JHER Vol. 26 No. 2 December 2019, pp. 1-9

Comparative Study of Economic Benefits of Rain-Fed and Dry Season Farming: Implications for Agricultural Extension in Benue State

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Abstract

The study was a comparative study of economic benefits of rain-fed and dry season farming among rural households. Specifically it identified types of crops cultivated during rain-fed and dry seasons, assessed profit derived from the sale produce at each farming season and other preferred benefits; factors that militating against the practice of dry season farming and identified strategies for improved dry season farming. It was carried out in Makurdi Local Government Area of Benue State with a population of 3379 farm families. A random sample of 350 respondents was selected. Questionnaire was used for data collection. Data were analyzed using mean and standard deviation. Results show different crops cultivated during rain-fed season. Rice was rated as highest cultivated crop(X= 3.79). Vegetables were mostly cultivated during dry season with pumpkin rated as the highest cultivated crop(X=3.81). Dry season farming was more profitable than rain-fed farming. Poor storage facilities was rated as major factor militating against dry season farming, (X=3.5). Provision of water pump generators was suggested by the respondents as the major strategy to improve the practice of dry season farming in the area. It was concluded that dry season farming has more economic benefits to the farmers than rain fed farming.

Keywords: Benefits, Rain-fed, Dry season, farming, Agriculture, Rural households

Introduction

Farming as a series of organized processes carried out by man on his natural environment, particularly affecting the soil and vegetation, for the purpose of systematically producing foodstuffs for sustenance and raw materials such as fibres. Rain-fed farming can be defined as cultivation of crops or farming in the period of the year during which rainfall distribution characteristics are suitable for crop germination, establishment, and full development. It is farming in the period of the year categorized as the rainy or wet season, the length of which varies spatially or temporary, and with different types (Odekunle, 2004).

Farming involves to crop production during a dry season, utilizing the residual moisture in the soil from the rainy season, usually in a region that receives 20"or more of annual rainfall (Runsten, 2013).

Dry season farming does not yield maximally; rather it provides supplements of nature to dictate the true sustainability of agricultural production in the dry season. The seasonality results in food insecurity since food production becomes a challenge during the dry season. This is so due to the fact that farmers are apprehensive of the high risk involved in large scale crop production in the dry season, for reasons of lack of water to nourish the crops, tediousness of dry season farming operations, among others. Rather than venture into large scale crop production, farmers resort into growing crops of low significance as a way of avoiding risks. However, irrigated agriculture has been found to be an important contribution to the expansion of natural and world food supplies since 1960 and is expected not only to play a major role in feeding the growing world population. (Food and Agricultural Organisation FAO, 2010). It can now be used as an alternative to rain-fed agriculture during the dry season farming period (Ibekwe and Adosope 2010). Irrigation involves artificial supply and systematic dividing of water for agriculture and horticulture in order to obtain higher or qualitatively better production.

Federal Government of Nigeria (FGN) support better water management for dry season farming through irrigation. To this, FGN (2004) put in place plans to address climate change, a notable major constraint to increased agricultural production. It has been observed that recently persisted droughts, flooding, off-season rains and dry spells have disrupted crop growing seasons in many Nigerians agro-ecological zones, requiring the diversification of income sources, other than rain fed-farming which results in low productivity, low income, perpetual poverty and malnutrition.

Apart from that, the need for all year round improved food production anywhere is inevitable (world bank 1996); and this cannot be left to be determined by rain-fed farming which is dictated by climatic conditions. Food and agricultural organization (FAO, 2000) identified Nigeria as having potential comparative advantage in the production of a variety of fresh and processed high valued crops during the rain-fed and dry season farming. It is in view of this that the comparative study of economic benefits of rain-feed and dry season farming is conceived. Both rain-fed and dry season agriculture provides economic benefits.

Economic benefits in the context of this study are benefits that can be quantified in terms of money generated, such as net income and revenues generated from the production of crops. It can be measured and used in farm business decisions and market analyses and consumption rate. The crops are also sold for production of other products useful to people of the state.

Despite the fact that rain-fed farming is known to be the traditional practice of Benue farmers, yet it has an inability to supply food all year round especially vegetables. Dry farming gives higher yield than rain-fed farming. This is because the farmer gives the crop what it requires; been it water, fertilizer and other necessary maintenance. Dry season farming that ensures high yield and can be supplemented with the dry season farming which has been neglected by so many farmers by farmers in Benue state.

Farmers only depend on rain-fed farming. It is against this background that the study intends to examine the economic benefits of rain-fed and dry season farming among Benue farmers.

Purpose of the Study

The general purpose of this study was to compare the economic benefits of rain-fed and dry season farming in Benue state-Nigeria. Specifically the study:

1. identified types of crops cultivated during the rain-fed and dry season
2. determined the profitability (expressed in Naira) of produce of rain-fed and dry season farming
3. determined other preferred benefits of rain fed and dry-season farming
4. identified factors that militate against the practice of dry-season farming
5. determined strategies to improve dry - season farming

Research Questions

The study sought answers to the following questions:

1. What are the types of crops cultivated during the rain-fed and dry-season farming?
2. What is the profitability (in Naira) of produce of rain-fed and dry season farming?
3. What are the economic benefits of rainfall and dry-season farming?
4. What are the factors that militate against the practice of dry-season farming?
5. What are the strategies that could be used to improve the rain-fed and dry-season farming?

Methodology

***Research Design*:** This study is a survey design directed towards comparing the economic benefits of rain-fed and dry season farming in Makurdi Local Government Area of Benue State.

***Area of Study*:** The research covered Makurdi Local Government Area of Benue State. The state was created in 1976. Makurdi is the capital of Benue State of Nigeria. The city is located in central Nigeria along the Benue River. It is bounded by Guma to the north, Gwer East to the East and Gwer West to West. Makurdi Local Government Area is located on the bank of river Benue and it is the head quarter of Benue State, it is acclaimed the nations "food basket" because of its rich and diverse agricultural produce which include yam, rice, beans, cassava, groundnut, soya beans etc. Animals reared include poultry, pigs and goats. The state also accounts for over 70 percent of Nigeria's soya bean production and it also boasts of one of the longest stretches of river systems in the country with great potential for a viable fishing industry, dry season farming through irrigation and for an inland water way (Fanan and Felix, 2014). There are various crops produced by farmers in Makurdi during rain-fed. This is to say farmers in Makurdi practice mostly the rain-fed farming. The practice of dry-season farming has been completely neglected by farmers.

***Population of the Study*:** The population of this study comprises of all rain-fed and dry season farmers in Makurdi Local Government area of Benue state. These comprise of 3148 (rain fed) and 231 (dry season)**.** The total targeted population of the four council wards was 3379 farm families (Benue State Agriculture and Rural Development Agency (BNARDA), 2015)

Sample for the study: The study used a multistage sampling method to select sample size. The sample size of 350 respondents was determined using Yamane's formula. Comprising of 300 rain-fed farmers and 50 dry season farmers

Instrument for Data Collection: The instrument used was the researcher's designed questionnaires based on the stated objectives which consist of six sessions. First was the biography while the rest were based on the five objectives. Also Focus Group Discussion (FGD) guide was purposively held with dry season farmers to further apprehend much about dry season farming benefits

Data collection procedure: Necessary permission was taken from clan heads. Thereafter, 350 copies of questionnaire were distributed to the farmers along with written and verbal instruction and the numbers of copies retrieved.

Validation of Instrument: The instrument used was validated by the supervisor and a statistician and other experts in the department of Home Science and Management and Agricultural extension of University of Agriculture Makurdi.

Data Analysis techniques: Data were analyzed using means. The bench mark for the items was 2.50.Any item with a mean value of 2.50 and above was regarded as accepted while any item with the value of less than 2.50 was regarded as rejected.

Findings of the study

Table 1: Respondents Mean ratings on the type of crops cultivated during rain-fed farming

Crops	X_1	X_2	X_S	SD_1	SD_2	SD_S	Remarks
Pumpkin	3.79	3.81	3.8	0.45	0.47	0.46	Cultivated
Spinach	3.77	3.72	3.75	0.53	0.57	0.55	Cultivated
Pepper	3.74	3.51	3.63	0.44	0.54	0.49	Cultivated
Okra	3.65	3.43	3.54	0.62	0.63	0.63	Cultivated
Garden Egg	3.47	3.39	3.43	0.53	0.76	0.65	Cultivated
Sorrel plant	3.41	3.25	3.33	0.63	0.68	0.66	Cultivated
Tomatoes	3.25	2.96	3.11	0.55	0.68	0.62	Cultivated
Maize	3.06	2.52	2.79	0.63	0.80	0.72	Cultivated
Potatoes	2.71	1.93	2.32	0.87	0.65	0.76	Not cultivated
Ginger	2.71	1.87	2.29	0.91	0.77	0.84	Not cultivated
Onions	2.19	1.79	1.99	0.91	0.70	0.81	Not cultivated
Rice	2.11	1.51	1.81	0.92	0.77	0.85	Not cultivated
Grand Mean	**3.12**	**2.81**	**2.98**	**0.67**	**0.67**	**0.67**	

Source: Field Survey, 2019

Table 1 shows that, all the crops except cashew and orange with 2.11 and 2.19 mean respectively were accepted by the respondents as the type of crops cultivated during rain-fed farming in Makurdi Local Government Area of Benue State with the highest mean of 3.79 from rice and least of 2.71 from soya beans and sweet potatoes. This implies that, rice is the highly cultivated crop in Makurdi local government area during rain-fed farming while soya beans and sweet potatoes are mostly cultivated on the small scale.

Result in Table 2 shows that all crops except rice, onions, ginger and potatoes with 1.53, 1.79, 1.87 and 1.93 mean respectively were accepted by the respondent as type of crops cultivated during dry season in Makurdi Local Government Area with the highest mean of 3.81 from pumpkin and second highest from 3.72 from spinach. The finding of this result implies that, pumpkin, pepper, spinach, garden egg and okra are highly cultivated in Makurdi Local Government during dry season.

Table3: The profit realized from rain-fed and dry season farming

Rain-fed crops	N	Total cost of production	Total Return	Net Return	Dry Season crops	N	Total cost of production	Total Return	Net Return
		N	N				N	N	N
Spinach	31	273,000	500,000	227,000	Spinach	31	213,000	800,000	488,000
Yam	14	85,000	200,000	115,000	-----------		------------	---------	-----------
Maize	18	62,000	162,000	100,000	Maize	18	181,000	610,000	429,000
pumpkin	50	220,000	700,000	480,000	Pumpkin	50	230,000	940,000	710,000
Millet	17	75,000	152,000	77,000	----------		------------	---------	------------
Garden egg	22	202,000	570,000	368,000	Garden Egg	22	122,000	720,000	598,000
Rice	2	125,000	350,000	225,000	-----------		------------	---------	------------
Pepper	29	99,000	310,000	211,000	Pepper	29	133,000	600,000	467,000
Beneseed	24	62,000	179,000	117,000	-----------		-----------	---------	-----------
Okra	19	120,000	150,000	30,000	Okra	19	163,000	560,000	397,000
Tomatoes	21	50,000	610,000	110,000	Tomatoes	21	119,000	270,000	151,000
Total		**1,273,000**	**3,433,000**	**2,160.00**			**1,260,000**	**4,500,000**	**3,240,000**

Source: Field Survey, 2019

Table 3 indicates that rain-fed farmers used the cost of N1, 273,000 and have an average total returns of N31,433,000 giving a total net returns of 2,160,000 while dry season farmers used the cost of N1,260,000 and have an average total returns of 4,500,000 giving a total net returns of 3,240,000. The table also shows the farmers from rain-fed farming have the profit of 2,160,000 and farmers from dry season farming have the profit of 3,240,000. More so, the gross margin difference of rain-fed and dry season farming is 1,080,000. This implies that dry season farming is more profitable than rain-fed farming due to scarcity of this produce during dry season which result in high demand thereby leading high price of produce in the market.

Table 4: Respondents Mean Rating on the Preferred Benefit derived from Rain-fed and Dry Season Farming

S/N	Benefits of rain-fed farming	X_1	X_2	X_S	SD_1	SD_2	SD_S	Remark
1	Abundance of food crops production	3.74	3.55	3.645	0.74	0.97	0.855	Accepted
2	Poverty reduction.	3.67	3.36	3.515	0.72	0.83	0.775	Accepted
3	All types of crops (i.e. both long and short maturing) can be cultivated	3.66	3.27	3.465	0.44	0.83	0.635	Accepted
4	It Improves standard of living	3.47	3.22	3.345	0.6	0.75	0.675	Accepted
5	Generation of high yield	3.25	1.98	2.615	0.55	0.76	0.655	Accepted
	Grand Total	**3.558**	**3.076**	**3.317**	**0.61**	**0.828**	**0.719**	

Source: Field Survey, 2019

Table 4 shows the level at which respondents accepted the preferred benefits derived from rain-fed farming with the highest mean of 3.74 from abundance of food crops production and second highest mean of 3.67 from poverty reduction and the least mean of 3.25 from generation of high yield.

Also, all the benefits except increased the level technical efficiency of the farmer and increased asset base of the participant with 1.98 and 1.77 mean respectively were accepted by the respondents as preferred benefits derived by the respondents as preferred benefits derived from dry season farming with the highest mean of 3.55 from increased income rates of the farmer and least mean of 3.22 from increased the training knowledge of the participants in irrigation farming. This implies that, despite other benefits derived from rain-fed and dry season farming in Makurdi local government area, there are other preferred benefits suggested by the farmers.

Table 5: Respondents Mean rating on the factors that militate against the practice of dry season farming

S/N	Factors	Mean	Std Dev	Remark
1	Poor storage facilities	3.51	.63	Accepted
2	Unavailability of pumping machines and cost of fuel for pumping water	3.21	.79	Accepted
3	Lack of knowledge in managing perishable produce (such as sorting, grading, and packing)	3.12	.78	Accepted
4	Lack of cooperation to fix common prices for produce	2.88	.95	Accepted
5	Poor transport system.	2.88	.90	Accepted
6	Lack of funds	2.77	.78	Accepted
7	Time consuming	2.66	.72	Accepted

Source: Field Survey, 2019

Table 5 revealed that all the factors were accepted by the respondents as factors that militate against the practice of dry season farming, with the highest mean of 3.51

from poor storage facilities and the least mean of 2.88 from poor transport system and lack of cooperation to fix common prices from produce. This indicate that despite the challenges caused by other factors, poor storage facilities was considered by the respondents as the factors highly militating against the practice of dry season farming.

Table 6: Respondents Mean rating on strategies to improve the practice of dry season farming

S/N	Strategies	Mean	Std. Dev.	Remark
1	Provision of water pump generators	3.67	0.55	Accepted
2	Provision of farm inputs	3.63	0.63	Accepted
3	Technology adoption by farmers	3.50	0.78	Accepted
4	Provision of capital	3.37	0.69	Accepted
5	Application of Agro-chemicals	3.21	0.79	Accepted
6	Construction of dam	3.13	0.97	Accepted
7	Provision of tractor	2.91	1.01	Accepted
8	Change on-farm management(decision about what crops to grow and how them)	2.88	0.90	Accepted

Source: Field Survey, 2019

Table 6 shows that all the strategies to improve the practice of dry season farming were accepted by the respondents with the highest mean of 3.67 from provision of water pump generators and the least mean of 2.88 from changes on farm management (decision about what crops to grow and how to grow them). This implies that, all the strategies to improve dry season farming are effective and highly applied by the farmers. However, provision of water pump generators is most considered among others.

Discussion of Findings

Research Question 1 seeks to identify the types of crops cultivated during rain-fed in Makurdi Local Government Area. Result in table 2 showed that the crops cultivated during rain-fed in Makurdi local government is very high. This in line with (Ibekwe and Adesope, 2010) that rainy season is the normal cropping season for all crops.

Research question 2 was posed to identify the type of crops cultivated during dry season in Makurdi local government area. Results in table 3 shows that the type of crops cultivated during dry season in Makurdi local government area is very low and mostly vegetables. This is in agreement with (Ministry of Foreign Affairs, 2008) that dry season is associated with hammattan wind with low humidity and low night temperatures, making the area suitable for the growing of horticultural crops like garden eggs, okra and other leafy vegetables under irrigation.

Research question 3 assessed the profit derived from produce of rain-fed and dry season farming. The results in table 4 Shows that dry season farming is more profitable than rain-fed farming. The findings indicate that due to scarcity of this produce during dry season results into high demand thereby leading into high price of price of produce in the market. This is in line with (Singh, 1999 and Food and Agriculture Organization 1996) which pointed out that in the South Western Nigeria, vegetables such as amaranthus species, pepper, tomatoes, and okra, are very popular and farmers involved in growing this to make some profit during the dry season.

Research question 4 sought to ascertain other preferred benefits of rain-fed and dry season farming in the area. The result obtained in table 5 shows that other preferred benefit of rain-fed and dry season farming include abundance of food crop production, poverty reduction, increased income rates of the farmer, increase the training knowledge of the participants in irrigation farming, ready market for the produce.

This is in line with (Blench and Ingawa, 2004 and National Fadama Development Project, 2003) which pointed out that, during the dry season when the river is flooded and it is observed that farmers are usually less busy on the farm during the dry season, therefore, irrigation farming serves as an alternative employment and additional source of income during the period.

Research question 5 identified factors militating against the practices of dry season farming in the study area. Results in table 6 indicate that, there are multiples factors militating against the practices of dry season farming.

This is in accordance to Emana and Gebremedhin (2007) and Bezabih and Hedera (2007) that the factors militating against the practice of dry season farming in the study area are; unavailability of pumping machines and cost of fuel for pumping water, poor storage facilities, poor transport system.

Research question 6 sought to identify strategies to improve dry season farming in the study area. Results in table 7 indicate strategies to improve dry season farming. This is in line with Falcon (2004) and Oruonye, (2011) which pointed out some factors such as changes on farm management, which include decision about what crops to grow, when and how to grow them, application of agrochemicals, technology adoption by farmers, provision of capital, construction of dam, provision of water pump generators as strategies to improve the practices of dry season farming.

Conclusion

It was concluded that comparatively dry season farming has more economic benefits to the farmers than rain-fed farming. In view of this, it was recommended that farmers in the study area should venture more into dry season farming to ensure economic stability all year round.

Recommendations

- Farmers should be encouraged to practice dry-season farming to increase their income.
- Provision of water for dry season farming should be promoted in the area.

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JHER Vol. 26 No. 2 December 2019, pp. 10- 19

Issues Relating to Sexual Activities among Female Undergraduates: A Case study of Federal University of Agriculture, Abeokuta (FUNAAB), Ogun State

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Abstract

The study investigated sexual activities (SA) and their perceived effect on the educational and psychosocial development (PD) of female teenagers in Federal University of Agriculture Abeokuta (FUNAAB). The sample was made up of 110 first year female students (in 100 level). Questionnaire was used for data collection. Data were analysed using descriptive statistics. Findings revealed that majority of respondents were between 15 and 20 years (89%) and many are Christians by religion (74%). Very few of the respondents experienced kissing, caressing, rape, masturbation, and watching of pornography. Majority of respondents (91%) gave their consent. Positive and negative influencers of SA were identified. The perceived effect of engaging in sexual activities on the education of the respondents is the difficulty in comprehending in class, while feelings of depression and guilt were the effects of SA on PD. In conclusion, engagement in SA was with approval and different factors influenced the activity. Based on the findings, teenagers should be educated on the economic benefits of sexual activity as early as possible during admission process into tertiary education.

Keywords: sexual activity, education, teenagers, psychosocial, sexual activity influencers

Introduction

Children are individuals within the zero to eighteen years. United Nations Convention on the Rights of the Child (UNCRC) (1989) categorised a child as any individual under 18 years. The teenage years is characterised with many developmental tasks related to sexuality as they seek to form romantic relationships and sexual identities (Auslander, Rosenthal and Blythe, 2005). Teenagers strive to make multiple choices in different domains of life trajectory such as academic, emotional, social, and sexual among others. However, the female-child is more prone to vulnerability when they are at risk of exposure to sex or sexual related activity.

Situations around the globe indicate that engagement in sexual activity continues to be on the increase among high and tertiary school students who are majorly in their early, middle or late adolescents groups. For instance, in the United States, the Centers for Disease Control, Prevention (2009) and Martinez, Copen and Abma (2011 in Advocates for Youths 2012) found out that 46% of all high school age students as well as 62% of high school seniors are sexually active, with about 6 % having had sex before 13 years. Also, Kann, (2016) reported that 41% of secondary school students had been exposed to sexual activity and in all 30% are sexually active in the United States.

Nigeria is a society that discourages any form of sexual practices especially among female gender. One major contemporary social problem in the globe is the rampage of sexual activity and practices young females. A society that perceives children as passive and not active beings increases their vulnerability.

Different factors impede on sexual activity of females. The significance of culture in sexual activity and practices cannot be overemphasised. Some of these beliefs are tied to prejudice and misconceptions (Osagiobare, Oronsaye and Ekwakara, 2015). Kabir, Iliyasu, Abubakar, and Kabi (2004) opined that sexual activity was associated with various factors including religiosity, perceived parental attitudes towards sex, living arrangements, and school characteristics among teenagers in Kano, Nigeria. Envuladu, Van de Kwaak, Zwanikken and Zoakak (2017) found that teenagers in school were mostly influenced to engage in sexual activity by pleasure love and peer pressure while those out of school were influenced by forceful and transactional sex.

Advocate for Youths (2012) describes the socio-economic status, race or ethnicity, educational aspirations, life experiences and family structure influencing teenagers. Auslander, Rosenthal and Blythe (2005) found out that biological, psychosocial, and sociocultural factors can influence teenagers' sexual practices and activity. NASW (2001) and Fraser (1997) opine that peer group influences teenagers' development, decision making and attitudes towards sex. In fact, the yardstick for teenagers' identity formation and establishment of social relationships among peers is sexual development (Darroch et-al, 2001; Guilamo – Ramos, 2009; Moilanen, 2010 in Advocates for Youths 2012). It means that girls that abstained from sex did so because their friends abstained. However, Advocate for Youths (1997) asserts that teenage girls having abstinent friends, personal beliefs and perception of parents' negative reactions towards sex desist and resist sexual activity. Onset of early exposure to sexual activity, predispose teenagers to high risk of sexually transmitted infections (Kabir, Iliyasu, Abubakar, and Kabi, 2004).

