2.62	Agreed
5.	lack focus because of the challenges they face	2.72	Agreed
6.	lack concentration in class work	2.82	Agreed
7.	lack interest in practical classes	2.70	Agreed
8.	lack zeal and enthusiasm about the course	2.62	Agreed
9.	fail to carry out assignment	2.58	Agreed
10.	have nonchalant attitude in the class	2.80	Agreed
11.	lack seriousness with both theory and practical	2.52	Agreed

Table 3 shows that all the items have their mean ranged from 2.52 to 3.02. This showed that the mean value of each item was above the cutoff of 2.50 indicating that male students have self imposed challenges in choosing Home Economics as a course of study.

**Table 4:** Mean responses on the peers – related challenges of male students of Home Economics in Tertiary Institutions in Anambra State.

SN	Peer related challenges of male students of Home Economics	Mean	Remark
Other male students (peers):			
1.	Lack adequate information about careers in Home Economics	2.57	Agreed
2.	Have poor perception of Home economics	2.79	Agreed
3.	Look down on males who offer Home economics	2.67	Agreed
4.	Give wrong advice and information to their friends who want to enroll in Home economics	2.72	Agreed
5.	Prefer males who are in male-dominated subject areas.	2.59	Agreed
6.	See the course as only reserved for girls	2.88	Agreed
7.	make a jest at their peers who offer home economics as a course of study	2.78	Agreed
8.	they tell them that they will only end up in the kitchen	2.51	Agreed
9.	they tell them that the course have no job prospect to them	2.63	Agreed
10.	they tell them that the course is only for women	2.78	Agreed
11.	they tell them that the course cannot offer them enough money to cater for their family	2.68	Agreed

Table 4 above shows the peers related challenges of male students offering Home Economics as a course of study. From the items listed above, all the items have their mean ranged from 2.51 to 2.88. This showed that the mean value of each item was above the cut off of 2.50 indicating that peers have negative influence on their male friends offering Home Economics as a course of study in tertiary institutions in Anambra State.

**Table 5:** Mean responses on ways resolving the challenges of male students offering Home Economics as a course of study.

SN	Ways of resolving the challenges	Mean	Remark
1.	Parents should encourage their male children to enroll in home economics	3.02	Agreed
2.	Parents should not discriminate among their children on their choice of course of study	2.82	Agreed
	Parents should not allow gender stereo-typed for their male and female children	3.05	Agreed
3.	Parents should not look down on their male children	3.07	Agreed
4.	School authority should give incentive to students offering offering the course by giving them materials for practicals	3.07	Agreed
5.	Home economics association should encourage their members to upgrade their knowledge so as to impact positively on students.	2.85	Agreed
6.	Awareness of what home economics should be created through media by the association	2.77	Agreed
7.	Adequate enlightenment should be disseminated to the Public on career opportunities in home economics	2.90	Agreed
8.	Relevant practicals should be taught by teachers to the students	2.87	Agreed
9.	Teachers should make their teaching, student centered	2.79	Agreed
10.	Teachers should give encouragement to their male Students offering home economics	3.04	Agreed
11.	Teachers should be more patient with their male students offering home economics	3.01	Agreed
12.	Home economics should be properly taught by well qualified teachers	2.70	Agreed
13.	Teachers teaching home economics should upgrade their knowledge through training	2.65	Agreed

Table 5 shows the ways of resolving the challenges faced by male students of Home Economics in tertiary institutions in Anambra State. From the items listed above all the items have their mean ranged from 2.65 to 3.07. This showed that the mean value of each item was above the cut off of 2.50 indicating that the respondents agreed with all the ways of resolving the challenges.

#### **Discussion of Findings**

The study shows challenges of male students of Home Economics in tertiary institutions in Anambra State. Such challenges which include that Nigerian parents prefer their female children rather than male to offer Home Economics as a course to study, some parents also look down on Home Economics education as a

course of study, some parents do not see Home Economics education as lucrative, parents have different career aspirations for their sons and girls. This finding is in line with the opinion of Ovute (2001) which states that Home Economics is perceived as “the female domain” into which males need not venture. The findings were also in agreement with the opinion of Johnson (1991) who is of the opinion that at home the child rearing practices are different for boys and girls. Girls are allowed to engage in activities which enhance their interest in Home Economics like playing with toys more than boys. The findings were in line with the opinion of Skorikov and Vondra (2011) who stated that the influence which parents have upon their children’s career choice is very high.

The findings on Table 2 shows the mean responses on the society related challenges of male students of Home Economics as a course of study in tertiary institutions in Anambra State. The societal challenges include that the society see the course as female oriented, society look down on boys who offer Home Economics as a course of study, society see the course as only cooking and sewing, society lack adequate information about the course, society lack adequate information on career opportunities in Home Economics. This findings were in line with the opinion of Asuguo (2010) who stated that lack of adequate career information in a particular field of study can hinder the

enrolment of students into the field of study.

The findings in table 3 shows the mean responses on self related challenges of male students offering Home Economics as a course of study at tertiary institutions in Anambra state. These include that male students offering Home Economics feel inadequate, they feel inferior to their friends, they lack interest in the course, they lack encouragement from lecturers, they lack focus because of the challenges they face, they lack encouragement from parents. The findings are in line with the opinion of Uwadie (1993) who stated that Home Economics is perceived as “the female domain” into which males need not venture. This is why males are inferior to females in attitude, interest and enrolment in Home Economics as a course of study in tertiary institutions (Eze 1996).

The findings on table 4 revealed the mean responses on peers related challenges of male students of Home Economics in tertiary institutions in Anambra state. These include that peers lack adequate information about Home Economics, peers have poor perception of the course, peers give wrong information and advice to their friends, peers are more at home with courses accepted by their peers. These findings are in line with the opinion of Leung, Hou, Gati & Li (2011) who asserted that most people feel a strong need to fit in with other members of their peer group. Students who want to belong choose courses to fit the

group they are associated with for peer acceptance or approval. This is also in line with the opinion of Meyer and Anderson (2012) who stated that through socialization, peers play an important role influencing young people's choice of career.

The findings on table 5 revealed the mean responses on ways of resolving the social challenges of boys offering Home Economics as a course of study which includes;

Parents should encourage their male children to enroll in Home Economics education, government should equip Home Economics laboratory so that students should get the necessary training, relevant practicals should be taught to students so that they get adequate skills, parents should not discriminate among their children on the choice of course of study, adequate enlightenment programme should be given to public about the course, government should release funds for practical classes to encourage students. This is in line with the opinion of Obunadike (2009) in Ewubare (2010) that lack of adequate laboratory facilities compel Home Economics teachers to use inappropriate methods of teaching also Ewubare (2010) pointed out that inadequate fundings has often affected teaching and learning in school. Nwaokomah (2010) also suggested that workshops and seminars should be encouraged in Home Economics to update the knowledge of teachers and

also equip them with new trends in the use of equipment and machines.

### **Conclusion**

It is evident from the study that males students have challenges in studying Home Economics as a course in tertiary institutions. Some of these challenges include family related challenges, society related challenges, self related challenges, peer-related challenges. Some recommendations have also been given on the ways of resolving the challenges of male students offering Home Economics as a course of study.

### **Recommendations**

- ❖ Male students should be encouraged by their families to enroll in Home Economics education.
- ❖ Parents should not discriminate among their children on their choice of course
- ❖ Adequate enlightenment programmes should be given to the public on prospects and career opportunities in Home Economics.
- ❖ School authorities should give incentives to students offering the course by providing materials for their practicals.
- ❖ Teachers teaching home economics should be trained through workshop, seminars and conferences to update their knowledge.



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