Due to lack of sexual consent towards the female figure, sexual abuse and violence are common in such cases. The American Psychological Association (APA, 2006) defines sexual abuse as any unwanted sexual activity, with perpetrators using force, making threats or taking advantage of victims not able to give consent. The Pandora's Project (2016), identified sexual abuse and violence acts such as touching of any part of the body when clothed or unclothed; encouraging sexual activity like masturbation; penetration acts including penetration of the mouth; intentional engagement in sexual activity before a child; watching pornography or creating pornography and; encouraging females to engage in prostitution. Finkelhor, (2006) in his studies carried out in the United States revealed the following heart-breaking statistics that during a one year period in the United States, over the course of their lifetime, 28% of U.S youth ages 14-17 had been sexually victimize Sexual activity due to sexual abuse was reported among majority of adults' women than men especially teenagers from unhappy families, cohabiting individuals, single parents, and inadequate sex education (Finkelhor, Hotaling, Lewis and Smith, 1990; Vaillant-Morel *et-al*, 2016).

Education as a process provides the knowledge, skills, values (cognitive, affective and psychomotor behaviours) and attitudes required to enable an individual perform or function adequately and contribute significantly to the society. Offorma (2008) refers specifically to the functional education that can assist the female child to develop her physical, mental, social, emotional, spiritual, political and economic aspects of life. Alabi, Bahah and Alabi (2014) identified factors which have direct and indirect impact on their educational opportunities and potentials. Drawing from other scholars' contributions, the main factors include: family abuse and domestic violence, sexual abuse, rejection and neglect, genital mutilation, forced and early marriage, victimization and suspicion of witchcraft, homicides, inducement to prostitution. The scholars concluded that the quality and degree of participation of the females in the society is tied significantly to the quality of her education.

Moreover, lack of accessibility to educational opportunities limits the growth and survival of the females. Also, socio-cultural factors militate against female students' access to education (Offorma, 2009). Okeke *et al*, (2008), Alabi and Alabi, (2012) also itemised that child labour, poverty, lack of sponsorship, bereavement, truancy, broken home among others are major contributors to inability of the girl child to assess education for their personal development. Among the Americans, the priority placed on the status and value of male gender role discourages and hinders a supportive environment for women educational attainments (Khang, 2010). In addition, early marriages for ages 14-18 girls (Timm 1994, Park and Chi, 1999) leading to early parenthood and withdrawal from high school (Lee, 2007) have accounted for a common cultural practice that retards the educational attainments of the girl-children.

According to Erikson (1950, 1958), the teenage age, stage five of the eight stages of psychosocial development is characterised by identity versus role confusion. It implies that teenagers explore as a grown up through the help of peers, influences, and groups. The search for identity can be achieved otherwise withdrawal from others may set in. The theory emphasised how experience and behaviour can be influenced by nurture and experience.

It is a known phenomenon that sexual activity continues to be rampart in secondary and tertiary without excluding primary institutions. Statistics on the active participation of the female gender is in dearth, probably due to the sacredness of sex in the society.

Purpose of the study

The major purpose of the study was to investigate the issues relating to sexual activities of female undergraduates of Federal University of Agriculture, Abeokuta (FUNAAB). Specifically, the study:

- identified types of sexual activity,
- determined if consent was sought before sexual engagement,
- identified factors that influence sexual activities
- perceived effects of sexual activities on the education and psychosocial development of female teenagers in Federal University of Agriculture Abeokuta.

Methodology

Design and area of the study: The study adopted a survey research design. It sought information from teenagers in Federal University of Agriculture Abeokuta (FUNAAB) ***Population for the study***: The study population consisted of female teenagers in hundred level in Federal University of Agriculture Abeokuta.

Samples for the study: A random sampling technique was used in selecting 112 undergraduate female students attending Communication and General Studies (CGNS) 103 from 22 departments. One inclusion criterion was that girls between the ages of 15 and 20 years were involved.

Instrument for data collection: The instrument for data collection was a structural questionnaire comprising of four sections: the first section elicited information on the demographic characteristics; the second section focused on the types of sexual practices prevalent among respondents; the third focused on seeking of consent before engaging in sexual activity; fourth focused on the factors causing the engagement in sexual activity; the fifth section focused on the effects of sexual practices on educational attainment; while the last section, focused on the effect of psychosocial developments of respondents using a 5-point Likert scale. The mean of 2.50 was used for deciding the level of acceptance. The questionnaire items were generated based on the information gathered from the reviewed literatures.

Data collection and analysis: Two postgraduate students from the Federal University of Agriculture Abeokuta and University of Ibadan were employed as research assistants in the administration of questionnaire to the 100 level girls. The research assistants were tutored on the rules and regulations guiding the administration of the questionnaire and that they were instructed to give only to girls who were willing to complete and return it immediately to reduce misplacements and ensure good returns. The data were coded and analysed using descriptive statistics such as frequency count, percentage, mean and standard deviation.

Results

The analytic sample comprised of 110 female teenagers; 89.1% of them were within 15 - 20 years old, majority had SSCE has their educational level (96.1%) and about 74.6% were Christians. The table also shows that majority (73.6%) were from monogamy families while 17.3% were from polygamy and single family.

Findings of the study

Table 1: Distribution showing the types of sexual activities prevalent among the respondents

Variable	EF (%)	NEF (%)
1 Kissing	33 (25.6)	96 (74.4)
2 Raped	12 (9.3)	117 (90.7)
3 Caressing	13 (10.1)	116 (89.9)
4 Masturbation	8 (6.2)	121 (93.8)
5 Incest	2 (1.6)	127 (98.4)
6 Hunting	5 (3.9)	124 (96.1)
7 Watch pornography	7 (5.4)	122 (94.1)

% = percentage; EF – Experienced Frequency; NEF=Not Experienced Frequency

Table 1 shows that one-quarter (25.6%) of the teenagers have experienced kissing, caressing (10.1%) and rape (9.3%). The table also shows that 6.2% of teenagers have experienced masturbation while 5.4% watch pornography.

Table 2: Distribution showing whether or not Respondents Consent before Engaging in Sexual Activity

Sexual consent	Frequency (%)
Yes	117 (90.7)
No	12 (9.3)

Table 2 shows that before female teenagers engage in sex, majority (90.7%) of the respondents consent was sought while the consent of 9.3% was not sought.

Table 3: Factors Influencing Respondents Engagement in Sexual Activities

Factors Influencing Sexual Activity	Yes Frequency (%)	No Frequency (%)	Rank
Parental neglect	78 (60.4)	51 (39.5)	2nd
Night partying	72 (55.8)	57 (44.2)	7th
Movies	74 (57.4)	55 (42.6)	5th
Peer influence	93 (72.1)	36 (27.6)	1st
School activity (Essay competition, Sports, Fashion)	24 (18.6)	105 (81.4)	10th
Personal Desire	76 (59.0)	53 (41.1)	4th
Finance	74 (57.4)	55 (42.6)	5th
Culture	21 (10.9)	108 (83.8)	11th
Gifts/presents/ awards	44 (34.1)	85 (65.9)	8th
Parental involvement / support	37 (28.7)	92 (71.4)	9th
Poverty	78 (60.4)	51 (39.5)	2nd

Table 3 shows that peer influence (72.1%), parental neglect (60.4%), and poverty (60.4%), and personal desire (59.0%) as major factors influencing their engagement in sexual activity. Also, over half of teenagers (57.4%) concurrently reported that movies and finances influenced their sexual activity. It can also be seen from the table that night partying is another factor for sexual activity for over half (55.8%) teenagers. However, for majority of the teenagers, culture (83.8%), school activity (81.4%) parental involvements /support (71.4%) and gifts/presents/awards (65.9%) did not influence or encourage them to be involved in sexual activity.

Table 4: Perceived Effects of Sexual Activity on Education of Respondents

S/N	Effects of Sexual Activity on Education	$\bar{x}$	SD	Remarks
1	My experience of sexual abuse does not encourage me to speak confidently in classroom	2.36	1.47	Rejected
2	I find it difficult to ask questions in class	2.46	1.44	Rejected
3	I get distracted when I am reading	2.80	1.45	Accepted
4	Irregularity in school is because I must be with my sexual partner when not convenient for me	1.91	1.28	Rejected
5	It is difficult to comprehend in class because of wandering thoughts	2.81	1.46	Accepted
6	I can become passive or unproductive in school due to my sexual involvement	2.55	1.47	Accepted
7	I easily get distracted with school work	2.58	1.38	Accepted
8	My exposure to sex does not disturb my academic progress	2.59	1.51	Accepted
9	I can cope with sex and education at the same time	2.28	1.33	Rejected
10	I hardly participate in sports (activity) in school	2.57	1.41	Accepted
11	I may dropped out of school with the way am going about	1.87	1.28	Rejected
12	Others	1.67	0.52	Rejected

Table 4 shows that out of twelve items, six were accepted as perceived effects of sexual activity on the educational attainment of teenagers with mean rating of 2.50 while the other items had a mean rating less than 2.00. This implies that the engagement is sexual activity affect the education of teenagers.

Table 5: Mean and Standard Deviation Responses of Teenagers on the Effect of Sexual Activity on Psychosocial Development

S/N	Effect of Sexual Activity on Psychosocial Development	$\bar{x}$	SD	Remarks
1	My exposure to sex does not allow me interact with the opposite sex in the classroom	2.12	1.40	Disagreed
2	I stay away from opposite sex, because of the fear of not being abused	2.87	1.59	Agreed
3	I am emotionally disturbed	2.78	1.51	Agreed
4	Thoughts of engaging in sex depresses me	3.09	1.50	Agreed
5	I feel guilty each time I remember my past experiences relating with men sexually	2.90	1.62	Agreed
6	I isolate myself generally	2.44	1.29	Disagreed
7	It is difficult for me to trust anybody	3.36	1.50	Agreed
8	Sexual abuse has traumatized me	2.31	1.46	Disagreed
9	I feel like committing suicide	1.77	1.19	Disagreed
10	I refuse to tell people of my sexual experience because of stigmatisation	2.67	1.57	Agreed
11	I feel powerless with the opposite sex	2.42	1.49	Disagreed
12.	Others – fear of harassment, depression	2.00	0.71	Disagreed

Table 5 shows that six out of twelve items were agreed upon to be the effect of sexual activity on the psychosocial development of teenagers as their means are above 2.5 and above.

Discussion

The result of this study indicated that kissing, caressing, rape, masturbation and watching of pornography were the sexual activity experienced by female teenagers. In spite of the known phenomenon that sexual activity before marriage is against the Nigeria culture pre-marital sex. This is in line with the sexual activity identified by Pandora's Project (2016) to include masturbation, watching pornography. Specifically, kissing was the major sexual activity reported by one-quarter of the teenagers (25.4%). This could be a reflection of the state of teenagers finding it difficult to open-up their sexual activity. Research has shown that the globally, the spread of HIV has increased through kissing. Findings have shown that saliva and serum are unlikely to transmit HIV infection (Barr, et-al, 1992). For instance, infections such as STIs, chikungunya virus can be transmitted through passionate kissing, oral sex, among others (Barr, et-al, 1992). It is interesting to note that female teenagers masturbate, although the percentage seems insignificant. This implies that while some female teenagers cannot have sex with the opposite sex, they engage in sexual activity by arousing themselves.

It is worth noting that majority (90.7%) female teenagers gave their consent to the sexual activity. It shows that during teenager years, majority of teenage females tend to explore the pleasure of sexual activity, thus sexual abuse may not be common among them. This implies that there was no sexual assault or abuse among majority of them and was common only among few of the teenagers (9.3%) whose consent were not sought before engaging in sexual activity. Such activity may not be far-fetched to be rape. The few whose consent were not sought before sexual activity could have experienced sexual abuse or assault. Envuladu, Van de Kwaak, Zwanikken and Zoakak (2017) found that teenagers in school were mostly influenced to engage in sexual activity by pleasure love and peer pressure while those out of school were influenced by forceful and transactional sex.

Furthermore, positive and negative influencers were discovered as factors influencing teenagers engaging in sexual activity. The positive influencers – factors encouraging sexual activity include peer influence, parental neglect, poverty, personal desire and night partying. This corroborates the findings of Fraser (1997), NASW (2001), Auslander, Rosenthal and Blythe (2005), and Advocate for Youths (2012), that sexual activity among teenagers are influenced by peer group influences, socio-economic status, life experiences and family structure biological, psychosocial, and sociocultural factors. This finding is in line with Envuladu, Van de Kwaak, Zwanikken and Zoakak (2017) found that teenagers in school were mostly influenced to engage in sexual activity by pleasure love and peer pressure while those out of school were influenced by forceful and transactional sex. Apparently culture, parental involvement, school activity and gifts culture, school activity and support does not influence or encourage sexual activity. These can be called as negative influencers, i.e. factors that does not influence teenagers' engagement in sexual activity. This implies that negative influencers can be explored to curb sex among teenagers. For instance, Nigerian society, being a collectivistic society structure of African setting may stigmatised a teenager's openness as against the individualistic society or western culture. The implication of this with regards to culture is the fact that the society in which teenagers live can determines the extent to which they engage in sexual activity.

Thus, Nigerian culture being a collectivistic type, does not promote illegitimate sexual activity for an unmarried person and could be a reason why teenagers cannot openly discuss their sexual activity and practices; when compared to individualistic society that promotes independence and freedom of sexual activity and practices among young people. Thus, collectivistic culture can help curb sexual activity among young people.

The result of the analysis of research question four revealed that teenagers were able to identify with the fact that the find it difficult to comprehend in class, easily get distracted with school work, distraction while reading, academic progress is affected, easily get distracted and becoming passive to school work as effect of engaging in sexual activity on their education. The implication of this is that engagement in sexual activity pose a threat to the educational attainment of teenagers.

Irregularity in the education of teenagers is certain in the next few years of the educational pursuit due to their involvement in sexual activity. This is because teenagers are currently in their first year of programme and first semester precisely without any result to show their performance.

The effect of sexual activity on the psychosocial development of teenagers revealed that trust was a major issue. This corroborates the first stage of psychosocial development of trust versus mistrust (Erickson, 1958). The implication of this is that, early exposure to sexual activity could lead to abuse and affect teenagers' ability to trust others. Exposure to sexual activity has made it difficult for teenagers to trust anybody. The reason could be that some of these teenagers might have become disappointed in the individuals they trusted.

Other effects of engaging in sexual activity on female teenagers include feeling depressed, feel guilty when they remember relating with men sexually, stay away from opposite sex because of being abuses, emotionally disturbed and refuse to tell people of their sexual experience due to stigmatisation.

Conclusion

Adolescence is a critical stage of development that needs not to be overlooked. While teenagers gain autonomy from parents and guidance, they explore and engage in sexual activity. Thus, pursuit of autonomy in different aspects of their developments is evident. Teenage years is characterised by the need to explore their body and environment. From the findings, it can be concluded that sexual activity is a common phenomenon among teenagers although, majority could not openly identify with the activity. Thus, sexual abuse or assault only occurs among few of them. Teenagers have the desire to explore their sexual identity by engaging in voluntary sexual activity. The study was able to identify positive influencers of sexual activity (peers, parental neglect, and poverty and personal desires) as well as negative influencers (culture, school activity, parental involvement, and gifts) among teenagers. Negative influencers seem to discourage sexual activity while the positive influencers encourages sexual activity in females. Sexual activity has minimal effect on the education of female teenagers. Psychosocial development of teenagers is being affected due to engagement in sexual activity resulting in psychosocial crises such as mistrust, sense of guilt and depression. The implication of this is that the social identity of teenagers may likely be impaired.

Recommendations

1. The counselling unit of the university should give new students orientation on issues relating to sexual activities.
2. The university health centres should organise health and sex talk during resumption of intake of new students.
3. Other stakeholders such as the religious, government and families identifying with the sexual needs of teenagers and adolescents should pragmatically involve at their different levels by creating a forum where issues could be discussed.

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JHER Vol. 26 No. 2 December 2019, pp. 20-31

Use of Locally Dyed Fabric (*Adire*) as Ceremonial Group Attire (*Aso Ebi*) in Lagos, Nigeria

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Abstract

The main purpose of the study was to assess consumers' use of locally dyed fabrics as ceremonial group attire in Lagos. Specifically, the study determined the various uses of *adire* for *aso-ebi*, attributes of *adire* for *aso-ebi* as perceived by consumers and factors influencing the use of *adire* as *aso-ebi*. The design of the study was a survey. Population was made up of female civil servants at the Lagos State Secretariat. The estimated population size was 2000. A random sample of 200 respondents was used for the study. Questionnaire was used to collect data. Data were analysed using frequencies, percentages and means. Findings revealed that the use of locally dyed fabrics as ceremonial group attire is considerably at the low ebb; the consumers have a low perception of the fabric attributes of *adire* as *aso-ebi*. Also, factors like bulk availability, frequency of use and accessibility influences the use of *adire* as *aso-ebi* greatly.

Keywords: *Adire*, *Aso-ebi*, Consumers, Group outfits, Hand-crafted textiles

Introduction

Ceremonial group attire '*asọ-ẹbi*', is a unique family uniform or group outfit that is worn during ceremonies and events. *Aso* means clothes while, *ebi* means family. It is a distinctive set of clothes or styles worn to identify somebody as a member of an extended family or a particular group. According to Orimolade, (2014), *aso-ebi* is a fabric that is selected, made into garments and worn by groups of people who are related to one another in various ways such as family, friends or comrades. The Yorubas take pride in *asọ-ẹbi*, whether of low or high quality fabrics for every occasion. Usually, as*ọ-ẹbi* may be a fabric that is unanimously chosen prior to the occasion; for example, ankara, asọ-oke, Kampala, cotton, damask, veritable wax, brocade, batik, and lace materials. Culturally, *aso-ebi* originated from the Yorubas in the Western part of Nigeria (Ogechie and Anetor, 2015), Sowole (2011) opined that costuming in some periodic Yoruba Television and theatre production set in the 1960's suggest that *asọ-ẹbi* had been in existence for years. He narrates how Abeokuta Women's Union led by legendary activist, Mrs Funmilayo Ransome Kuti used group outfits as a tool of political power and protest. At that time, it was meant to encourage a sense of belonging and communal identification as well as maintaining leveller in class, educational and economic disparities of the time. The market women wore the same cloth (*àdìrẹ*) to revolt against the regional colonial government on imposition of tax. In some quarters, this is argued to be the origin of group outfits for protests (Akinmoye, Ojo and Ogunduyile, 2016). The culture of wearing ceremonial group attire has been absorbed into the Nigerian society such that it is now seen as a national culture by many other ethnic groups in Nigeria. Madukasi (2018) attested that the Igbo people of South-Eastern Nigeria were said to borrow the idea of *aso-ebi* simply known as *Akwa-Otu* in Igbo tonal language from Yoruba culture and tradition.

As*o-ebi* are inseparable from events especially festivals in South-Western Nigeria, it is obviously a means of identification as all wearers are implicitly demonstrating that they are proud to be identified with the celebrant. Where there are many celebrants and each of them chooses a fabric of his or her choice, it will not be difficult to identify the friends, colleagues or well-wishers of a particular celebrant (Familusi, 2010). Orimolade (2014) emphasizes on the essence and importance of *aso-ebi* in the society, he explains that the Yoruba and other Nigerians, have a very boisterous social life which is permeated with celebrations. Many communities have thriving informal and semi-formal associations (Ajani, 2012) which use every opportunity as a reason to gather for a cause. At these gatherings, *aso-ebi* fabrics are used to impose social uniformity. Also, Hugh (2006) attests to the glamour and pageantry of display of dress items during events in which *aso-ebi* makes more obvious. Initially, *aso-ebi* was only used in funeral activities to represent the family of the deceased and other immediate family members, but the phenomenon has since evolved into a formal culture for other events such as weddings, naming ceremonies, birthdays, church events, house warming parties among a plethora of other reasons used to stage a celebration (Amubode, 2009; Orimolade, 2014). During these celebrations, celebrants, friends and family members of celebrants would pick a uniform cloth as a form of representation of unity among members. The type and quality of these fabrics are significant in identifying lineage or displaying status and in contrast they are also used to enforce equality (Ajani, 2012). The absence of *aso-ebi* fabrics at these celebrations, which is a rarity, is considered improper and at worst, in the absence of the *aso-ebi* fabric, a uniform colour code will be imposed. In Nigerian caucuses, these celebrations are commonly termed in Nigerian slang "*Owambe*" which, loosely translated in English, means "it is there". They are used to describe the point of association, that is, the reason and place of the celebration. The "celebrant", in these situations, dictates the fabric to be used for the event and the participants undertake the responsibility of buying the fabric stipulated (Familusi, 2010) and making the garments.

Among the Yoruba, indigenous textile products such as hand woven and *àdìrẹ* fabrics were commonly used as *aso-ebi*. One phenomenon that has sustained the production and use of locally dyed fabrics (*adire*) in the past was its use as group outfits by family members and social groups (Akinmoye *et.al.*, 2016). The best known and most valuable, *adire*, is a deep blue cloth made by the Yoruba of the South-Western Nigeria; the design is created by a process of resist dying, which prevents dye from being absorbed by some parts of the cloth. *Oniko* is a method of tying patterns into the clothes, *Eleko* designs are stencilled or painted onto the cloth with starch (usually from cassava or yam) while *Alabere* uses raffia to stitch designs into the fabric. Once the designs are complete, the cloth is then dipped into a dye and dried; the fabric is then untied, or the starch and stitches are removed, to reveal a beautiful design (Ibeto and Ogunduyile, 2009). However, it is unfortunate to observe that this craft appears to be less appreciated in the south-west fashion circle in Nigeria. The use of locally dyed fabrics as group outfits began to dwindle with the production and importation of contemporary textile products (Ajani, 2012). No doubt, the *aso-ebi* culture has made a huge market for the contemporary products; these products come in form of *Ankara* (African wax prints), Damask, Lace, Guinea brocade, etcetera. The use of these products as group outfits provided a lot of product sales to their manufacturers without any significant economic gain to the Nigerian economy; those textile companies in Nigeria that would have provided these products are moribund. The erosion of cultural heritage made Makinde *et al*., (2009) to advocate for alternative usage of the locally hand-crafted fabrics so as to sustain production which has waned over the years. What this implies is that before the prevalence of the machine made fabrics, the locally produced fabrics comes with much benefit to the society. Apart from the fact that it fosters communal activities and identity, it was a source of livelihood to the neighbourhood as many were gainfully engaged through the practice. One could therefore imagine the economic status of the producers with increased patronage level of these fabrics. The Nigerian textile industry was hitherto the third largest in Africa after Egypt's and South Africa's and was among the largest employers of labour in the country. The industry is today witnessing great depression and national consensus in that it must be revived as a key aspect of the comatose manufacturing sector and sad deindustrialization - if Nigeria is to develop and improve the quality of lives of its people (Olutayo and Akanle, 2009).

It is no longer news that there is decline in the use of locally dyed fabrics among contemporary youths, previous studies showed that people now have alternative option of fabrics; the fabrics commonly used instead are the industrially printed and woven fabrics which are often times imported. Only a few people still believe that the locally hand crafted (both tie-dye and resist fabrics), are likely to reflect a more distinct and unique beauty in the society. The people in this category prefer tie-dye/ batik to some imported cotton and brocade material. According to Olutayo and Akanle (2009), the youths must be recognised and annexed as sustainable human capital in an effort to revive the consumption of *aso-oke* and other locally made textile products. It is generally believed that Nigerians like to consume what they do not produce and this has led to a high level of importation where very little is exported; this has had a negative impact on the economy of the nation and the local textile industry has also suffered a great deal from this 'disease' that has spread across the nation. Previous studies have shown that Nigerians have unfavourable attitude towards home made goods because of the perception that locally made goods are inferior in quality to imported substitutes. It has been observed that Nigerians now often use imported fabrics as ceremonial group attires; this is in line with Ajani (2012) who reported that the growth of *aso-ebi* phenomenon has led to the high rate of importing fabrics into the country. In the past, the Yoruba which constituted the larger proportion of residents in South-western Nigeria took pride in any type of handcrafted textile products they put on or wear but the story today has changed, especially among the youths (Agbadudu and Ogunrin, 2006). This has had a huge effect on the growth of indigenous textile industries since appreciation by consumers determines efficiency of production of these fabrics. The problem of this study however, is the low use of locally dyed fabric as ceremonial group attire.

Objectives of the Study

The general objective of this study was to assess consumers' use of locally dyed fabrics as ceremonial group attire (*aso-ebi)* in Lagos. Specifically, the study determined;

1. various uses of *adire* for *aso-ebi*
2. attributes of *adire* for *aso-ebi* as perceived by consumers
3. factors influencing the use of *adire* as *aso-ebi*.

Methodology

***Study Design*:** The design of the study was a survey.

***Area of Study*:** This study was conducted in the Lagos state secretariat. As both the commercial centre and the capital city of Nigeria between 1914 and 1991, Lagos was an eclectic ensemble of culture and lifestyle. It attracted an aggregate population of diverse ethnic groups from different parts of Nigeria and beyond; this was an obvious justification for a popular idiom known as 'Lagos life' as used in some quarters (Nwafor, 2011). Lagos is said to be one of the most famous cities in West Africa, it has a vibrant and growing central business district with several business concerns which attributes to the high population and level of sociality. Lagos is known for its diversity in culture, art and fashion; this city is also popularly known for its *owanbe* parties which usually trend on different social media platforms and remain on the lips of people in different states of Nigeria and outside the country, these '*owanbe'* parties of course come with the heavy use of *aso-ebi* to emphasize social status and affluence. Furthermore, several dealers of imported and indigenous textile materials who sell at bulk rates are domiciled in Lagos; this attracts small scale fabric sellers and party organizers from other states of Nigeria to purchase fabrics for the purpose of retailing them as *aso-ebi* or for other purposes. The secretariat is situated right inside Lagos at Obafemi Awolowo way, Alausa Central business District, Ikeja, Lagos.

***Population for the study*:** The population of this study were the female civil servants at the Lagos State Secretariat, Ikeja, Lagos state. The choice of female respondents is based on the belief that women are generally more associated with the use of group outfits as compared to men. There are twenty-four (24) government ministries in Lagos state. The study was restricted to three (3) ministries as it was observed that these ministries have the highest percentage of women; ministries of education, health and Lagos State Civil Service Commission. The estimated population of the female workers in the sampled population was 2000.

***Sample for the Study*:** A two-staged sampling technique was used to select respondents from each of the purposively selected ministries; simple random sampling was used to select respondents from each ministry with a simple fraction of 10% bringing the sample size to 200. However, seventy (70) questionnaires were administered in each of the ministries.

Instrument for Data Collection: The research instrument used was a structured questionnaire. The questionnaire was sectioned and designed in line with the objectives of the study; hence, the questionnaire contained four main sections:

The first section contained questions that assessed the socio-demographic and socio-economic characteristics of the respondents. This section contained questions about respondent's personal information, environment, financial abilities and social status. The second section determined consumer's various uses of *adire* for *aso-ebi*. This section contained multiple choice questions and also questions in Yes or No format. Also, the third section examined consumer's perception on attributes that influence the use of *adire* as a*so-ebi*; a four-point scale was used to measure this, i.e; SA- Strongly Agree, A- Agree, D-Disagree and SD-Strongly Disagree. Finally, the fourth section examined factors influencing the use of a*dire* as *aso-ebi*. This section also adopted the four-point scale format.

Validity and Reliability of the Instrument: the research instrument was subjected to face and content validity, the questionnaire was vetted by experts in the field in terms of clarity, appropriateness and relevance to the work.

A pilot test was conducted using 20 respondents among female civil servants in Ibadan, Oyo State to test the reliability of the instrument. A Cronbach alpha value of 0.82 was obtained, hence, this indicated that the instrument was reliable.

***Method for Data Collection*:** The researcher with two (2) research assistants visited the area of the study, interacted with the respondents and distributed questionnaires among selected female civil servants. The research assistants had been hitherto briefed about the aim of the study and were informed to assist respondents when necessary. After collation, 200 questionnaires were analyzed due to loss and incompleteness of information.

***Data Analysis Technique*:** Descriptive statistics was used to analyse the data using frequencies, percentages and means. SPSS version 20 was used.

Findings

According to the findings of this study, the least age of the respondents was 22 years while the highest was 65 years. The mean age was 37.02, the modal ages 35 and 40 years had a tie of frequency of 21 each: the median age was 36 years and the standard deviation was 8.717. About half (53.5%) of the respondents were Christians, 45% practice Islam and 1.5% were traditional worshippers. Most (67.5%) of the respondents were married, 23.5% were single. Only 7% of the respondents were divorcees and 2.5% were widowed. The distribution of the tribe of the respondents was largely influenced by the location of the survey, as expected, most (66%) of them were Yoruba, 18.5% were Ibo, 9% were Hausa and 6.5% belong to none of these tribes. The level of education shows a high level of literacy among the women, on the average (49.5%), they are University graduates, 28% had HNDs, 8% had ONDs, 11% are Secondary school holders, while only 3.5% had first school leaving certificate.

Table 1: Consumers' Use of Adire for Aso-ebi

Statements	Frequency (%)
Which of these fabrics will you use for *Aso-ebi* for a wedding ceremony?	
Adire	11(5.54)
Ankara	71(35.5)
Lace	102 (51)
Others	16 (8)
Which of these fabrics will you use for *Aso-ebi* for a burial ceremony?	
Adire	32 (16)
Ankara	105(52.5)
Lace	49 (24.5)
Others	14 (7)
Which of these fabrics will you use for *Aso-ebi* for a birthday party?	
Adire	23(11.5)
Ankara	53 (26.5)
Lace	83 (41.5)
Others	41 (20.5)
Have you ever purchased *Adire?*	
Yes	106 (53)
No	94 (47)
Have you ever worn *Adire* as *Aso-ebi*?	
Yes	82 (41)
No	118 (59)
Have you ever used *Adire* as *Aso-ebi* for your event?	
Yes	57 (28.5)
No	143 (71.5)
Will you consider using *Adire* as *Aso-ebi* for your event?	
Yes	81 (40.5)
No	119 (59.5)

Total number of respondents (N) = 200

Table 1 shows that very few respondents preferred the *adire* fabric as ceremonial group attire for the different occasions considered. Half (51%) of the respondents preferred lace for their wedding ceremony, *Ankara* (52.5%) for burial ceremony and 41% preferred lace for their birthday party ceremony. Fifty-three (53%) of the respondents said they have purchased the fabric at least once. More than half (59%) of the respondents have never worn A*dire* as *Aso-ebi* and majority (71%) have never used A*dire* as A*so-ebi*. Also, more than half (59%) of the respondents said they would not consider the use of *Adire* as an A*so-ebi*.

Table 2: Respondents' Perception on the Attributes of *Adire* as a Consideration for *Aso-ebi*

Attributes	Statements	SA	A	D	SD	Mean
Quality	The quality of *Adire* fabric is low, therefore it does not meet *Aso-ebi* standard	34(17%)	53(26.5%)	62(31%)	51(25.5%)	2.35
Colour	The colour of most *Adire* fabric is dull for *Aso-ebi*	23(11.5%)	67(33.5%)	81(40.5%)	29(14.5%)	2.42
Durability	The *Adire* fabric is not durable enough to be used for *Aso-ebi*	27(13.5%)	62(31%)	75(37.5%)	36(18%)	2.40
Beauty	*Adire* is not beautiful enough to be used for *Aso-ebi*	16(8%)	47(23.5%)	99(49.5%)	38(19%)	2.21
Price	*Adire* is too expensive to be purchased for *Aso-ebi*	23(11.5%)	43(21.5%)	110(55%)	24(12%)	2.31
Perfect craftsmanship	The *Adire* fabric lacks perfection in design arrangement	94(47%)	68(34%)	17(8.5%)	21(10.5%)	3.17
Uniqueness	The *Adire* fabric is unique and can be used for *Aso-Eb*i	54(27%)	59(29.5%)	64(32%)	13(6.5%)	2.67

The overall mean for Table 2 is 2.50. Using the mean key, the overall perception of the respondents for fabric attributes of *adire* being considered as *aso-ebi* is low. Although, more of the respondents disagreed (mean= 2.35) that adire has low quality; about half also disagreed that adire is dull coloured (mean= 2.42), not durable (mean= 2.40). More respondents agreed that adire fabrics are beautiful (mean= 2.21), not too pricey (mean= 2.31) and unique (mean= 2.67). However, it was perceived that the fabric lacks perfect craftsmanship (mean= 3.17).

Table 3: Consumers' Views on Factors Influencing the Use of *Adire* as Aso-ebi

Factors	Statements	SA	A	D	SD	Mean	Rank
Income	Income is not an important factor in choosing material to use as *Aso-ebi*	22 (11%)	48 (24%)	87 (43.5%)	43 (21.5%)	2.24	7th
Availability	*Adire* is not readily available for purchase for aso-ebi	31 (15.5%)	113 (56.5%)	44 (22%)	12 (6%)	2.81	5th
Frequency of use	*Adire* is not frequently used as *Aso-ebi* in the society	42 (21%)	136 (68%)	22 (11%)	0 (0%)	3.10	2nd
Bulk availability	*Adire* is not usually available in large quantities	96 (48%)	55 (27.5%)	24 (11%)	27 (13.5%)	3.12	1st
Cultural background	Cultural background does not affect the use of *Adire* as *aso-ebi*	49 (24.5%)	84 (42%)	56 (28%)	11 (5,5%)	2.85	4th
Religion	Some religions do not permit the use of *Adire* as a*so-ebi*	17 (8.5%)	32 (16%)	86 (43%)	65 (32.5%)	2.00	8th
Price	*Adire* is not frequently used as *aso-ebi* due to its price	28 (14%)	59 (29.5%)	87 (43.5%)	26 (13%)	2.45	6th
Accessibility	*Adire* is not easily accessible as *Aso-ebi* material to consumers	41 (20.5%)	116 (58%)	30 (15%)	13 (6.5%)	2.93	3rd

Table 3 shows consumers' views on fctors. Using the mean key; 0.5-2.49= positive perception, 2.5-4.0 negative perception, considering that all questions were asked in the negative form, the respondents perceived that religion, income (mean= 2.24) and price (mean= 2.45) are factors that positively influences the use of adire as aso-ebi. However, it was perceived that availability, cultural background, accessibility, frequency of use and bulk availability influence the use of adire as aso-ebi negatively. Using the ranking system, the factor that was perceived to negatively influence the use of *Adire* as *aso-ebi* negatively the most is bulk availability (mean= 3.12); this could be a major factor limiting its use since aso-ebi is usually purchased in bulk to ensure uniformity.

Discussion

This research was designed to assess consumers' use of locally dyed fabric (*Adire*) as ceremonial group attire (*Aso-ebi*) among female civil servants at Ikeja, Lagos State. The average age of the respondents of this study was 37 years, 53.5% of the respondents were Christians while 45.0% were Muslims. On the average (49%), the respondents were B.Sc holders, 28% were HND holders and the respondents were mostly (67.5%) married; this implies that the respondents of this study are adults and is very likely that they would have been actively involved in either planning or been actively involved in a ceremony which makes them appropriate for this study. Most (66%) of the respondents were Yoruba, this was expected since the study was carried out in South-west Nigeria which is grossly dominated by the Yoruba culture. All of the respondents were Civil servants and majority (70%) of them earned above 50,000 naira.

The study determined consumers' use of adire for *Aso-ebi,* results showed that averagely (51%), respondents preferred to use Lace fabrics for wedding ceremonies, 35.5% preferred *Ankara* and only 5.5% would use *Adire*. For burial ceremonies, the respondents preferred to use *Ankara* over Lace while preference for *Adire* remained low (16%). This is in line with Ibeto and Ogunduyile (2015) who posited that Ankara fabric has become an inevitable part of any social functions in Nigeria. According to Chichi, Howard and Baines (2016), African wax prints (e.g Ankara) have significant communicative values; indicating status or wealth and conveying messages as a means of non-verbal expressions in official occasions, political avenues, and for social purposes. It is seen as being colourful, graceful and has been embraced by many especially in West Africa resulting in the decline in use of locally produced textiles. Makinde *et.al*. (2009) also suggested that the use of locally hand crafted textiles declined following the acceptance of A*nkara* as *Aso-ebi.* Similarly, the study of Akinmoye *et.al* (2016) revealed that the use of handcrafted textile products as group outfits is no longer popular among the Yoruba especially the youth, even though in the past, the Yoruba took pride in any type of handcrafted textile products they put on, as they became more civilised, the use of indigenous hand crafted textiles especially for occasions keep declining. The decline in the use may be due to urban influence, some agents of civilization, a craving for perfection, trust in imported products or just the quest to show off status. Studies have shown that the aso-ebi culture instead of being a culture of solidarity, it has metamorphosed to serve as a medium of social strive, display of affluence, and discrimination against people, who are either unwilling or unable to buy the aso-ebi (Ogbechie and Anetor, 2015). Asides this, consumers' desire to use adire as aso-ebi may also be clouded by the availability of several imported fabrics to choose from, knowing that majority of their friends and families may prefer to purchase those. Past studies have shown that Nigerians have unfavourable attitude towards home made goods because of the perception that locally made goods are inferior in quality to imported substitutes (Ibeto and Ogunduyile, 2015).

Results showed that the respondents' perception on the fabric attributes of *adire* as a consideration for *Aso-ebi* is low (mean= 2.50). The attributes that were considered includes; quality, colour, durability, beauty, price, perfect craftsmanship and uniqueness. Considering the mean scores, the respondents have a moderately positive perception about the attributes; quality, colour, durability, beauty, price and uniqueness with mean scores of 2.35, 2.42, 2.40, 2.21, 2.31 and 2.67 respectively. However, respondents' perception is low for perfect craftsmanship of adire (mean = 3.17), it was revealed that majority (81%) of the respondents regard *Adire* as too poor to be used for ceremonial group attire, according to their view, the fabric lacks perfection in design and pattern arrangement and this attribute may be noted as a core reason why *Adire* is not readily used since most consumers want fabrics that would promote uniformity and solidarity; adire being a manually produced fabric, lacks consistency in design. According to Akinmoye (2016), consumers opined that most handcrafted fabrics lack perfect craftsmanship and are inconsistent in designs. Ibeto and Ogunduyile (2015) also suggested that since the production of traditional fabrics, be it adire, akwete, aso-oke and others are still done manually, uniform standard in terms of colour fastness, durability, innovation and creativity cannot be guaranteed. The uniqueness of the fabric is unargueable as it is almost impossible to find two *adire* fabric of exact same design. Most (68%) of the respondents believe that the fabric is beautiful. Similarly, Akinmoye (2016) reported that that the designs and motifs of hand crafted fabrics are appealing and the creativity of the practitioners are acceptable.

The study assessed consumers' views on factors influencing the use of *Adire* as ceremonial group attire. According to the findings of this study, the highest rank factor was bulk availability, majority (72%) of the respondents stated that *Adire* is not readily available for purchase in large quantities. The manual production of this fabric gives explanation to this, although, one of the most important factors to consider when selecting fabric for group outfit purpose is the availability of the fabric in very large quantity but *Adire* seems to be lacking in this, apparently, the producers who also double as merchants do not have the products in bulk or large quantity that can cater for group outfits. This is similar to the findings of Akinmoye (2016) where it was revealed that the consumers admitted that the unavailability of hand crafted products in large quantity turn consumers off for the demand of the product, it further stated that steady availability would have encouraged celebrants to make use of the products as group outfits. Another highly ranked factor was frequency of use, the fact that it is generally believed that *Adire* is usually not used as aso-ebi may have a negative influence on those that would have used it for their ceremonies. Accessibility is a very important factor to also consider as majority (78.5%) of the respondents agreed that *Adire* is not easily accessible, it has been observed that *Adire* is usually not popularly sold in general textile or clothing markets; some may even need to travel to buy and this could discourage them from purchasing the fabric. Other factors that may influence use of *Adire* as ceremonial group attire according to the view of the respondents of this study are cultural background, availability, price, while income and religion were the least to be considered. Similarly, Akinmoye (2016) also found that the handcrafted textile products were acceptable as group outfits among the populace because of its unparalleled aesthetics, cultural and prestigious values, however, its use as group outfits are considerably at the low ebb.

Conclusion

In conclusion, the use of the *adire* fabric among consumers as ceremonial group outfits is on the low ebb, this low usage can be attributed to the fabric's lack of perfection in design and pattern arrangement, unavailability of the fabric in large quantity in other to encourage bulk purchase, and its low usage as *aso-ebi* by others. Although, the fabric was perceived as not too expensive, it does not meet the standard of *aso-ebi* fabrics in terms of design consistency and accessibility. On the contrary, the a*nkara* (African wax prints) and other machine made fabrics differs from hand crafted textiles like *adire* in the sense that it is mass produced; it can accommodate portraits and graphics as motif in the surface design, and in addition, it is sometimes cheaper than most locally produced fabrics. *Adire* is unarguably a beautiful material which could be accepted as ceremonial group attire among consumers if some of the considered factors are improved upon. This will result in a positive turn around in the purchase and use of the fabric as ceremonial group attire among consumers which can boost sales of indigenous textiles, lead to increased production and a better appreciation of the South-western culture.

Recommendations

Based on the findings of this study, the following were hereby recommended;

1. *Adire* producers should work towards perfection of craftsmanship by attending seminars and workshops to improve on their skills.
2. Government should assist the producers of *adire* by providing them with loans to expand their businesses and to purchase equipment that can aid bulk production of the fabrics.
3. Appreciation of the locally produced fabrics should be encouraged by consumers to ensure continual production of the fabric.

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JHER Vol. 26 No. 2 December 2019, pp. 31-39

Fastness Properties and Acceptability of Fabric Dyed with Rice-Husk Resist Agent

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Abstract

The purpose of conducting this research was to assess the fastness properties and acceptability of Rice husk resist agent in fabric decoration. Two specific objectives and two research questions were raised for the study. Experimental research design using laboratory method was used. Sensory evaluation of sight was used to elicit responses from the judges. Total samples of 35 judges were drawn using purposive sampling techniques to respond to the score card items. Gray scale for assessing change in colour and staining was used as instrument for data collection. Mean and standard deviation were employed to answer the research questions. The result showed that the effectiveness and acceptability of fabrics decorated from rice husk resist agent is significantly high as mean is 3.0 and above. The study concludes that rice husk resist agent is effective and fabric dyed with rice husk were acceptable therefore rice husk can be used as a resource material for decorating fabric and teaching creative skills in Home Economics, textile designs and production of traditionally dyed fabric. This will help reduces the problem of waste management by clearing up the hips pilled around the environment. It will generate income to rice growers/miller's and reduce environmental hazards caused by burning and finally it will reduce cost of production of resist dyed fabric and increase marketability.

Introduction

Fastness properties refer to how the colour of dyed fabrics will react when exposed to different conditions. The question is, will it bleed or run colour? Technically, is the colour fast? Colour fastness properties are those characteristic of a fabric which determines its colour retention performance during usage. Colour fastness of dyed fabrics is always of interest to the consumers because the beauty of dyed fabric is of no value unless the dye is fast, under the conditions in which the fabric is to be used Nkeonye, (2009). The most suitable dyed for particular end users are those which will provide required fastness at the minimum cost. The performance of any dyed fabric is dependent upon the combinations of inherent dye properties and geometrical arrangement of the fibres and other dye materials. Moreover, Obiana (2011) opined the female perception of cloths is probably more concerned with appearance than with comfort. These colour fastness properties can be accessed through the following parameters such as wash, pressing, sun, rubbing and perspiration. Therefore, measurement of the fastness properties of clothing materials will assist apparel manufactures, innovators and users in developing good performance fabrics that will serve their useful purpose to consumers' satisfaction. These fastness properties are affected by many attributes and can be assessed either subjectively or by objective measurement.

The Rice husk also called hulls or chaff is one of the most widely available agricultural wastes in many rice producing countries around the world. Rice husk is described as the outermost layer of protection encasing a rice grain. It is yellowish in colour and has a convex shape. It is slightly larger than a grain of rice, thus lengths up to 7mm are possible. Typical dimensions are 4mm by 6mm. It is lightweight, having a ground bulk density of 340kg/m^3 to 400kg/m^3 (Ajay, Devendra & Om, 2012). Rice husk waste has always been deposited beside the milling factories and no demand of it has been made by people around as it is neither good for animal feeding due to its low nutritional value nor for any other use as rightly stated by Warren and Farrell, (1990) that rice husk has no nutritional value for poultry as well as to other animals.

The well known use of rice husk in most rice producing countries is that it is usually dumped and burnt for heat or used as landfill. Burning of husk in ambient atmosphere leaves a residue, called Rice husk ash (Koteswara & Pranav, 2006). The disposal of rice husk has been a substantial problem for rice growers and rice millers, since the husk are not suitable for use as fertilizers and is disposed by open burning, burying or used as land fill. Burning of rice husk also releases Carbon-monoxide to the atmosphere (which is poisonous), creates undesirable atmospheric pollution. Rice husk and its ash is a great environmental threat causing damage to land and surrounding area where it is dumped. Therefore, commercial use of Rice husk and its ash is the alternative solution to disposal problem, and so this prompted the researcher to seek an alternative ways of utilizing the waste for useful purposes such as processing it as a possible resist agent for fabric decoration on cotton fabric (dyeing).

Resist dyeing is a term for a number of traditional and contemporary methods of dyeing textiles with patterns. Wada (2002) defines resist as "technique or material that creates patterns on cloth by impeding dye from penetrating fabric". According to (Vainker, 1990), a resist is a product or process that temporarily or permanently blocks fabrics ability to absorb another wet medium. Resist can be defined as a process of textile colour patterning "by preventing the uptake or fixation of a dye in a subsequent operation" (McIntyre & Daniels, 1997).

Textile/fabric decoration is the art of changing the appearance of natural and synthetic surfaces by the application of traditional, stylized, digitized, and illusionary techniques to embellish a product (Eric, 2015). Audubon (2009), states that some educators have described it as image, colour, texture, and pattern applied to surfaces within the man-made environment. Camila (2012) opined that Fabric decoration encompasses the colouring, patterning, and structuring of fibre, yarn and fabric. This involves creative exploration of processes such as dyeing, painting, printing, stitching, embellishing, quilting, weaving, knitting, felting, and papermaking. The reasons for decorating fabrics vary with each individual, community or society and may be done for aesthetic, social, cultural, ritual, religious, political or economic reasons. These factors often determine the fabric type, processes, colour and motifs used. The word fabric is often used interchangeably with textile, cloth, and material.

Meinke (2012) opined that fabric decoration encompasses a wide variety of techniques for altering the surface of fabric, whether it is cotton, silk, wool or a synthetic fabric. Altered fabric surfaces can be accomplished by any of the following techniques, either individually or in combinations: dyeing fabric, stitching, either by machine or hand, painting on fabric, using a resist such as beeswax, soy wax or a water-based resist to separate colours and to create a design.

Colour is the most exciting design element, which has always attracted mankind. It is one of the most important elements of fashion design because it is the first thing noticed in a garment. Clothing is usually selected because of its colour. Colour is a property of light. It is a sensation which occurs when light enters eyes.

The term vat dye is used to describe a chemical class of dyes that are applied to cellulosic fibre (i.e. cotton) using a redox reaction. Vat dyeing is a process that refers to dyeing that takes place in a bucket or vat. Almost any dye, including fibre-reactive dyes, direct dyes, and acid dyes, can be used in a vat dye. Cotton, wool, and other fibres can be all dyed with vat dyes. The original vat dye is indigo, once obtained from plants but now produced synthetically. Some of its Advantages includes: Excellent colour fastness, Less impurities, Excellent solubility, High strength, High quality, Physical Properties:, Appearance : Powder/Grain, Properties: Good solubility in water, Usage: Mainly used in cotton and fabric etc. , Storage: Must be stored in shade ,dry and well-ventilated warehouse . Keep it away from sunlight (Price, Cohen, & Johnson, 2005). Dyeing can be done in the garment, fabric, yarn, fibre stage, and sometimes even before, which is called stock dyeing.

There are several ways to conduct the dyeing process. Dyeing is the process of adding colour to textile products like fibres, yarns, and fabrics. Dyeing is normally done in a special solution containing dyes and particular chemical material. After dyeing, dye molecules have uncut chemical bond with fibre molecules. The temperature and time controlling are two key factors in dyeing.

The researchers embarked on this study as a result of improper way of disposing rice husk by milling factory around residential areas which has been causing problem to the area especially during the raining season as running water will carry it away and scatters the waste at different places and as such dirty the environment. The researchers were stimulated to embark on this study in other to find an alternative ways of utilising the waste and also to generate wealth out of it for the good of the people and at the same time bring about new knowledge.

Furthermore, it is obvious that in most Nigerian schools and colleges, skill acquisition and innovation is the clamour of the federal government for our youths to reduce the problems of unemployment in Nigeria. Resist dyeing technique is one of the needed skills that can furnish youths with skills for entrepreneurship and reduce unemployment in the nation. If Nigerians are to patronize resist dyed Nigerian fabrics, it has to be colour fast, durable and acceptable by consumers. Fading of colour, is undesirable characteristics associated with resist dyed fabric and when resist dyed fabric can be proven to be satisfactory and acceptable through research like this, then we have some of our confusing problems in clothing selection, patronage and care solved. The researchers taught of so many means of generating another resist agent as an alternative resist agent by making use of rice husk which is a waste, and is always available at no cost. Interactions with most millers and the rice growers shows that rice husk have no commercial use; this research seeks to find an alternative solution to its indiscriminate disposal since its disposal posses a great threat to the environment and society at large, because it also releases pollutants which can cause respiratory problems to humans.

Objectives of the Study

The major purpose of this study was to access the effectiveness of rice husk as a resist agent for fabric decoration. Specifically, the study:

1. Access the fastness properties of fabrics dyed with rice husk resist agent.
2. Examine the acceptability of fabrics dyed with rice husk resist agent.

Research Questions

Two research questions were formulated to guide the study:

1. What is the effectiveness of fastness properties of fabrics dyed with Rice husk resist agent?
2. What is the acceptability level of fabrics dyed with rice husk resist agent?

Materials and Methods (Methodology)

***Design of the Study*:** Experimental research design using laboratory method was employed in this study.

***Materials*:** The following are the material and equipment that was used for this: Antisol 4 table spoon full, Rice husk 12 milk cups, Fabric to dye, Sodium hydrosulphite, sodium hydroxide, dye.

***Equipment*:** Participant observation, judges, camera, enamel and plastic bowls, line pegs soap, gray scale for assessing change in colour and staining. Rubber gloves, Stencil different motifs drawn on a hard cardboard paper, Plastic containers, Plastic buckets, measuring cups and spoons, stirring spoon or stick.

Procurement Method

The materials listed were brought from the open market. Rice husk: This was obtained from a milling factory. Carboxymethyl cellulose (CMC) or cellulose gum also known as antisol a whitish powdered environmental free chemical made of wood pulp and cotton linters and other sources. This was gotten from chemical shop at Sabo-Gari Market in Zaria, is available at almost all the chemical shop and at affordable price.

Fabric to dye: The fabrics were gotten from Kwori market in Kano. The researcher used observation method to identify cotton fabric (white brocade). This fabric was used to get better results since cold water dyeing method was used. Also vat dyes are used on cellulosic fibres and are very much available in different colours. Sodium hydrosulphite, sodium hydroxide: These are the dye fixer. Vat dyes of different colours, rubber gloves, plastic containers, plastic buckets, measuring cups and spoons, stirring spoon or stick, pencil, stencil. All these were gotten from chemical shop at Sabo-gari market in Zaria. Water (solvent) was fetched from college taps.

Preparation of the Materials

Conditioning of the Sample: The white cotton brocade fabric used for the experiment as well as the white cotton material for the composite were all desized by pre-washed and dried before the dyeing processes took place, this was to remove all the chemical treatment given to the fabrics in other to allow dyes to penetrate properly. They were then conditioned under standard condition of relative humidity of 65+26 and temperature of 20+ 2^0c for forty eight thousand prior to testing.

Procedure for making of the rice husk resist agent

Two and half (2.5) litres of water was measured into the bowl, 4 table spoon full of antisol was measured and poured gradually into the water stirring simultaneously. The antisol was allowed to soak in water for thirty (30) minutes to allow it swell, though stirred while still standing. 12 milk cups of rice husk was measured and added into the paste and stirred smoothly until a smooth paste was gotten.

Procedure for the application of the rice husk resist agents

Fabrics to dye: The researchers pre-washed and dried all fabrics before the commencement of the practical. When the fabrics was dried, they were spread out and a stencil was used (a hard card board paper with different motifs drawn and cut out) to obtain different patterns (Stencil techniques), the use of shapes of object to draw out different pattern is allowed. Broom was also used to splash the rice husk resist agents on the surfaces of another fabric (Splashing technique).The resist agent was applied with hand or spoon systematically at the places where the patterns are desired to appear and allowed to dry for minutes or hours depending on the intensity of the sun. When the rice husk is dry, the watery look of the resist agents on the surfaces of the fabrics turn to dry look showing clear brown colour of the rice husk and the areas where the resist agent was applied were bounded so well on the fabric making it impossible for fingers to peel of the resist agent from the surface of the fabrics.

Procedure for the preparation of the dye and the dyeing

Then after drying, the dye was prepared as follows: 4 tablespoons of Sodium hydrosulphite, 3 table spoons of sodium hydroxide, 4 table spoons of vat dye, 4 litres of water (cold water). All these measurement are poured in the plastic bowl and the measured cold water was added and stirred thoroughly. The fabric was dipped into each different colour of vat dyes bowls and allowed to stand for three to five minutes, depending on the intensity of the colour desired. They were turned so as to have even colours after dyeing. This measurement was used on each piece of fabric dyed since cold water dyeing was used.

Instrument for Data Collection: Gray scale for assessing change in colour and staining was used to access fastness properties and acceptability level. The response option was a modified Likert scale with assigned nominal values as follows:

No fading /staining	NFS	Very attractive	VA	5
Fade/stain/negligible	FSN	Attractive	A	4
Fade/stain slightly	FSS	Modestly Attractive	MA	3
Fade/stain considerably	FSC	Slightly Unattractive	SUA	2
Fade/stain heavily	FSH	Unattractive	UA	1

The dyed fabrics were assesses for colour fastness test, to washing, heat/ light, soap, rubbing (mechanical action) according to Nkonye (2009). Who states that the beauty of a fabric is of no use unless the colour is fast. This is to determine the wash fastness properties of the fabric dyed with rice husk resist agent on repeated washing. The test were carried out in a washing bowl using hand washing which enable time and temperature to be controlled during the process.

Procedure for the Assessment of Fastness properties

***Fastness to washing*:** Two specimen each of 5cm by 4cm dimension were cut from the three different rice husk resist dyed fabrics (a total of 6 specimens) three of the specimen were used as control and are not treated while the other three were washed in washing solution contain 5g of domestic soap per litre of water for five minutes. The fabrics were thoroughly rinsed and dried and the specimens were exposed to repeated washing of five times. The change in colour was assed using the gray scale by the judges.

***Fastness to Light*:** A piece of each specimens were expose to direct sunlight for a period of 5-6 hours for 5 days and they were compared with another pieces of the same sample dyed fabrics which were left under room temperature (ageing) for the period of 10 days by the judges the result were compared and recorded according to gray scale for fading.

***Fastness to perspiration*:** Test specimens were wetted with human perspiration at body temperature for two hours each of two consecutive days and then assessed for change in colour by the judges after comparing them with the untreated.

***Fastness to Rubbing*:** Tests specimens were rub on a piece of white fabrics specimen wrapped round the finger for five minutes and two consecutive period. The degree of staining of the white fabrics was assessed using gray scale for staining change.

***Fastness to Pressing*:** Test specimens of the dyed fabrics were dry pressed for 15 to 30 seconds for five consecutive times. They were then assessed with samples that were not pressed from the dyed fabrics and the degrees of change in colour were assessed by the judges.

Method of Data Collection

Acceptability/Sensory Evaluation

35 judges were selected for the assessment of change in colour using gray scale instrument for assessing change in colour and staining to assess the fastness properties of the rice husk resist dyed fabrics and level of acceptability using sensory evaluation. The researchers used two groups of samples, the experimental group (treated specimens) and the control group (untreated specimens). Three fabrics sample dyed with rice husk resist agent using different method of resist i.e splashing stamping and stencilling were evaluated for: fastness effect to washing, light, rubbing, pressing and perspiration.

35 copies of the score cards item questions were distributed to the judges to respond to, using sensory evaluation of sight perception using the five point gray scale for accessing change in colour and staining, and five point Licker scale for accessing level of acceptability.

***Data Analysis*:** Data collected were subjected to analysis to determine the mean score, which was used to determine the extent of the perception of the fastness properties, extent of resist and other factors used to access acceptability.

Mean of 3.0 was used for decision making.

Findings

$\bar{X}$

Table 1: Effectiveness of rice husk as resist agent for fabric decoration (fastness properties)

S/N	fastness Properties	DNF	FS	FM	FH	FVB	N	FX	$\bar{X}$	Decision
1.	Fastness to Washing	26	6	2	1	0	35	162	4.62	Effective
2.	Sun	22	11	2	0	0	35	160	4.57	Effective
3.	Rubbing	27	5	3	0	0	35	164	4.68	Effective
4.	Perspiration	25	6	4	0	0	35	616	4.6	Effective
5.	Pressing	28	5	2	0	0	35	166	4.74	Effective

Table 1 indicates the perception of the judges on the effectiveness of physical properties of fastness of the dyed fabrics to parameters 1 to 6 above using the subjective measures through the sense of sight and feel. Table 1 showed that item 1, 2, 3, 4 and 5 with mean value of 4.62, 4.57, 4.68, 4.6 and 4.72 were respectively effective. This implies that rice husk resist dyed fabric were fast to water, soap, sun, rubbing perspiration and pressing. This shows that the dye does not fade upon exposure to these fastness parameters even after repeated exposure.

Table 2: Acceptability of Fabrics dyed with rice husk resist agent (sensory evaluation)

S/N	Items	VA	A	MA	SUA	UA	N	FX	$\bar{X}$	Decision
1.	Extent of Resist effect	25	8	2	2	0	35	167	4.77	Accepted
2.	Crackle effect	7	6	8	10	2	35	105	3.0	Accepted
3.	Attractiveness	20	10	4	2	0	35	156	4.45	Accepted
4.	Sharpness/precision	12	10	2	4	2	35	116	3.31	Accepted
5.	Fastness to washing	24	5	4	2	0	35	156	4.45	Accepted
6.	Colour Intensity	15	10	7	3	0	35	142	4.06	Accepted
7.	Cost efficiency	13	8	6	6	2	35	129	3.69	Accepted

Table 2 shows the mean sensory evaluation to sight on the acceptability of rice husk resist dyed fabric. The table shows that item 1, 2, 3, 4, 5, 6, and 7 with mean values of 4.77, 3.0, 4.45, 3.31, 4.45, 4.06 and 3.69 were respectively accepted. This implies that fabric dyed with rice husk resist agent has a good resist effect, crackle effect, attractive, sharp, good colour fastness to washing, good colour intensity and cost efficiency.

Discussion of Findings

The findings also revealed that fabric dyed with rice husk resist agent has good fastness properties to water, soap, sun, rubbing perspiration and pressing. This indicates that fabric dyed with rice husk resist agent can resist fading even after several exposures to these fastness parameters. The findings of this study is consistent with the findings of the Nwosu (2017) who found out that rice husk could be used as resist agent for fabric decoration.

Fabric dyed with rice husk resist agent has an acceptable esthetic visual perception in the areas of effective resist, attractive crackle effect, attractive colour, sharp and precised design effect, good fastness properties to washing, attractive colour intensity and cost efficiency. All these acceptable positive item attributes indicates that fabric dyed with rice husk resist agent is highly acceptable.

Rice husk is available at low and no cost in almost all milling centres and the binding agent is equally available at most chemical shops. This makes the raw material easily available at all times, and invariably making the end product that is the fabrics produced from this raw material cheap and affordable for the end users.

Conclusion

Based on the findings of the study, it can be inferred that rice husk as a resist agent is effective and acceptable as a resist agent for fabric decoration, since rice is planted and processed in Nigeria, it makes the rice husk available at all times and all season. Also the production of the resist agent was simple, easy, less time consuming and cost efficient, and it gave room for the application of other techniques of resist dyeing such as splashing, stencil, stamping and sketching.

Recommendations

In view of the results of the study the following are recommended:

1. Home Economics, other textiles science departments or practitioners of textile design could use the result of the study as a resource material for

teaching their students creative skills in textile design.

2. Non-Governmental Organizations, skill acquisition centres both public and private sectors involved in skills training and youth empowerment can engage their trainees in the production of rice husk resist agent for sustainable decoration of fabrics. These could also be prepared and sold to the immediate consumers which invariably will serve as a means of income to them.
3. The textile industries and factories (big and small scale) could use the results of the study as resource material for fabric decoration.
4. The rice farmers and rice millers could use the result of the findings to generate income by producing rice husk resist agent and selling to the immediate consumers.

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JHER Vol. 26 No. 2 December 2019, pp. 40-48

Family Instability Issues in Pankshin Local Government Area of Plateau State, Nigeria

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Abstract

The purpose of this study was to investigate causes of family instability, challenges to family stability and strategies that could improve family stability in Pankshin Local Government Area of Plateau State, Nigeria. Three research questions were answered. Questionnaire was used for data collection. A random sample of 100 families was selected for the study. Data were analysed using mean and standard deviation. The results of the study show 14 causes of family instability including: polygamy, parent's literacy level, drug abuse and unemployment. There are 10 challenges and 12 strategies for improving family stability include: dealing with the root causes of the challenges, encourage good parent/child relationship, acquire useful skills to enhance economic wellbeing and consult religious leaders for counselling. The study recommended that family counsellors, government and other concerned agencies should regularly develop programmes aimed at sensitizing parents, children and family members and the society on how to reduce family instability issues.

Keywords: Family, Parents, Children, challenges, Instability, Stability.

Introduction

Traditionally, the family can be described as a group consisting of two parents and their children living together as a basic unit, rearing their children and interacting with one another. The family is the single most important influence in any child's life. From their first moments of life, children depend solely on parents and family to care, protect and provide for their needs. The family provides the individual with an identity, with a social status and with economic well-being. The other institutions have only slowly developed from the family and have for a long time been dependent on the family (United Nations, 2004; Anyakoha, 2015).

The society generally strives better when the family is steady. Family instability always occurs when there is mostly lack of understanding of values and when spouses do not perform their duties to the family adequately. Igbaji, (2018) and Ugau (2018) defined family instability as a situation where the family knows no peace, poor structure and organization, emotional separation of members and poor relationship with relations and in-laws. This is becoming more common in our contemporary family institutions.

The problem of family instability in Nigeria can be traced to challenges of rapid growth rate of urbanization and industrialization, social changes in growing economies and the involvement of women in the labor force. Family as an institution has many issues affecting it, including marriage age, spouses' educational level, religion and social status. Inadequate supervision arising from family instability seems to be associated with juvenile delinquency (Dada & Idowu, 2006). Child care which should be the responsibility of the parent is now shifted to schools, house helps, grandparents other relations and friends (Fafanchamps & Quisumbing, 2008; Jutting & Morrisson, 2005). Couples hardly find time to stay together for interaction purposes. This continually pull-away the family members apart and gradually affect the stability of the family which may likely result into alcoholism, drug abuse, extra-marital affairs and lack of trust in many families among the couples (Benschop, 2006; Women and Law in Southern Africa Research and Educational Trust 2000; Ugau, 2018). Amadi and Amadi (2014) further enumerated some causes of family instability to include social incompatibility, sexual incompatibility and lack of mutual respect, extended family issues and poor communication. Many factors are responsible for this mind bugging issues in both developed and developing countries.

Factors that are affecting the quality of marriage in our modern society has been a recent discussion among many professionals like: religious authorities, behavioral scientists, sociologists, clinical and social psychologists, home economists and anthropologists (Aiyetan & Kalopo, 2011; Animasahun, 2011). Other factors such as education, illegitimate children, religion and infertility of the wife also initiate instability in the family. Children of separated parents frequently bear the consequences of family instability. The tension and hostility of unsolved conflict between parents often gets back to the child. There are so many boys and girls and even adults roaming about the streets, many are delinquents, vandals and touts while some are mentally disturbed because of family instability (Fafchamps & Quisumbing, 2008; Igbaji, 2018). Furthermore, those children in single-parent families tend to receive lower levels of supervision.

Statistical data by the United States Census Bureau (2008 to 2018) showed that from 1960 to 2018, the proportion of children living with two married parents fell from 87.7 percent to 65 percent. This means that more parents are choosing to live alone (separated or divorced) rather than remain in an unstable marriage relationship. The analysis of data of a National Longitudinal Survey was carried out by Bloome (2017), for Youth with a national sample of 14- to 22-year-olds followed through adulthood. She grouped the participants by childhood family structure and examined their household income level in childhood and at ages 30 to 50. Her analysis of the data showed that people raised outside two-parent families were more likely to end up in the lowest-fifth of income earners. Specifically, her analysis showed that about 28 percent of children raised outside of two-parent families ended up in the lowest fifth of the income distribution as adults, compared with almost 17 percent of those from stable two-parent families. According to her report, people who grew up in unstable families are less likely to have stable adult marriages, which may contribute to their downward economic mobility. All these pose treats, which are also challenges to family stability.

The challenges of family stability are on the increase in Nigeria, and specifically, Pankshin Local Government Area (LGA) in recent times, Some studies in different parts of the country (Dada & Idowu, 2006; Keswet &Dapas, 2010; Igbaji, 2018; Mathias, 2018), are evidences showing some of the challenges which include: Single parenting, Maternal and family insecurity and Children Inheritance Right. All of these and more are posing challenges to parents, schools, non-governmental organizations (NGOs), Government and the country as a whole. This phenomenon has resulted into various social problems as a result of unchecked effects by the government and individuals themselves. The discovery of the root causes and challenges of these instabilities can go a long way to the establishment of more stable homes in both developed and developing nations of the world. Hence, this study investigated family instability issues in Pankshin LGA of Plateau State in order to expose its causes and challenges to the family.

Purpose of the study

The purpose of the study was to investigate family instability issues in Pankshin Local Government Area of Plateau State, Nigeria. Specifically, the study determined:

1. causes of family instability in Pankshin Local Government Area.
2. challenges to family stability in the area.
3. strategies for improving family stability in the area.

Methodology

***Research Design*:** Descriptive survey design was employed to seek the opinion of the respondents on family instability issues in Pankshin LGA.

***Area of Study*:** The area of study is Pankshin LGA of Plateau State. The LGA is bound to Mangu, Shendam and Kanke LGAs of Plateau State. The dwellers are pre-dominantly farmers, traders and civil servants. Pankshin LGA is rocky in nature and the weather condition is usually cold. Some of the major tribes present include: the Ngas, Mupun, Mhiship, and Tal.

***Population for the Study*:** The population consisted of one hundred and ninety one thousand, six hundred and eighty five persons in Pankshin LGA of Plateau State according to the data of the National Bureau of Statistics (2008). The population were made up of all members of the family (General), which included: parents and their children, both male and female in the LGA.

***Sample for the Study*:** A total of One hundred respondents were sampled from the population of study. These sample was made up of family members comprising fathers, mothers and children.

***Sampling Techniques*:** A simple random sampling technique was used to select the one hundred respondents. Respondents sampled were: 30 fathers, 30 mothers and 40 children. The 40 children used for the study ranged from ages 9 to 17 years, making a total of one hundred participants for the study.

***Instrument for Data collection*:** A four-point scale Structured questionnaire called "Family Instability Issues Questionnaire (FIIQ), was constructed by the researchers for data collection, the instrument was made up of four sections which are sections A, personal data of the respondents, section B, on the causes of family instability and section C, on challenges of family instability and D, some strategies for improving family stability in Pankshin Local Government Area of Plateau State. The instrument was validated by three experts. Validity and a reliability co-efficient of 0.96 was obtained based on the experts' ratings of the questionnaire items and this was adjudged to be reliable.

***Data Analysis Techniques*:** Face to face method was adopted in administering the questionnaire to the respondents. The questionnaires were distributed to the hundred participants by the researchers, which were later collated for data analysis. The data were analyzed using mean and standard deviation. A mean rating of 2.00 and above for any item was considered to be "agreed upon" while below 2.00 were "disagreed upon" as decision rule.

Results

The results obtained from the study were presented as follows:

Causes of Family Instability

Table 1: Mean Responses on Causes of Family Instability Issues in Pankshin LGA

S/No.	Causes of family instability	Mean ± SD	Decision
1	Infidelity is a cause of family instability.	2.62 ± 1.13	Agree
2	Incarceration can cause family instability.	2.56 ± 0.76	"
3	Polygamy is a cause of family instability.	2.67 ± 0.82	"
4	Poor family socio-economic status is a cause of family instability.	2.84 ± 0.76	"
5	Parents' divorce/separation is a cause of family instability	2.62 ± 0.81	"
6	Communal Crises is a cause of family instability.	2.72 ± 0.88	"
7	Father's inability to assume his responsibility does not cause family instability.	1.45 ± 0.85	Disagree
8	Physical abuse of wife/children is not a cause of family instability.	1.41 ± 0.73	Disagree
9	Sexual abuse causes family instability.	2.45 ± 0.76	Agree
10	Unemployment of a parent is a cause of family instability	3.17 ± 1.11	"
11	Medical situation can cause family instability.	2.57 ± 0.76	"
12	Drug abuse by parents causes family instability	2.52 0.73	"
13	Unexpected pregnancy is a cause of family instability.	3.25 ± 0.90	"
14	Child adoption is not a cause of family instability.	2.46 ± 0.73	"

Source: Field data 2018.

Table 1 shows the various causes of family instability in Pankshin LGA. The respondents agreed twelve out of the fourteen items listed as causes of family instability with the highest Mean and Standard Deviation scores of 3.17 ± 1.11 and the lowest scores of 2.52 ± 0.73 respectively. They however disagreed on two of the items which are: father's inability to assume his responsibility does not cause family instability and that children adoption does not cause family instability with mean scores of 1.45 ± 0.85 and 1.41 ± 0.73 respectively.

Challenges of Family Instability

Table 2: Mean Responses on Challenges to Family Stability in Pankshin LGA

S/No.	Challenges to family instability	Mean ± SD	Decision point
1	Illiteracy of a parent	3.25 ± 0.90	Agreed
2	Inability to pay children's medical bills	2.61 ± 0.91	Agreed
3	Children's lack of good/acceptable morals not a challenge	1.46 ± 0.67	Disagreed
4	Differences in parent's religious believes is not a challenge to family stability	1.25 ± 0.86	Agreed
5	Inability to educate children is a challenge to family stability.	2.69 ± 0.88	Agreed
6	Inferiority complex of a parent is not a challenge to family stability	1.73 ± 0.81	Disagreed
7	Anti-Social behavior of a parent is a challenge to family stability	2.75 ± 0.96	Agreed
8	Insecurity is a challenge to family stability	2.57 ± 0.76	Agreed
9	Intertribal marriage is a challenge to family stability	3.25 ± 0.67	Agreed
10	Children will be divided over religious issues, hence, family instability.		
11	Pressure at work/school is a challenge to family stability.	3.57 ± 0.67	Agreed

Source: Field data 2018.

Table 2 reveals the respondents' responses on challenges of family instability in Pankshin LGA. Eleven items were listed as possible challenges to family stability with the lowest mean and standard deviation scores of 1.25 ± 0.86 respectively and highest mean and standard deviation scores of 3.57 ± 0.67. Three items were however agreed upon which are: "teaching children good/acceptable morals is not a challenge to family stability", "Differences in parent's religious believes is not a challenge to family stability" and, "Inferiority complex of a parent is not a challenge to family stability", with highest mean and standard deviation scores of 1.73 ± 0.81 and a lowest score of 1.25 ± 0.86 respectively. This however implies that all the items listed on the table were generally challenges to family stability in the area of study.

Strategies for Improving Family Stability

Table 3: Mean Responses on Strategies for Improving Family Stability in Pankshin LGA

S/No.	Strategies for Improving Family Stability	Mean ± SD
1	Deal with the root causes of the challenge through family discussions.	3.15 ± 1.09
2	Regular community forum to resolve crisis.	2.93 ± 0.80
3	Encourage good parent/child relationships.	2.63 ± 0.81
4	Sensitization programs on media.	3.00 ± 1.10
5	Governmental intervention in resolving communal issues	2.71 ± 0.87
6	Avoid the blame game and unnecessary arguments	2.81 ± 0.83
7	Choose peace and be patient, no matter what happens	2.71 ± 0.90
8	Learn to always say sorry politely, when you are wrong.	2.93 ± 0.86
9	Acquire useful skills to enhance economic wellbeing.	2.63 ± 0.82
10	Consult religious leaders for spiritual cancelling.	2.64 ± 0.94
11	Involve professional Counselors and attend counselling session, where the issues become difficult to handle.	2.93 ± 0.80
12	Keep praying until you see complete peace on both sides.	3.15 ± 1.08

Source: Field data 2018.

Table 3 shows the responses of the respondents on the strategies for improving family stability in Pankshin LGA. All the items listed were agreed upon with a highest mean and Standard Deviation scores of 3.15 ± 1.09 and a lowest mean and Standard Deviation scores of 2.63 ± 0.82. The results of the table shows that strategies such as: dealing with the root causes of the family instability through discussions, regular community forum to resolve crisis and encouraging good parent/child relationships were important strategies in resolving family instability problems. This implies that when these strategies are used appropriately, families will experience stability in marriage and in their homes.

Discussion

The research question one established various causes of family instability in Pankshin LGA of Plateau State. Some of them include: infidelity, incarceration, polygamy and poor socio-economic status of the family. The findings of this study are in agreement with those which Amadi & amadi (2014) and Igbaji (2018), enumerated in their studies as causes of family instability in Nigeria. Other causes according to Animasahun, & Fatile, (2011), include: poverty level of the family, dishonesty, lack of mutual respect for each other and negligent behavior of spouses. These could be reduced if couples, children and other family members can communicate their grievances to each other during counselling sessions as well as learning to forgive, forget and forge ahead with their family responsibilities.

Research question two identified the challenges to family stability in pankshin LGA some of which included issues of illiteracy, socialization, payment of children's fees and health conditions of the family members, among others. These findings are also supported by the studies of some researchers (Bennett, 2004;Keswet & Dapas; Amadi & Amadi, 2014), where they mentioned challenges such as drug abuse, negligence, loss of employment and juvenile delinquencies as challenges to family stability in Nigeria. In like manner, some other researchers (Smith & Moore, 2006; Varley, 2007; Mathias, 2018), indicated other factors such as poor nutrition, poverty, divorce, health status of the family, inter-tribal marriages, education and alcoholism as challenges which could be remedied by literacy of parents and change in economic status of especially women. In another study, Aiyetan & Kalopo (2005), reported intertribal marriage as one of the challenges to marriage stability, but in the present study, it was not seen as a challenge. Also, experiences of happenings in families and some communities have led and are still leading many children and even adults to commit suicide as a result of frustrations due to the challenges they are faced with. The outcomes of these and other researches can help families and the society at large to manage some of these challenges positively and to avoid serious family crisis.

Research question three shows some of the strategies that were identified to improve family stability in Pankshin LGA. Some of them include: dealing with the root causes of family instability through family discussions, community workshops and seminars, as well as sensitization programmes on the media. This strategies are also in line with the works of other researchers like (Dada, & Idowu, 2006; Ugau, 2018; Mathias, 2018), who suggested that parents should always discuss issues of concern with their children, so as to help them reduce the reactions that may occur later, especially when parents are contemplating divorce and remarriage, among others. Family counselling was also encouraged, especially where grown-up children are involved. This should help the family to reconcile or face challenges without much guilt, which will in turn help each family member to deal positively with their frustrations and forge ahead with other issues of life. Parents should among other things, learn to understand with each other and with their children on personal issues that concern them, especially where children are grown ups.

Conclusion

In conclusion, causes of family instability are numerous and are aggravated by social and economic hardships faced by individuals, the family and the society at large. These hardships further lead to dishonesty and breakdown in communication among family members, which affects the society at large. The way forward is to improve the literacy level of the spouses in the study areas and furthermore, improve their economic status for more meaningful living.

Recommendations

Based on the finding of this research and conclusion, the following recommendations were made:

- Awareness campaigns on causes and challenges of Family Instability should be made and proper advertisement channels should be created for wide publicity.
- More funds should be made available by the government to provide quality educational institutions, facilities and training programs in order to increase the people's knowledge and reduce the level of their illiteracy.
- Government, religious bodies and NGOs concerned about family life

should encourage mutual understanding among the spouses by offering quality Counseling services

- The economic life of the people should be of concern to government and it should be improved upon to curb social vices and other juvenile acts.

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Strategies for Enhancing Environmental Awareness through Home Economics Education Program at Junior Secondary School Level in Lagos State

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Abstract

The study examined the strategies for enhancing environmental awareness through Home Economics Education at Junior Secondary School (JSS) level in Lagos State. The design used for the study was a descriptive survey design. The population of the study was 470 and the sample size was 250. Purposive sampling technique was adopted. Structured Questionnaires were the instrument for data collection. Data collected was analyzed using mean. Findings revealed physical components of the environment, environmental resources, environmental management are some of the environmental awareness concepts that can be taught in Home Economics, teaching environmental awareness in all areas of Home Economics, including the concept of environmental awareness in Home Economics textbooks and excursion to dumpsite, gas – flaring plant market, rigid nature of curriculum review and update, not promoting jingles on radio and television concerning the importance of safe environment and regular curriculum review, curriculum flexibility and active involvement of important stake holders in curriculum review are ways of removing challenges to environmental awareness at Junior Secondary School Level.

Keywords: Awareness, Strategies, Environmental, Home Economics, Education.

Introduction

Lagos is one of the fastest growing cities in the world and it has witnessed rapid population explosion and its consequences (Seriki-Mosadolohun, Abiamuwe, Ogbonna and Otobo, 2017). Its recent pattern of development and human activities has led to environmental degradation. Seriki-Mosadolohun *et al,* 2017) observed that urban growth and land conversion involving human activities are major threats to the ecosystem. Lagos state with it unimaginable excellence has become popularly known for its congestions and environmental issues resulting from climate change (Alagbe, 2005). Environmental literally means surrounding and everything that affects an organism during its lifetime is collectively known as its environment. In other words, environment is the sum total of water, air and land interrelationships among themselves and also with the human being, other living organisms and property.

According to Tansley (2005), an environment is a synonym of ecosystem described as the ecological unit consisting of biotic factors (living) and abiotic factors (non - living) in a specific area. Environmental components are physical elements such as space, landforms, water bodies, climate soils, rocks and minerals. They determine the variable character of the human habitat, its opportunities as well as limitations. Biological elements are elements such as plants, animals, micro-organisms and men constitute the biosphere and cultural elements are made up of elements such as economic, social and political, both physical and biological includes living and non-living component.

The Physical environment is classified into three broad categories viz., solid, liquid and gas. They represent the following spheres: the lithosphere (solid earth) the hydrosphere (water component) and the atmosphere. The biological environment consists of: plants (Flora) animals (Fauna). All the organisms work to form their social groups and organizations at several levels. In the social environment the organisms work to derive matter from the physical environment for their sustenance and development. (Smith, 2010) Environmental awareness is to understand the fragility of our environment and the importance of its protection. Promoting environmental awareness is an easy way to become an environmental steward and participate in creating a brighter future for our children and the society at large. Environmental awareness is an integral part of the movement's success. By teaching our friends and family that the physical environment is fragile and indispensable we can begin fixing the problems that threaten it. Numerous resources are available to promote environmental awareness; group learning in or outside of class, informational and inspirational seminars, television, radio jingles among others are some of the ways of promoting environmental awareness.

Environmental challenges may be broadly grouped into major and minor types depending upon their potential to cause damage to human life and property (Joseph, 2009). Also, environmental challenges are classified under the broad titles of natural and artificial, based mainly on their mode of occurrence. Natural events occur suddenly and swiftly and consequently cause severe damage to the society and surrounding (Santra, 2011). Artificial challenges are influenced or induced by man and they have some elements of human error, negligence and or intent. Nigeria is not left out in the spatio-temporal distribution of environmental challenges. Nevertheless, in term of frequency, anthropogenic challenges are more prevalent in the country. Environmental and climate change impacts disaster such as the features of drought, desert encroachment, epidermis, floods and ocean surge have been on the rise in Nigeria in recent times.

However, notable consequences of environmental challenges include loss of lives, loss of properties, loss of genetic resources, environmental degradation, loss of habitats, climate change and global warming, biodiversity loss, as well as epidemiological threat. In Lagos State, there are natural and anthropogenic calamities of different types, magnitudes and frequencies, hence, the focus of much attention on environmental awareness. Kimani, (2007).

The most common environmental problems in Lagos State are anthropogenic in nature. They result from human interference (interaction) with the environment. They occur as a result of human intent, negligence, error or failure of human-made system. Anthropogenic hazards can be broadly classified under the titles of sociological, technical, transportation and others and they mainly occur in such arears as Makoko, Ilaje, Amukoko, Mosafejo, Orile, Ajegunle, Ijora-Badia, Okokomaiko, Ajamgbadi, Munshin and Maroko towards Ajah environs. Lack of good drainage system, irregular dredging of canals, lack of proper town planning as well as building of houses on canals in these areas calls for concern as it contributes majorly to flooding issues in Lagos State (Seriki-Mosadolohun *et al*, 2017).

Human activities in Nigeria have also resulted into environmental challenges like biodiversity loss, oil spillage, bush burning, urban housing problem, water scarcity, as well as pollution (water, soil, air, marine, noise, thermal, radioactive and vehicular). Broader worries have also arisen about the environmental challenges of deforestation, urban flooding, destruction of aquatic habitats, over-exploitation of forest resources, illegal mining activities and dereliction, road transportation mishaps as well as solid waste problems (municipal, agricultural, industrial, hazardous radioactive and biomedical). Other forms of environmental degradation are desert encroachment, ozone layer depletion, global warming, poor environmental sanitation, unlawful exploitation of fossil fuel resources, oil spillage, gas flaring and many other challenges relating to oil exploration and production (Seriki-Mosadolohun *et al,* 2017).

Use of reusable bags such as plastic grocery-type bags that gets thrown and ends up in landfills or in other parts of the environment is dangerous. These can suffocate animals who get stuck in them or may mistake them for food (Mintzberg, 2011). Also, it takes a while for the bags to decompose. The use of reusable bags cuts down on litter and prevents animals from getting a hold of them. Printing as little papers as necessary and avoiding having a copy of every single reading material which is detrimental to the environment will help to prevent environmental pollution. Use of laptop or e-reading in class and downloading reading materials will help to reduce the amount of paper used as well. Recycling of waste instead of throwing recyclables in the trash with non-recyclables will also help to maintain a hazard free environment. Use of energy-efficient light bulbs instead of regular bulbs. They last longer and saves money and also helps to lower the temperature of the atmosphere. Limiting water usage and proper channeling of waste water will help to prevent water pollution. Strategy on the other hand is a plan of action designed to achieve a long term or overall aim. Strategy is also a system of finding, formulating, and developing a doctrine that will ensure long term success if followed faithfully or an unfolding internal and external aspects of an organization that results in actions in a socio-economic context. A strategy describes how the ends will be achieved by the means (Mintzberg, 2011).

Major solutions to the environmental challenges in Nigeria are environmental education which has to be embedded into Home Economics curricula and must be aggressively taught by Home Economics teachers at all levels, governance of nature by individuals, formulation and implementation of stronger laws or and penalties for those who violate the law as well as the use of environmentally sound technology for the monitoring of the environment (Santos, 2009).

Environmental awareness therefore encompasses knowledge of contemporary issues affecting nature locally and beyond (Boucher, 2015). Rising environmental awareness involves translating the technical language of a natural science or related field into terms and ideas that a non - scientist can readily understand. Effective environmental education programs and materials needs to present information and ideas in a way that is relevant to the people (Schmidt, 2009). The importance of the environment cannot be overemphasized because it plays a very vital role in the healthy living of human beings, environment is the only home that humans have, and it provides air, food, and other needs. Humanity's entire life support system depends on the well-being of all the environmental factors. Therefore, environment is essential in regulating air and climate, it is also important because it is a source of natural beauty, and is necessary for proper physical and mental health too. Environment is only the sole factor for existence of life on this earth. The only planet in our solar system that supports for existence of life (Cristina, 2017).

The central focus of Home Economics (HE) is the well-being of individuals and families in their everyday living. Home Economics education adopts an action-oriented approach in enabling individuals to actively meet ever-changing and ever-challenging environments. The vision of Home Economics is to create and sustain healthier citizens by enabling them to become health literate. The healthy lifestyle theme embraced in Home Economics provides a consolidated approach to education and aims to enable humans develop the knowledge, skills and competences to take responsibility for their actions to make informed choices while considering the impact of those actions for themselves, the well-being of other people, and society at large (NCF, 2014).

Environmental education should lead to gathering mass awareness which should bring environmentally wiser policies (Schmidt, 2009). Consequently, to preserve and conserve the environment and for people to live a quality life, special attention needs to be given to environmental issues and awareness needs to be created in Lagos state to prevent the consequences of environmental degradation. It is against this background that this study focused on strategies for enhancing environmental awareness through Home Economics education at junior secondary school level in Lagos State.

Purpose of the Study

The main purpose of this study was to examine the strategies for enhancing environmental awareness through Home Economics Education Programme at junior secondary school level. Specifically, the study:

1. identified environmental awareness concept that could be taught at the JSS Home Economics Programs
2. determined ways of teaching environmental awareness concepts at JSS Home Economics Programs
3. determined challenges to enhancing environmental awareness at JSS Home Economics programs
4. determined ways of removing challenges to enhancing environmental awareness at JSS Home Economics Programs

Methodology

***Research Design*:** The study adopted a descriptive survey design.

***Area of the Study*:** The study was carried out in Lagos State, South West Nigeria. Lagos state was chosen because of its high level of congestion which contributes to anthropogenic challenges in the city due to increased human activities as well as lots of environmental hazards caused by emissions from industries and flooding caused by excessive rainfall and lack of proper drainage system of which the inhabitants need to be aware of so as to be able to guide against environmental hazards.

***Population for the Study*:** The population for this study was four hundred and seven (470). This comprises of Forty (100) Junior Secondary School Students of Home Economics from Ijero Girls Junior Secondary School, (70) Mary-wood Secondary School and (80) Glory Point College Ebute-Metta all of 2015/2016-2018/19, (50) Students of School of Health Yaba, (Source: School of Health Admission Office) One hundred and forty (140) Senior Staff of Lagos State Ministry of Environment (Source: Lagos State Ministry of Environment).Thirty (30) registered Landlords of Lagos Mainland Local Government Area (source Lagos Mainland registered Landlord Association).

***Sample and sampling Technique*:** Sample for this study was two hundred and fifty (250). Junior Secondary School Students of Home Economics from Ijero Girls Junior Secondary School, Mary-wood Secondary School Glory Point College Ebute-Metta, Students of School of Health Yaba, Senior Staff of Lagos State Ministry of Environment, Landlords of Lagos Island Local Government Area were purposively chosen because of their small size. Anaekwe (2007) stated that purposeful sampling ensures that only elements that meets the desired purpose or possess the attributes desired are selected. These consist of twenty (90) Home Economics Students in total, (60) Students of School of Health, (75) Senior Staff of Lagos State Ministry of Environment and *(25) members of Lagos Mainland Landlord Association.*

***Instrument for Data Collection*:** Questionnaire was the instrument for data collection. Two structured questionnaires developed by the researcher were used for data collection. The first questionnaires developed were developed for junior secondary students of Home Economics, students of school of health and Landlord Association while the second questionnaire was developed for Lagos

State ministry of Environment. This was meant to generate responses on environmental issues, perception of human life, ways in which environment can be abused and ways of protecting the environment. Each questionnaire consists of two sections. Section A sought for demographic characteristics of the respondents while section B generated items based on the purposes of the study and research questions. Section B also contains Likert scale rated items as follows: Strongly Agree (SA) =4, Agree (A) =3, Disagree (D) = 2 Strongly Disagree (SD) =1.

***Method of Data Collection*:** Data for the study was collected by the researcher with the aid of two research assistants. These assistants were trained and orientated on the purpose and nature of the study, how to distribute, collect and handle the retrieved copes of the questionnaire. This was necessary because where it will not be possible to collect the completed questionnaire on the spot; the research assistants will help the researcher in retrieving them on agreed later dates. The research assistants would also help in interpreting the questionnaire to the respondents that are illiterates. The research assistants, being indigenes will help to reassure the respondents that their responses would not be used against them rather that their responses would facilitate research on environmental awareness.

***Method of Data Analysis*:** Data collected were analyzed using mean. For the decision rule, the real limits of the numbers of the respondents' made was used to categorize the mean ratings of the respondents. Mean ratings from 2.50 and above were considered as "agreed upon" while items with mean ratings of 2.49 and below were considered as disagreed upon.

Results

Findings of the study

Table 1: Mean Responses on Environmental Awareness Concepts that should be taught in JSS Home Economics Programs

S/N	Environmental Awareness Concepts	Mean	Remarks
1	Physical Components of the environment	3.0	Agreed
2	Environmental Resources	2.5	Agreed
3	Importance of the environment	3.5	Agreed
4	Importance of proper environmental management	4.0	Agreed
5	Ways the environment can be abused	3.5	Agreed
6	Environmental pollution	3.4	Agreed
7	Waste generation and management	4.0	Agreed
8	Waste reduction and recycling	4.5	Agreed

Table 1 shows all the eight environmental awareness components, each has a mean score of 2.50 ($\overline{X}=\geq 2.50$). Therefore, each concept should be taught in JSS Home Economics Progams.

Table 2: Mean Responses on the Ways of Teaching Environmental Awareness Concepts

S/N	Ways of Teaching Environmental Awareness	Mean	Remarks
1	Teaching environmental awareness in all areas of Home Economics, such as Food & Nutrition, Clothing and textile, Home child development	3.2	Agreed
2	Including the concepts of environmental awareness in Home Economics textbooks	2.0	Disagreed
3	Excursion to sites of environmental degradation such as, dumpsite, gas – flaring plant market and other forms of pollution sites	3.2	Agreed
4	Going on field work to erosion sites	3.7	Agreed
5	Use of resource persons	3.0	Agreed

Table 2 shows three ways environmental awareness could be taught in JSS Home Economics Programs. The three concepts, each as a mean of ≥3.00.

Table 3. Mean responses on the Challenges to Enhancing Environmental Awareness Concepts at JSS Home Economics programs

S/N	Challenges to Enhancing Environmental Awareness	Mean	Remarks
1	Rigid nature of curriculum review and update	3.5	Agreed
2	Environmental Awareness concept not contained in the curriculum	3.4	Agreed
3	Lack of compliance on environmental protection by the general populace	3.3	Agreed
4	Lack of encouragement on proper waste disposal at home **and schools**	3.0	Agreed
5	Not promoting jingles on radio and television concerning the importance of safe environment	3.7	Agreed
6	Not promoting workshops and seminars on the need to keep our environment safe	4.0	Agreed
7	Lack of excursions to dumpsites by schools	2.4	Disagreed
8.	Lack of provision of projectors in schools to promote and make environmental awareness class interesting	4.0	Agreed
9	Religious bodies not participating in campaign for safe environment	2.5	Agreed
10	Lack of adequate use of radio jingles as a source of promoting environmental awareness campaign	2.4	Disagreed

Table 3 reveals that eight of the items therein have each a mean of 2.5 and above $(\overline{X} \geq 2.5)$. This shows that there are eight challenges to enhancing environmental awareness at the JSS level within Home Economics Programs in the area of the study.

Table 4: Mean Responses on Ways of Removing Challenges to Teaching Environmental Awareness at JSS Home Economics Programs

S/N	Ways of removing challenges to environmental Awareness	Mean	Remarks
1	Regular curriculum review	3.0	Agreed
2	Curriculum flexibility and active involvement of important stake holders in curriculum review	3.4	Agreed
3.	Use of related examples and teaching methods to emphasize Environmental awareness	2.5	Agreed
4	Provision of adequate drainage systems by the government	3.0	Agreed
5	Adequate enforcement of environmental laws	3.2	Agreed
6	Sanctioning and punishing of offenders of environmental laws	2.7	Agreed
7	Collaboration between agencies in the society	3.0	Agreed

Table 4 shows that all the seven items in the Table obtained means of 2.5 and above ($\overline{X} \geq 2.5$). This shows that each of the seven items is a way of removing the challenges to teaching environmental awareness concepts with the Home Economics Programs in JSS.

Discussion of Findings

Findings revealed that the respondents agreed that the respondent agreed that the physical components of the environment, environmental resources, importance of the environment, importance of proper environmental management, ways the environment can be abused, environmental pollution and waste reduction and recycling are some of the environmental awareness concept that can be taught in Home Economics at Junior Secondary School Level. This corroborates with the assertions of (Boucher,2015) which affirms that environmental awareness encompasses knowledge of contemporary issues affecting nature locally and beyond and rising environmental awareness involves translating the technical language of a natural science or related field into terms and ideas that a non - scientist can readily understand and the assertion of (Schmidt, 2009) who asserted that effective environmental education programs and materials needs to present information and ideas in a way that is relevant to the people.

The respondents affirmed that teaching environmental awareness in all areas such as food and nutrition, clothing and textile, home management, child development, and so on, including the concept of environmental awareness in Home Economics textbooks, excursion to dumpsites, gas-flaring plants, markets and other forms of pollution sites, fieldwork to erosion sites and use of resource persons are some of the ways of teaching environmental awareness. This is in line with the opinion of (Smith, 2010) who asserted that environmental awareness is to understand the fragility of our environment and the importance of its protection and that promoting environmental awareness is an easy way to become an environmental steward and participate in creating a brighter future for our children and the society at large. Also by, teaching our friends and family that the physical environment is fragile and indispensable we can begin fixing the problems that threaten it.

Findings also revealed that the rigid nature of curriculum review and update, environmental awareness concept not contained in the curriculum, lack of compliance on environmental protection by the general populace, lack of encouragement on proper waste disposal at home and schools, not promoting jingles on radio and television concerning the importance of safe environment, not promoting workshops and seminars on the need to keep our environment safe, lack of provision of projectors in schools to promote and make environmental awareness class interesting and religious bodies not participating in campaign for safe environment are some of the challenges to enhancing environmental awareness at Junior Secondary School Home Economics programs while lack of adequate use of radio jingles as a source of promoting environmental awareness campaign and newspapers not adequately used for promoting environmental awareness were disagreed upon by respondents as challenges to enhancing environmental awareness at Junior Secondary School Home Economics programs. This agrees with the work of Schmidt, 2009, who reported that environmental education should lead to gathering mass awareness which should bring environmentally wiser policies and consequently, to preserve and conserve the environment and for people to live a quality life, special attention needs to be given to environmental issues and awareness needs to be created in Lagos state to prevent the consequences of environmental degradation. NCF, 2014, also mentioned that the central focus of Home Economics (HE) is the well-being of individuals and families in their everyday living. Home Economics education adopts an action-oriented approach in enabling individuals to actively meet ever-changing and ever-challenging environments. This also corroborates with Miller and Spolman (2009) that population growth, wasteful and unsustainable resource use, poverty, as well as insufficient knowledge of how nature works as the major causes of environmental problems.

Results of the findings on table 4 revealed that all the listed items were agreed upon as some of the ways of removing challenges to enhancing environmental awareness at Junior Secondary School Home Economics Programs. This corroborates with the work of Santos, 2009, who reported that major solutions to the environmental challenges in Nigeria are environmental education which has to be embedded into Home Economics curricula and must be aggressively taught by Home Economics teachers at all levels, governance of nature by individuals, formulation and implementation of stronger laws or and penalties for those who violate the law as well as the use of environmentally sound technology for the monitoring of the environment as some of the ways of removing challenges to environmental.

Conclusion

This study examined strategies for enhancing environmental awareness through home economics education at junior secondary school level in Lagos state. Findings revealed that physical components of the environment, environmental resources, environmental management, importance of the environment and importance of proper environmental management, ways in which the environment can be abused and so on are some of concept that can be taught in Home Economics at Junior Secondary School Level.

Also, teaching environmental awareness in all areas of Home Economics, such as food and nutrition, clothing and textile, Home management, child development and so on, Including the concept of environmental awareness in Home Economics textbooks and excursion to dumpsite, gas – flaring plant market and other forms of pollution sites are ways some of the way of teaching environmental awareness.

Findings also revealed that the rigid nature of curriculum review and update, not promoting jingles on radio and television concerning the importance of safe environment, not promoting workshops and seminars on the need to keep our environment safe, lack of excursions to dumpsites by schools and so on are ways of teaching environmental awareness and finally regular curriculum review, curriculum flexibility and active involvement of important stake holders in curriculum review, use of related examples and teaching methods to emphasize environmental awareness, and so on are some ways of removing challenges to environmental awareness at Junior Secondary School Home Economics Programs.

Recommendations

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

1. Home Economics Students and curriculum planners should research more on measures to put in place in other to achieve environmental sustainability.
2. Awareness should be created on the need for Home Economics Education at all level.
3. There is need to train and re-train teacher on the current environmental challenges, since the knowledge of Home Economics strengthens an individual's ability to become an advocates of good health.
4. Curriculum reform and judicious implementation is very necessary especially at all levels of education.
5. Ecological funds should also be judiciously allocated to equate with environmental challenges.

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Influence of Nominal Birth Order Positions on Academic Performance and Personality among Junior Secondary School Students in Akwanga, Nasarawa State, Nigeria

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Abstract

This study investigated the influence of birth order on the personality traits and academic performance among 207 junior secondary school students in Akwanga, Nasarawa State. Sixty-three first-borns, 50 middle-born children, 41 last-borns, and 53 only children, who shared the mean age of 12.4years (SD = 4.9), were purposively selected for this study. Students Class Average (SCA) scores were recorded and the big-five personality traits of the students were assessed with ten item personality inventory (TIPI). Results indicate that participants of different birth order positions differ significantly in terms of the big-five personality but did not differ significantly in terms of academic performance ($p = 0.56$). Also, the dominant personality (dimensions) is conscientiousness attributed to the first-born child ($P = 0.003$). Moreover, first-born child and last-born child had lower agreeableness compared to only-child ($P = 0.002$) and the middle-born child has higher openness to experience compared to other birth order positions ($P < 0.001$). It is therefore concluded that the different personality traits encounter among siblings is the result of birth order position

Keywords- Birth, Order, Personality, Academic, Achievement.

Introduction

People are intrigued by the fact that children of a family behave differently although they were raised in the same environment, such as neighbourhood, and share the same genetic pools from both of their parents. On top of behaviours, siblings do differ in terms of personality characteristics (Majed & Fatimma, 2016), intelligence (Hotz & Pantano, 2015), familial sentiment (Salmon, & Hehman, 2014) and others. First-borns are always described as being responsible, high achievers and perfectionists whereas last-borns and only child are always described as the baby of the house and are mostly spoiled kids (Rohrer, Schmukle & Egloff, 2015). As a result, these differences among siblings have attracted the attention of researchers over the past decades. However, there is a dearth of knowledge of influence of birth order characteristics in Nigeria and most of what is observed is based on social, cultural and religious practices. The behavioural characteristics and personality traits attributed to birth order position in western culture may not be similar to our own cultural and social setting (Makino, 2011).

The pioneer of birth order research, Alfred Adler, had theorized that each birth position has a set of personality traits. Firstborns are always seen as leaders, high-achievers, ambitious, and conforming (Rohrer, Schmukle & Egloff, 2015). They attempt to please their parents via traditional ways, which are through academic performance and responsible behaviours (Botszet, Rohrer, & Arsian, 2017). Middle children, on the other hand, may experience difficulty finding a position of privilege and significance in the family because they never have the opportunity to monopolize parents' attention (Makino, 2011). Thus, they constantly fight to stay ahead of their younger siblings. In contrast, last-borns and only children are frequently viewed as the spoiled kid of the family. It is because both of these birth positions are the only focus of the family. However, unlike the only children, the later-born children, including the middle children and last-born children are aware of the higher status of the firstborn, so they will seek alternative strategies to stand out from their siblings (Botszet, *et al,* 2017).

In addition, a dethronement theory was proposed to explain birth order effects on personality development (Botszet, *et al*, 2017). Before the birth of the younger sibling, the eldest child had his or her parents' complete attention but he or she was later dethroned by a new-born. As a consequence of dethronement, the child would struggle to regain parental attention. This led the firstborn to develop such characteristics as conscientious, conservative, independence and competence (Botszet, *et al*, 2017), which would later facilitate one's academic attainment.

Another theory that describes birth order effects on personality development is family-niches model (Sulloway, 2010).

The Big Five personality dimensions are relatively consistent and strong. The Five-Factor model was formulated by McCrae and Costa (2003). This model includes a number of propositions about the nature, origins, and developmental course of personality traits, and about the relation of traits to many of the other personality variables (Srivastava, 2010). It is helpful because it provides a straightforward description of an individual's behavioural consistencies. These five personality factors are considered to be the core of personality and it includes dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. According to Cousten, (2017), extraversion includes sample of talkativeness, assertiveness, and activity with silence, passivity, and reserve. Agreeableness contrasts kindness, trust, and warmth with hostility, selfishness, and distrust. Besides that, conscientiousness contrasts organization, thoroughness, and reliability with carelessness, negligence, and reliability. Openness to experience includes sample like imagination, curiosity, and creativity with shallowness and lack of perceptiveness. An individual who is open to experience tend to be more creative and more aware of their feelings when compared to closed people. Lastly, neuroticism contrasts nervousness, moodiness, and sensitivity to negative stimuli with coping ability.

According to Sulloway (2010), children are motivated to solicit parental investment when they perceive differential parental investment within the family. They compete for parental investment by creating distinctive niches. Sulloway (2010) also hypothesized that first-borns are less agreeable as compared to later-born children because firstborns dominate the younger siblings to minimize the diversion of parental investment. In contrast, the younger siblings avoid confrontation with the firstborns to solicit parental investment, which in turn led them to be more agreeable. Besides, he also suggested that firstborns correlate negatively with openness as compared to later-born children because openness is the factor that assists later-born children to create distinctive approaches to compete for parental investment. Furthermore, he found that firstborn are more conscientious than the later-born children because firstborns reflect their parents' attitudes, beliefs, and personality characteristics whereas later-born children may develop attitudes, beliefs, and personality characteristics that are apart from the eldest sibling and parents. Therefore, Sulloway described that later-born children are born to rebel.

In the past, studies that were carried out to examine the relationship between birth order and personality has generated inconsistent findings. Healey and Ellis (2007) who studied university sample (n= 161 sibling pairs) and older adults (n= 174 siblings pairs) reported that first-borns scored significantly higher on conscientiousness and lower in openness to experience than their second born siblings. Moreover, Botszer, *et al*, (2017), had their participants to nominate the most achieving and conscientious sibling within their family and found that the firstborns were rated as more achieving and conscientious than later-born children. On the other hand, Jamerson, (2010), and Cousten, (2017), administered brief measures of neuroticism, extraversion, and openness to experience. In addition, Ogundokun and Ojo (2013), who administered a short form of NEO-PI to 593 only children, first-borns, middle children, and last-borns, found no relationship between birth order and personality traits.

There are theories that explain birth order effect on academic achievement. First, some of the intrauterine theories claimed that young mother is able to provide a "rich uterine environment" for her earlier born children and hence, results in greater health and intelligence in the earlier born (Barclay, 2014 & Cousten, 2017). However, there are intrauterine theories that suggest the otherwise and claimed that mothers experience less labour and are less likely to use forceps in subsequent delivery, which in turn reducing the possible damaging to the child's health and intelligence (Barclay, 2014). Second, confluence hypothesis (Zajonc & Sulloway, 2007) claimed that the impact of birth order on cognitive achievement was largely influenced by familial intellectual environment and the opportunity to serve as intellectual resource. Familial intellectual environment decreases in respond to increased family size. Therefore, firstborns were born to a higher intellectual environment as compared to the later-born children.

The resource dilution hypothesis (Majed, *et al*, 2016), suggested that parental resources (e.g., money, personal attention, cultural objects) are finite and will be diluted by the addition of siblings. According to resource dilution hypothesis, parents are able to devote fully to their only child or firstborn whose sibling has yet to arrive. However, the arrival of new child led the parents to divide their resources accordingly. Besides, this hypothesis also claimed that the relative richness of parental resources also affects one's educational success. As a result, only child and firstborn (who had the full parental resources a few years ago before the arrival of new sibling) had better academic attainment than do later-born children.

Objective of the Study

The main purpose of the study was to investigate the influence of nominal birth position on academic performance and personality traits among junior secondary school students in Akwanga, Nasarawa State, Nigeria. Specifically, the study determined:

1. influence of nominal birth order on selected personality trait among junior secondary school students in Akwanga.
2. relationship between birth order position and educational attainment among junior secondary school ion Akwanga.

Hypotheses (HO)

HO_1 - Siblings of different birth order positions will differ significantly ($p < 0.05$) in terms of the Big Fives personality traits (measured by TIPI), in which firstborns will be described as being more conscientious and agreeable than the later-born children;

HO_2 - There is a significant difference ($p < 0.05$) in academic performance (measured by SCA) among different birth order positions in which firstborns and only children will excell academically.

Methodology

Area of Study: Nasarawa State is located in the North-Central region of Nigeria; bordered on the West by the Federal Capital Territory, Abuja, the North by Kaduna, the South by Benue and Kogi, and on the East by Plateau and Taraba states. Akwanga is one of the 13 local governments areas in the state and it's located in the northern senatorial zone of the state. Akwanga has a population of 113,430 people (NPC, 2006) and it is made up of diverse ethnic groups principal among which are the Eggon, Mada, Rindre and Kantana, as well as settler groups like Hausa, Fulani, Igbo and Yoruba, Idoma among others. Akwanga is home to many public (government secondary schools) and private secondary schools. Akwanga was chosen for the study because of its close proximity to the researcher and the fact that it had diverse ethnic multi-cultural endowed groups.

Research Design: The study was a descriptive (cross-sectional) survey designed to elicit information from respondents (JSS1 – JSS3) on the influence of birth order position, academic performance and selected personality traits. The research design was adopted because the findings will be from a sample representative of larger population, so that inferences can be made about some personality characteristics, academic performance among students.

***Population for the Study*:** The study population consisted of junior secondary school (JSS) students in JSS1 to JSS3 residing in Nasarawa North senatorial district with it's headquarter in Akwanga. There were seven government secondary schools in Akwanga. The population of all the junior students in JSS1 – JSS3 was 1, 662 (Akwanga LGA Schools Report, 2017).

Sample for the Study: Three government secondary schools out of the seven schools were randomly selected from the three districts of Akwanga using a simple random technique. Samples were drawn from among the SSS1 – SSS3 students irrespective of age, gender or socio-cultural background. A sample size of 249 student respondents from the three government schools were drawn using the Tsaro-Yemen's formula for population survey (Emaikwu, 2013). During the survey, two separate envelops were coded as white for the male students and brown for the female students. Each envelop contained 100 pieces of paper with 50 of which having the inscription 'Yes' and the other 50 having the inscription 'No'. A male participant picked a 'yes' from the white envelop and he was selected and vice-versa for the female participants using the brown envelop. Selections of participants were based on signed informed consent; been a first-born, middle-born, last-born or only-child; non separated or divorced family (Kluger, 2007; Eckstein et. al, 2010); age gap between adjacent siblings is not less than two years or not more than five years (Salmon, 2013). Participants were not adopted not a twin or one of multiple births and had no physical deformity or had member of family who was mentally or physically disable. Of the 249 questionnaires distributed, 207 (83.1%) questionnaires met the inclusion criteria and were presented for analysis.

Instruments for Data Collection: The study made use of a demographic questionnaire which was self-administered. The demographic questionnaire collected information on the socio-demographic characteristics of the student's participants which include age, sex, birth order position, present class level e.t.c (section A). Section B of the questionnaire sought information on parental socio-demographic characteristics which was provided by parents at home. Participants were required to fill in a consent form before they proceeded to the instruments behind. Student Class Average (SCA) score instrument was used to evaluate student performance in all subjects taken during the school terms under review. This information was provided by the class form-master or mistress. The SCA were scored according to the grades that they obtained. Grade A, B, C, D, and F were assigned 5, 4, 3, 2, and 1 point respectively.

The Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003) was used to collect information on the personality traits of student's respondents. The Ten Item Personality Inventory (TIPI) is a 10-items brief scale that is designed to measure the constellation of traits defined by Five Factor Theory of Personality. This includes *extraversion* (talkativeness, activity with silence, and reserve); *agreeableness* (kindness, trust, and warmth with hostility, selfishness, and distrust);

conscientiousness (contrasts organization, thoroughness, reliability with carelessness, negligence); *openness to experience* (imagination, curiosity, and creativity with shallowness and lack of perceptiveness); and *neuroticism* (nervousness, moodiness, and sensitivity to negative stimuli with coping ability). However on the scale of measurement, the five personality factors were measured by two items, thus extraversion (B1 and B6), neuroticism (B4 and B9), openness to experience (B5 and B10), conscientiousness (B3 and B8), and agreeableness (B2 and B7). In this study, the proportion of respondents responding to each score item was considered. TIPI has good test-retest reliability (r= 0.72) and external correlation (r= 0.90). Besides, it also demonstrates strong convergent and discriminant validity (r = 0.77) with the full Big Five Inventory.

Face and content validity were carried out to ensure the instruments measured what it was designed to measure. A reliability coefficient of 0.88 (demographic questionnaire); 0.89 (SCA) and 0.79 (TIPI) were obtained using the Cronbach alpha following a pilot study comprising of 30 junior students.

Method of Data Analyses: Descriptive statistics, including means, standard deviation, and frequency counts were used to evaluate all research questions. The t-test and Chi-square were used to respond to all numerical and categorical variables respectively. All analyses were done using statistical Package for Social Science (SPSS) version 17.0, and a p-value of less than o.05 was considered statistically significant.

Results

Socio-demographic Characteristics of Study Participants

The socio-demographic characteristics showed a heterogeneous distribution among study participants. Of the 207 respondents finally analysed, 51 (24.6%) were in JSS-1, 68 (32.9%) came from JSS-2 while the majority of the respondents 88 (42.5%) were in JSS-3. Most of the student respondents 105 (50.7%) were within the age group of 10 – 12 years; while 69 (33.3%) were within the ages of 13 – 15 years and only 33 (16.0%) were within the age group of 16 – 18 years. One hundred and thirty-eight respondents (66.7%) of the students participants were males while only 69 (33.3%) were females (male: female ratio of 2:1). The birth order positions of the respondents were as follows: 63 (30.4%) were first-born children; 50 (24.2%) were middle born children; 41 (19.8%) of the respondents were last-born children and 53 (26.6%) were only-children.

Association between personality traits and student's birth order position

Table 1: Personality Trait Distribution among Different Birth Order Position

Individual Personality Traits	Birth Order Positions First Born N (%)	Middle Born N (%)	Last Born N (%)	Only child N (%)	P value
Extroverted(Enthusiastic) -B1	82 (39.6)	29 (14.0)	59 (28.5)	37 (17.9)	< 0.001
Critical Quarrelsome – B2	53 (25.6)	43 (20.8)	82 (39.6)	29 (14.0)	0.007
Dependable Self- discipline – B3	85 (41.0)	41 (19.8)	44 (21.3)	37 (17.9)	0.03
Anxious Easily upset – B4	41(19.8)	30 (14.5)	53 (25.6)	83 (40.1)	< 0.001
Open to new experiences Complex - B5	44 (21.3)	81 (39.1)	48 (23.2)	34 (16.4)	< 0.001
Reserved Quiet – B6	51 (24.6)	60 (29.0)	47 (22.7)	49 (23.7)	0.47
Sympathetic Warm-B7	25 (12.1)	52 (25.1)	54 (26.1)	76 (36.7)	0.002
Disorganized Careless– B8	19 (9.2)	62 (30.0)	80 (38.6)	46 (22.2)	< 0.001
Calm Emotionally stable– B9	43 (20.8)	68 (32.9)	46 (22.2)	50 (24.1)	0.02
Conventional Uncreative– B10	53 (25.6)	48 (23.2)	61 (29.5)	45 (21.7)	0.29

Extraversion (B1 and B6), Neuroticism (B4 and B9), Openness to experience (B5 and B10), Conscientiousness (B3 and B8), and Agreeableness (B2 and B7).

Table 1 shows that the first-born child was most likely to be an extrovert. These relationships were statistically significant compare to other birth order positions. The personality traits attributed to the middle-born child included openness to new experience; an introvert and reserve. While the last-born child was more likely to be critical; disorganized and sensitive; the only-child was attributed to be anxious, sympathetic and calm. P value less than 0.05 shows significant association statistically. Hence, first hypothesis was accepted.

Birth Order and Academic Achievement

Table 2: Analysis of Variance for Student Class Avearage Results

Characteristic	First-born Mean (SD)	Middle-born Mean (SD)	Last-born Mean (SD)	Only-child Mean (SD)	P value
School Class Average Score	28.40 (2.85)	27.27 (4.07)	27.10 (4.77)	27.70 (3.23)	0.56

Table 2 shows the mean scores of academic performance across different birth orders. Results indicated that first-born had the highest mean score in Student's Class Average results (mean = 28.40, SD = 2.85) whereas last-born had the lowest mean score in SCA results (mean = 27.10, SD = 4.77). However, with an alpha level of 0.05, birth order effect on academic performance was not statistically significant. [$F(3, 116) = 0.56$, $p>0.05$]. Therefore, second hypothesis was not supported.

Discussion

To the best of our knowledge, this is the first study of this nature conducted in my environment. In the present research, we investigated the most dominant personality of college students using a group of junior secondary school students as a representative sample. Based on the results, it was found that the most dominant personality among student's respondents was conscientiousness (dependable, self-discipline, responsible, orderliness and diligent) which hold the highest mean of 3.25 among other personality traits; an attribute linked with the first-born child 85 (41.0%; $p = 0.03$) in this study. The current result is consistent with the past research that conscientiousness shows a higher mean or proportion during early adulthood (Majed et al., 2016). According to Salmon, (2013), and Cousten, (2017) Salmon, (2013), and Cousten, (2017) Salmon, (2013), and Cousten, (2017), conscientiousness has been linked to a myriad of positive outcomes across educational, health, and personnel psychology, and appears to be the personality trait with the most predictive utility. This is probably due to the student's responsibility in studies as well as for their family well -being. Salmon, et al, (2014) also outlined that students scored lower on Neuroticism, Extraversion, and Openness, and higher on Agreeableness and Conscientiousness when compared to the older adults. In addition, students are more likely to be conservative, mature, helpful, and serious and disciplined than their parents.

Conversely, it was found that students are less likely to possess traits of neuroticism. The students in the current study scored neuroticism trait at the lowest with the mean score of 2.91. Though an attribute associated to the only-child 83 (40.1%; $p < 0.001$) in this study, Neuroticism was related to wishful thinking and self -blame during the stressful condition, and continue in such condition will lead to an increase of anxiety, hostility, vulnerability as stated by the state-trait theory (Sulloway, 2010). With the low mean of neuroticism among students, it could be assumed that stress and anxiety are well managed by the students themselves.

As noted in the introduction, first -born, middle -born, and later -born children enter varied in home environments and are treated differently by parents and that these experiences are likely to affect their personality ((Rohrer, et al, 2015)). From the results above, the first -born child 25 (12.1%) and the last-born child 54 (26.1%) has lower agreeableness (sympathetic, warm, trusted, modesty and cooperativeness) compared to the only-child 76 (36.7%; $p = 0.002$). It is consistent with the previous findings that firstborns are higher on conscientiousness and neuroticism and lower than later -born in agreeableness and openness to experience (Marini & Kurtz, 2011). It was further supported by Zajonc & Sulloway's (2007) prediction for agreeableness, as first -born rated themselves as significantly less agreeable. The possible cause of low agreeableness of the first-born and last-born children compare to the only-child is that they appeared more dominant and aggressive among siblings. Individuals high in agreeableness enjoy helping others and tend to be self -effacing and modest; by contrast, antagonistic people are domineering and quarrelsome (Cousten, 2017). On the other hand, middle -born child scored higher in agreeableness as compared to first and last -born child. An individual who scores higher on agreeableness might be described as compassionate, good -natured, and eager to cooperate and avoid conflict (Cousten, 2017). Thus, it could be assumed that the only-child and middle -born child has a higher tendency to be the mediator between a first - born child and the later - born child.

In another aspect, the present study found that first-born 44 (21.3%), later - born child 48 (23.2%) and the only-child 34 (16.4%) all scored lower in openness to new experience (originality, curiosity, flexibility, imaginativeness and unconditional attitude) compared to middle -born child ($p < 0.001$). However, this finding was inconsistent with prior research. It has different point of views when openness to experience is being discussed. Sulloway (2010) study stated later -born scored higher in Openness and Agreeableness, which show contradictory with the current result. Previous researchers found that later-born are perceived by their neighbours and friends as being more innovative, sociable, and trusting than first-born (Emily, 2013). Openness should not be confused with self-disclosure; instead, it refers to receptiveness to new ideas, approaches, and experiences (Cousten, 2017)

There was some evidence reported that middle-born child has a high open to experiences. Open to experiences simply means that an individual is intellectually curious. It means that these individuals would appreciate imagination, beauty, art and enjoy a variety of experiences. This naturally reflects a person's ability to put themselves in other shoes, as middle -born do (Hotz et, al, 2015). Salmon & Hayman (2014) also stated that middle-born are less judgmental than other birth orders, and are more willing to entertain the possibilities inherent in new concepts rather than simply sticking with the old way of doing things.

In addition, this study found that birth order had no effect on Akwanga college students' SCA results. A few possible explanations were suggested to justify the absence of birth order effect on participants' SCA results. First, participants of the present study comprised of junior college students. In order to be enrolled into college, every student has to fulfill the entrance score. As a result, participants of this study were all high-achievers already. This is shown in their average SCA results' score. The mean SCA results score of this study was 27.62 out of 30. Due to the fact that present study was a between-family design, there was a high possibility that SCA results could be influenced by other confounding variables, such as parenting styles, parental expectation, familial intellectual environment, and biological determinants (Black. 2014 & Hotz, *et al,* 2015). Interestingly, sibship size was found to exert a greater effect on individuals' academic attainment than birth order did after age, socioeconomic background, religion, community size, and family status were controlled (Barclay, 2014). Thus, more systematic research is required to examine the roles of birth order and sibship size in one's academic achievement.

Due to the small sample of 207 female and male junior secondary schools students in the current study, it is suggested that future studies should replicate this research by using a larger representative sample with a more balanced mix of gender. It is worth noting that this research was composed of only 33.3% females, and 66.7% of males. Therefore, this sample size may have limited the researcher's ability to generalize the findings. Besides that, the data are based on self-report, therefore, we believe that individuals may not be accurate and honest in their responses. Despite the afore-mentioned limitations, current study consists of a number of strengths that made the research findings valid and informative. First, this study involved a random selection of participants from different ordinal positions and hence, research findings were not biased in terms of birth order position. Second, the issue whether only child is raised as a firstborn or lastborn is still a controversial one so some studies either excluded only-child from their study or grouped them into the first-born category (Hotz, *et. al*, 2015). Therefore, the inclusion of only-child as a distinct birth order category was a merit of current study. Third, this study employed tool (i.e. TIPI) that has strong reliability and validity. Lastly, this study was one of the very little studies that examined birth order effects in the Nigeria context.

Conclusion

This study found that there is a significant relationship between birth orders and the Big -Five personalities among college students in Akwanga, Nasarawa State. The positive influence of nominal birth order on personality outcomes and the non-significant effect on educational achievement in this study are not different from what other studies have reported. Parents see their children as very different. These differences may be due to unconscious encouragement of birth order characteristics, or parents may be responding to what is innately characteristic of each child because of the child's genetically inherited traits. Parents have different expectations for each sibling based on birth-order position. Parents focus on the older child's intellect and achievements when stating future expectations but focus on the younger child's personality.

Recommendations

1. It is essential for educators to assess their students, utilizing birth order as a tool to assist them find what environment is most advantageous to learning for them. Using this knowledge, the educator can begin to reach his or her students on a new level.
2. It is also imperative for parents to understand the influence of birth order position on personality trait, academic achievement and behavioural indices to enable then provide proper parenting style and guide for their children.

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JHER Vol. 26 No. 2 December 2019, pp. 71 - 81

Influence of Level of Workload Demand on Family Living Responsibilities among Academic Staff Members of Universities in Kwara State

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Abstract

The study investigated the influence of level of workload on family living responsibilities among academic staff of universities in Kwara State. Three research questions were raised and corresponding hypothesis was tested at 0.05level of significance. Survey research design was adopted. The population of the study comprised all (1477) academic staff of state and federal universities in Kwara State of Nigeria. Instrument used was questionnaire. Data were analysed using frequencies, percentages, mean, and t-test. Findings reveal that workload demand influenced family living responsibilities of academic university staff moderately, 73% academic staff had moderate family living responsibilities. There is significant difference between male and female academic staff ($P<0.05$) as regards influence of workload demand on family living responsibilities. Workload affected female academic staff with respect to family living responsibilities. It was recommended, among others were that universities have to insist on the need to balance student intake with available human resources. University management should establish policies and practices that offer support for both work and family demands such as establishing a day care centers or crèches to help women with young children. Women should apply the principles of time management.

Keywords: Workload, Family, Living, Responsibilities, Academic Staff, Universities,

Introduction

Universities are expected to contribute to the economic and social needs of countries. These expectations pose a great deal of challenge to both academic and non- academic staff of universities, placing a demand for increased workload on them. This is likely to have a significant impact on their family life and job performance. The increase in student population together with the challenges facing Nigerian education system have tended to make the work of the university staff very complex and involving. It may be possible for the academic staff to claim exclusive control over teaching and research activities but, at the same time, it may not be quite easy to combine many academic and administrative responsibilities with family responsibilities and this could be a source of problems.

Workload demand may be explained in terms of the amount of work assigned to or expected from a university staff in a specified time or period which are allocated to staff members according to levels. The level of workload is the total number of hours spent in teaching, research and job related administrative services. Based on the National Universities Commission's (2016) recommendations, the level of workload for university staff could be normal, light or heavy depending on tasks assigned to and performed by the staff, hours spent on the job and also on staff - student ratio. Normal Workload is for academic staff who is spending 12 hours/week/ semester for science-based disciplines and 8 hours/week/semester for art-based disciplines on the job. Light Workload means spending less than 12 hours/week/semester for science-based disciplines and 8 hours/week/semester for art-based disciplines for academic staff. When physical demand requirements are less than those for normal workload. Heavy Workload is spending more than 12 hours/week/semester for science-based disciplines and 8 hours/week/semester for art-based disciplines on the job.. When physical demand requirements are in excess of those for normal workload.

Past research works have reported that excessive work hours, heavy workloads, poor management, staff – student ratios, and pressure to attract external funds, have frequently been reported by academic staff in the universities.(Organization for Economic Cooperation and Development, 2008). University academic workload include: teaching, research, academic leadership and service.

Workloads are not necessarily negative, but may turn into job stressors when meeting those demands conflicts with family time or demands and may elicit negative responses such as depression, anxiety, fatigue and interpersonal living responsibilities .

Two important focal points of adult life are family and work. The role expectations of these two domains are however not always compatible. They sometimes create conflicting living responsibilities where performance in one role creates an inability to adequately perform in the other role. Work demand if in excess may lead to family conflicting living responsibilities, breakdown in personal relations with family members, low levels of mutual understanding and tolerance, irritability, indecisiveness, poor communication, poor interpersonal skills, feelings of isolation and alienation. Unresolved conflicting family living responsibilities may lead to things like divorce or domestic violence and irreparable damage to a marriage and the entire family.

A family is a unit of interacting persons related by ties of marriage, birth or adoption whose central purpose is to maintain a common culture which promote physical, mental, emotional and social development of each of its members. (Olson, & DeFrain. 2006). The family is best seen as a fabric made of intermeshed relationships and interdependent obligations. These relationships may be threatened if work demand encroach on family time and might increase risk of conflicting family living responsibilities leading to problems.

Conflicting family living responsibilities is a type of behavior when two or more parties are in opposition as a result of perceived relative deprivation of organizational activities. Conflicting family living responsibilities is a disagreement among family members due to opposition of one person to another, in an attempt to reach an objective different from that of the other person (Evans and Cassells, 2013). For example in a family setting comprising father, mother, children and other relatives, certain category of people might feel they are not being carried along or are neglected by their spouse, parents or guardian as a result of too much attention dedicated to work. This can result into conflicting living responsibilities referred to as work-family conflict Work – family conflict is a form of inter role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. (Yang, Chen, Choi,& Zou, 2000).) That is participation in the family role is made more difficult by virtue of participation in the work role. Conflicting work family living responsibilities may cause occupational stressors and conflicting living responsibilities between a person's roles as an employee, and being a spouse or a parent. This could become a major threat to quality of family life. For example, conflict might erupt as a result of encroachment of work demand on family time and this might increase the risk of conflicting living responsibilities in the family. and possibly result into job and family distress, poorer health outcome such as tiredness, body pains, and dissatisfaction with life. Lack of happiness at work and conflicting family living responsibilities at home can lead to the society having more single parents, unhappy children which can lead to social vices, corruptions and immoralities

The researcher's observations in tertiary institutions in Kwara State, have shown extreme workload demands among university staff which might adversely affect the employees' relationship with their family members, and physical health.

Work and family challenge is a key issue facing many workers in Nigeria and other nations of the world. It is common knowledge among university staff that multiple roles are assigned to staff members within the universities system, especially lecturers in universities in kwara state. Earlier study by Ofoegbu and Nwadiani (2006) found that the level of workload among academics was significantly high. Academic job often demands working late, far beyond the normal office hours, in order to complete tasks on schedule and to meet deadlines. Administratively, the lecturers work as counsellors, examination officers, postgraduate coordinators, Deans and Departmental Heads. Can the academic staff cope with many of these non-academic functions and still have time to attend to the major academic responsibility assigned to them without adverse effect on their family life?

With regard to teaching loads, some teach extremely large classes, supervise theses, and project works. Nonetheless, lecturers are expected to publish high-quality research findings in reputable journals to be promoted. Thus, the lecturers work under increased pressure to meet targets set by the university.

In many cases university staff find themselves in a position where work had to be taken home in order to fulfill and sustain professional standard or meet up with deadlines. This reduces the possible opportunity for restorative psychological detachment from the job and can often result to conflicting living responsibilities between spouses leading to family disintegrations, infidelity, or an unexpected marriage failure. The resultant effect of the pressures mounted on staff is the heavy workload that is continually increasing with the associated increase in stress, which appears to be a major threat to the quality of family life and can affect strength, security and family sustainability, as affirmed by Salami, (2015) that if family members do not get along well together socially, they are unlikely to be successful economically or environmentally. The problem statement is whether workload affect family living responsibilities of university staff in Kwara State? This form the baseline of this study. The intent of this study therefore is to determine the influence of the place of workload on family living responsibilities among academic staff of universities in Kwara State.

The findings of the study once published in journals, proceedings, research related reports, religious settings and presented in conferences may be of immense benefit to all stakeholders in family life education namely, families, individuals and communities, organizations, university staff, university administrators, young people, policy makers, researchers, family life educators, and the society.

Purpose of the study: The main purpose of this study was to investigate the influence of level of workload on family living responsibilities among academic staff of the universities in Kwara State. Specifically, the study:

1. established the level of official workload of academic staff of universities in Kwara State;
2. determined the influence of workload demands on family living response-bilities among the academic staff;
3. determined gender differences on the influence of workload demand on family living responsibilities of academic staff.

Hypothesis

H0: There is no significant difference between the mean responses male and female academic staff of Universities in Kwara State on the influence of workload demand on family living responsibilities.

Methodology

Design The study adopted a descriptive survey research method in which the opinions of a representative sample of academic staff in state and federal universities in Kwara State were sought.

Area of Study: The study was carried out in State and Federal universities in Kwara State Nigeria (Kwara State University and University of Ilorin)

Population for the Study**:** The target population for this study consisted of all academic staff members of the State and Federal Universities in Kwara State. There are 14 faculties and eight faculties in the federal university and Kwara State University respectively[1].

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[1]***Sources***: Academic Planning Unit, University of Ilorin Annual Report and Registry, Human

Sample for the study: The sample for the study comprised of 204 university academic staff constituting fifteen percent (15%) of the population. Multistage sampling technique was used to select one Federal (University of Ilorin) and State (Kwara State University). Eight and four faculties were randomly selected from Federal and State Universities respectively. Proportionate stratified sampling techniques was used to select respondents from the faculties.

Instrument for Data Collection: Questionnaire was used for data collection. It was comprised two sections A, B and C. Section A was structured to elicit biographical information about the respondents such as gender and university type. Section B and C dealt with the specific objectives of the study. Workload level was assessed in terms of number of hours spent on university related work day/week. Supervision of undergraduate or postgraduate theses/projects, and undergraduate/postgraduate courses taught per session and credit unit / teaching load per week. The questionnaire was rated on a "5-point"Likert type scale ranging from "1" which indicates "never" to "5" which indicates "always".The instrument, was validated by three experts, two experts in Department of Vocational and Technical Education and a statistical analyst in Measurement and Evaluation, all of the university of Benin. Reliability index after pilot testing stood at 0.795.

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Data Collection Techniques: Data was collected from the Academic and non-academic staff of each of the Universities by administering the questionnaires. The questionnaires were distributed by the researcher and three (3) trained research assistants. Completed copies of the questionnaire were collected and checked in order to ensure their completeness by the participants. All the questionnaires were returned showing 100% return rate.

Data Analysis Techniques: Research questions 1 and 2 were analysed using mean, percentages, and standard deviation, The Null Hypothesis formulated in the study was tested with Independent t- test. The null hypothesis was tested at 0.05 level of significance.

Results of the study

Demographic characteristics of respondents

Data analysis shows that 139 (68.1%) male subjects and 65 (31.9%) female subjects participated in the study comprising 204 (34.75%) Academic staff. The table further revealed that 52 (25.5%) workers were from State Universities while 152 (74.5%) were from Federal Universities. .

Level of Workload

Table 1: Level of Workload of Academic Staff

Workload level	Hours spent on university related work per day	Freq (%)	Hours spent per week
Light workload	4-7 hours	20 (9.80)	20-35 hours
Normal workload	8-12 hours	90 (44.12)	40-60 hours
Heavy Workload	12 hours and above	94 (46.08)	60 hours and above
	Total	204 (100)	

Table 1 reveals that 20 (9.80%) of the academic staff had light workload, spends up to 4-7 hours daily/20-35hours per week, on university related work, 90(44.1%) had normal workload, spends 8-12hours per day/40-60 hours per week, while 94(46.1%) had heavy workload, and spends above 12 hours per day /above 60 hours per week on university work. This implied that that majority(90.2%) of the academic staff had heavy workload and work beyond normal work hours. Only 9.80% had light workload.

Light Workload: Less than Normal Workload level/Hours (spends up to 4-7 hours daily/20- 35hours per week, on university related work)

Normal: Normal Workload level/Hours (spends 8-12hours per day/40-60 hours per week)

Heavy Workload: -Excess than Normal Workload level/Hours(spends above 12 hours per day /above 60 hours per week on university work (National Universities Commission, 2016).

Table 2: Descriptive Statistics on Influence of Workload on Family Living responsibilities of Academic Staff

	Family Living responsibilities			
Work Load Level	**Low**	**Moderate**	**High**	**Total**
Light	9(45.0%)	11(55.0%)	0(.0%)	20(100%)
Normal	22(24.4%)	59(65.6%)	9 (10.0%)	90(100.0%)
Heavy	8(8.5%)	79(84.04%)	7(7.4%)	94(100.0%)
Total	**39(19.1%)**	**149(73.0%)**	**16(7.9%)**	**204(100.0%)**

Table 2 reveals that of the 20 respondents with light workload, 9(45.0%) had low family living responsibilities while 11(55.0%) had moderate family living responsibilities . No one had high family living responsibilities among this group. Out of the 90 respondents with normal workload 22(24.4%) had low family living responsibilities , 59(65.6%) had moderate family living responsibilities and 9(10.0%) had high family living responsibilities. Of the 94 respondents with heavy workload, 8(8.5%) had low living responsibilities, 79(84.04%) had moderate living responsibilities and 7(7.4%) had high family living responsibilities . out of the 204 academic staff 39(19.1%) had low family living responsibilities , 149(73.04%) had moderate family living responsibilities and 16(7.9%) had high family living responsibilities . Showing therefore that most of the people with heavy workload perform moderately at home and had moderate living responsibilities . This means their work had moderate interference with their family life.

Table 3: Mean ratings and standard deviations of respondents on influence of workload demand on family living responsibilities of academic staff.

S/N	Item Statements	Mean (X)	Standard Deviation	Remark
	Family Living responsibilities Scale			
1	I fulfill my family role effectively after spending long and demanding hours at work.	4.09	.92	Agree
2	I am so emotionally drained when I get home from work that it prevents me from contributing to my family obligations	2.69	1.07	Disagree
3	The amount of time my work takes up makes it difficult to fulfill my family responsibilities.	2.67	.94	Disagree
4	I have to make changes to my plans for family activities due to work-related duties.	3.19	.84	Disagree
5	My job keeps me away from my family too much.	2.67	1.01	Disagree
6	The demands of my job make it difficult for me to relax when at home.	2.98	1.06	Disagree
7	After work, I come home too tired to do some of the things I like to do.	2.99	.96	Disagree
8	Due to the demanding nature of my work, I am irritable and in a bad mood at home.	2.18	.96	Disagree
9	My job makes it difficult for me to be a dedicated spouse or parent	2.15	1.06	Disagree
10	I have to put off doing things I like to do at home because of work-related demands.	2.85	1.04	Disagree

Table 3 shows that the mean of the items ranged from 2.15 to 4.09. All of the items had their means below the cut-off point of 3.50 except item 26 with a mean of 4.09 indicating that the respondents agree to fulfilling their family role effectively after spending long and demanding hours at work. This indicated that workload demand had moderate influence on the family living responsibilities of academic staff . The standard deviation of the items ranged from 0.84 to 1.06 indicated that the respondents were close in their responses.

Hypotheses testing

One (1) hypotheses was formulated and tested at 0.05 level of significance for this study. The result of the hypothesis is as follows.

Hypothesis One

H0: There is no significant difference between mean responses of male and female academic staff of universities in Kwara State on the influence of workload demand on family living responsibilities.

Table 5: t-test analysis of difference between male and female academic staff of universities in the influence of workload demand on family living responsibilities.

Group	N	Mean	Standard Deviation	df	t	Sig (2tailed)
Male	139	27.52	6.41	202	3.069	. .002
Female	65	30.45	6.22			
Total	**204**					

α = 0.05

Table 5 shows a calculated t value of -3.069 which is significant at .002 since the P value of .002 is less than the alpha level ($P<0.05$) this implies that the observed differences between the mean for male and female academic staff of universities in Kwara State was significant. So the null hypothesis which states that there is no significant difference between male and female academic staff of universities in Kwara State on the influence of workload demand on family living responsibilities was rejected. Consequently, there is a significant difference between male and female academic staff of universities in Kwara State on the influence of workload demand on family living responsibilities. Since there is a difference, the direction of superiority is for the female staff since the mean of the female staff ($\bar{x}$=30.45) is higher than that of the male staff ($\bar{x}$ =27.52). This showed that workload affected female academic staff with respect to family living responsibilities than their male counterparts.

Discussion of Findings

The study investigated the influence of level of workload demand on family living responsibilities among academic staff of universities in Kwara State. The findings of research question one on the level of workload of academic staff of universities revealed that university academic staff differs in the allocation of workload level, academic staff had either light , normal and heavy, workload based on hours spent on university work per day /week.

The findings showed that most of the academic staff members at the universities studied worked for more than 40-60 hours per week per semester, which is above the legally recognized number of hours (40hrs) prescribed by the National University Commission(1989) which stated that a full time staff should have a minimum teaching load of 8 credit units per week per semester, including post-graduate teaching.

This result implied that the academic level of workload was high. This finding is in agreement with Organization for Economic Cooperation and Development (OECD) (2008) and Chin, Yian, and Yen, (2003) who discovered that on the average, university academics were working 46 to 53hours per week. The finding is also in consonance with Yucker, & Harold (1994) who stated that, many professors claim they work an average of 55 hours a week.

The result of the second research question on how workload demand influence family living responsibilities among academic staff of universities in

Kwara State, revealed that workload demand influenced academic staff with respect to family living responsibilities moderately showing that most of the academic staff with heavy workload had moderate family living responsibilities .

The findings of Carlson and Kacmar (2000); Baker & Demerouti (2007) agreed with the results of the study as they found out that workload demand is positively related to work/family living responsibilities and that quantitative workload contributed to heightened feelings of work family living responsibilities. Berg, Kalleberg and Appelbaum (2003) also lend credence to this result when they affirmed that workload demands, as measured by hours worked, are perhaps the most consistent predictor of work-family living responsibilities.

Finding on null hypothesis one reveal that there was a significance difference between male and female academic staff of universities in Kwara State on the influence of workload demand on family living responsibilities. Thus, the null hypothesis of no significant difference was rejected because the computed significant (p) value (2-tailed test) is less than the alpha value ($p<0.05$) for academic staff. The result showed that workload affected female's academic staff with respect to family living responsibilities more than the males.

This finding agreed with the views of Simon (1995); Kinman (1996); Reddy (2010); and Copur (2010) who all found that women experienced significantly higher degree of family living responsibilities than men in academics and the job types. The findings of Duxbury and Higgins (2001) who discovered that working mothers continue to experience greater difficulty balancing work and family than fathers equally corroborate this finding. This finding disagree with Blanchard -fields, Chen and Herbert (1997) and Evans and Bartolome (1984) who all discovered that men and women do not differ on their level of work family living responsibilities .

The findings agreed with Adeoye and Durosaro (2011) who discovered that female lecturers do not have enough time to relax even at home where workers are expected to have opportunities for relaxation and that female lecturers do experience stress from both the work and home arena.

This finding could be attributed to the multiple role stress for working mothers who engage in fulltime office work and whose husbands contribute little to household work and child care.

Simon, (1995) and Salami, and Uwameiye, (2003).also lend credence to this result when they stated that in Nigeria, women view family as their primary obligation and attach more meaning to their parenting role than their work role. They reiterated that females are taught to accept the feminine roles that society assigns them, the feminine attitude, often prevent them from behaving assertively. They are mostly submissive to avoid living responsibilities, which often lead to the women lacking confidence in themselves.

The result could also be because some women do not practice time management. Uko-Aviomoh (2015) explained that careful management of time through time allocation to important activities and cutting down idleness, procrastination, gossiping, and irrelevant activities will help to make time for professional and personal activities. She reiterated that time management is known to increase productivity at work and at homeso women should create time for leisure and rest to prevent stress and family living responsibilities

Conclusion

Based on the findings, the study concludes that workload influenced family living responsibilities of academic staff of universities in Kwara State. People with heavy workload had moderate conflicting family living responsibilities. Workload affected females academic staff with respect to conflicting family living responsibilities .

Recommendations

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

1. Women should apply the principles of time management through planning, organizing, implementing and evaluating the use of time to accomplish or perform their duties.
2. Women academics should build family ties by seeking help at home, like getting a maid or child care helper, or rely on their spouses if any by asking them to lend a hand to alleviate their suffering.
3. Policies and practices that offer support for both work and family demands should be established such as an on-site day care centers or crèches for infants.
4. Universities should insist on an optimum level of student intake or recruit more staff in quantity and quality to match the annual growth in student enrolment.

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JHER Vol. 26 No. 2 December 2019, pp. 82 - 89

Pattern of Time-Use for Household Chores among Working Class Spouses in Jos Metropolis

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Abstract

The study investigated the pattern of time use for household chores among married working spouses in Plateau State. Survey design was used. Sample size was 235 spouses made up of doctors, teachers and bankers across Jos Metropolis from the population of 2,924 spouses. The sample consists of 122 (52.3%) males and 112 (47.70%) females. The spouses comprised of bankers of 78(33.19%), teachers 84(35.74%) and doctors 73 (31.06%). Questionnaire was used for data collection. Percentages, mean and standard deviation were used for data analysis. Findings reveal that most spouses used 30-1hour time for household task. Also, in terms of gender role female had the highest percentage of 66% while male had 34% in kitchen and food task. It was recommended, among others, that employers and management of organizations should evolve ways of helping their employees in coping with work and household chores. Husbands should assist wives in the traditional women chores.

Key words: Pattern, Time, Household chores, Married spouses, workers.

Introduction

Household chores encompass all tasks and activities that go into maintaining households and their members, such as caring for children, cooking and cleaning. These activities are fundamental to everyday living and make a significant contribution to the welfare of the society. The nature and distribution of household chores are important for a number of reasons. First, these activities and role distribution are important in their own right in considering gender differences in house chores. Secondly, studying the gender distribution (division) of these household tasks contributes to the understanding of gender inequality in the public sphere. Thirdly, the value of household chores, particularly caring, is an important issue in relation to a range of policy debates, such as provision and funding of childcare, individualization of taxation and the employment requirements attached to benefits for single parents (Sean, 2009). House chores involve those activities that are undertaken on a regular basis for the good management of the home and the well-being of the family (Coltrane, 2000). House chores are the unpaid domestic duties that need to be performed in order to safeguard the society.

Time is a finite resource and couples negotiate implicitly or explicitly how both partners spend their time in paid and unpaid work. The disposable time can be divided into time spent on childcare, household chores and shopping (Sayer, 2005).

The pattern of time uses and how time is used affects each person's goal attainment and the use or development of other resources. Time is often used with energy, to reach a goal. Time, like other resources, is limited and can be spent wisely or wasted through poor management. The ability to manage time effectively can give order and direction to life. The amount of time spent and conditions of chores are prominent issues that are of interest across professions, as time affects our lives directly. Time is the fourth dimension and a measure in which events can be ordered from the past through the present into the future and also the measure of durations of events and the intervals between them (Le Poidevin, 2004). Diverse fields such as business, industry, sports, science and arts incorporate some notion of time into their respective measuring systems.

Until recently, the division of labour has been an integral aspect of life in Nigerian family. Men were the main breadwinners, while women were saddled with domestic responsibilities. Numerous studies on household chores have included child care and domestic work such as cooking, cleaning, and gardening (Hakim, 2004). An important component of the domestic responsibilities of women is caring for family members (Adepoju&Mbugwa, 2005). Adepoju and Mbugwa (2005) maintained that men could work away from home, while women were engaged in activities that could be carried out within or around the home. Women were encouraged to concentrate on household chores and the socialization and monitoring of young children.

In other to have an effective distribution of roles and effective execution of such roles there is a great need for the spouse to create time for unwinding after the day's activities. Darby E. *et al* (2011) supports this view where they stated in their work "Time Spent in Housework and Leisure" that Families reunite after work or school with dual goals: to recover from the stresses of the day and to tackle the evening's agenda. Within the contemporary family, these goals often compete, as parents must unwind from increasingly longer workdays while continuing to coordinate the home-based demands of chores and childcare.

The interplay between their work life and family demands puts pressures on employees and organizations especially those in the banking, educational and health sector. Long working hours (that is, more than 48 hours a week) are associated with increased errors, workplace injuries and health problems (Ajayi, 2013). It has also been argued that long heavy workload and lack of flexibility in the use of chores time pattern provoke stressful conflicts between chores and private life for many working spouses (Ajayi, 2013) and this is likely to have a negative impact on organizations. Although their experiences may vary with regard to differences in economic stance, age category and type of family, the actual experience is that the challenges cut across all socio-economic levels and are felt most by women because they are the burden bearer of household chores and child care. The daily confirmations around us are the evidences of what workers face as a result of multiple demands on their time.

The time allocated to family activities and professional career of spouses play a vital role in stability of marriage, as research has shown that married spouses are faced with various confronting problems both at home and at work places (Mawusi&Manieson 2015). Although several studies have assessed the challenges of spouses in paid chores with emphasis on time use and its effect on productivity within organizations, not much has been done in the area of how time used by working spouse influences time used in household chores. More so, there is a dearth of studies with populations in the banking, educational and health sectors with reference to how working married spouses in these sectors manage household chores considering the tight working schedules in these organizations. However, very little has been written in West Africa focusing on the pertinent challenges that married spouses in paid labour force go through. Hence, researching this sensitive aspect of life will shed light on the coping strategies on the pattern of time use by the married spouses for house chores. This study, therefore, fills this gap by examining the use of time allocated to household chores among working-class spouses, the labour force that cannot be despised. Therefore, this study is significant because it seeks to construct an evidence-based taxonomy on Nigerian working spouses and the pattern of time use and serve as a foundation for further research extension. It will help the concern organization to improve on the social welfare policies for working spouses such as bankers, doctors and school teachers.

According to Anyakoha and Eluwa (2015), human resources are those that exist within people such as energy, time, skills, knowledge, attitude, creativity, etc. and material or non-human resources are those that exist outside people and can be controlled or owned or used by the family for example tools, money, social facilities, goods etc. Time is often used with their recourses such as energy to reach a goal. Temporal component is the time of the workers and how he or she allocates to activities. Factors affecting temporal components include control of time, riming and time allocation. Control of time is restricting or managing something in order to keep within bounds or on a course. Control of time therefore has to do with how time is managed to accomplish household task or the process of planning, organizing, implementing and evaluating with control of time, home makers can utilize their resources effectively so as to meet up with pattern of tine use for household chores by spouses.

Galinsky, (2011), opined that the home maker should have a good timing of events both at home and work place considering flexible and inflexible event. The inflexible events include the time for being in the working place hours when children are in school. The work at home is a flexible event and time allocated to events at home and other activities should not be overemphasized. The time needed to sleep, personal care, medical care, to take care of children and leisure time should be put into consideration. The length of time span of 24 hours for a full time housewife and about 14 hours for employed spouses should be utilized well. Therefore, the employed spouses must strictly manage, control and allocate time to the activities both at home and work place.

Objectives of the Study

The major objective was to investigate the pattern of time use for household chores among married working spouses. Specifically, the study determined:

1. time allocated to household chores per hour by the married spouses in Jos Metropolis Plateau State.
2. household chores performed by spouses based on gender in Jos Metropolis Plateau State.

Research Questions

The following research questions are stated to guide the study:

1 What is the time allocated per hour to household chores by the spouses in Jos Metropolis Plateau State?

2 What are the household chores performed by the spouses based on gender in Jos Metropolis Plateau State?

Methodology

Area and Design of the Study: This study was carried out in Jos Metropolis which is the capital city of Plateau State and it is situated in the middle belt of Nigeria and one of the oldest regions in Nigeria. The study adopted survey research design with the aim of collecting data from the sample of each category of chores type and generalize the information upon the said population in the study area.

Population for the study: The population of the study consist of 2, 924 working class couples within Jos Metropolis, with specific focus on teachers, 1718, bankers 851; and medical doctors 355. The reason for choosing these categories of workers is due to the tasking and complex nature of their work and working environment. They need to balance household chores[2].

Sample for the study: A sample size of 235 from the population were selected using stratified random sampling technique and simple random sampling. The stratified sampling technique was used to divide the working spouses into categories of the doctors, bankers and teachers. Therefore, a simple random sampling technique was used to select sample size from each stratum. The distribution of the respondents was 73 (31.1%) doctors, 84, (35.7%) teachers, and 78 (33.2%) bankers.

Instrument for data collection: A Structured questionnaire was used for data collection. It was developed based on the literature reviewed and the objectives of the study. It had three sections Section A sought demographic information on the respondents. Section B dealt with household chores and section C on time use on the household chores. The instrument was Face and validated

Data collection techniques: The instrument was administered to the categories of the respondents by the researchers and was collected immediately. This allowed the retrieval of the entire questionnaire distributed.

Data Collection Techniques: The data collected were analysed using the descriptive statistics were used to provide answers to research questions raised in the study using mean and standard deviation, frequency counts and percentage.

Findings of the Study: The findings of the study are summarized in Tables 1 and 2.

[2]{Head of Operations (banking Sector), Jos (2015); Ministry of Education, Planning, Research and Statistic Department, Jos, 2013/2014; Associations of Resident Doctors (ARDs), Jos, 2015}.

Table 1: Percentage Response on Time Allocated to Household Chores by Spouses in Plateau State

S/No	Types of household chores	30-1hr (%)	1-2hrs (%)	2-3hrs (%)	Above 3hr (%)
1	Shopping for food	43.0	38.3	11.9	6.8
2	Cooking	34.5	40.0	15.3	10.2
3	Cleaning of Kitchen	61.7	21.7	11.1	5.5
4	Washing of dishes by hand – drying	73.2	16.6	5.1	5.1
5	Tiding up sitting room bedroom	53.2	29.4	11.1	6.4
6	Washing clothes by hand – hanging	36.6	38.3	17.9	7.2
7	Ironing clothes	50.6	36.6	9.4	3.4
8	Cleaning yard – garden	42.6	34.9	15.7	6.8
9	Repairing other things	53.6	37.0	6.8	2.6
10	Taking the trash out	74.9	11.5	8.1	5.5
11	Bathing of Children	61.7	11.1	21.7	5.5
12	Preparing children for school	43.0	38.3	11.9	6.8
13	Helping children on home chores	50.6	36.6	9.4	3.4
	Overall average percentage	**52.3**	**30.0**	**12.0**	**5.8**

Table 1 shows the percentage responses on time allocated to various household chores by all the spouses under study. The overall percentage shows that between 30minutes -1hr had the highest percentage which is 52.3% followed by 1-2hrs 30.0% next is 2-3hrs with 12.0% and above 3hrs which is 5.8%. The result obtained shows that most married spouses spend 30min-1hrs major to do the household chores based on their responses. Furthermore, 1-2hrs also had a reasonable percentage indicating that the married spouses in Jos metropolis 30min-2hrs mostly for household chores.

Table 2: Differences in Gender Roles in Household Chores among Spouses

	Doctors		Teachers		Bankers		Total	
Household chores	Male	Female	Male	Female	Male	Female	Male (%)	Female(%)
Personal task (dressing, showering etc.)	40	24	25	40	36	33	101 (51.0)	97(49.0)
Housekeeping chore	34	17	25	31	35	26	94 (56.0)	74(44.0)
Kitchen & food related chores	23	22	14	45	14	34	51 (34.0)	101(66.0)
Clothing & laundry related	34	16	17	25	24	25	75(53.2)	66(46.8.0)

Table 2 presents the frequency and percentage of the gender role in house chores. It shows that 51% of male response performed personal task while 49% of female they performed personal tasks which are medical care, showering, dressing/ make up and eating. In term of home task which includes cleaning house, home repairs, school runs, paying bills the male had 56% while female is 44%. The kitchen and food task the male had 34% while female had 66% this task includes cleaning up the kitchen, cooking of food, washing/drying of dashes etc. The clothing and laundry task the male had 53.2% while the female had 46.8% which are washing by hands, ironing/folding of clothes washing by machine and sewing of cloth. Generally, both genders that is male and female had roles to play in household chores based on the response of the married spouses in Jos metropolis.

Discussion of Findings

The present research found that most of the spouses from the three categories spent an average of 30min-1hr in performing most of the household chores. This has implication on the ability of the working class spouses on a daily basis because time plays a vital role in their chores life as it increases the working hours every day. This finding was in agreement with the Ajayi(2013) long working hours are associated with increase chores error in chores place and health. This indicates that time use on the household chores on daily basis put more pressure on the married spouses as they interplay between chores and family demand.

The study also found that both male and female engages in household chores even as they perform their organization duties. The study established that males are getting more involved in some household chores than their females' counterpart. Chores such as home task which include cleaning of house, home repairs children school activity and bill payment tend to more performed by male spouses' participants in the study. The finding disagreed with Milkie, *et al* in Ajayi (2013) where it was asserted that women performed more household chores than men. The paper has been able to establish that both male and female play a significant role in household chores in Jos metropolis this gives credence to Varjonen (2006) that say men and women play equal role in household chores, except in area of kitchen and food task where the female performs more than the male working-class spouses. However, the study revealed that both gender played their different role in performing the household chores on daily basis. The study to a very great extent agrees with Mondi and Ojo (2011) who opined that men may be supportive of their working wife because of the extra family income and might help her with some errand, but may not support an equal sharing of household chores due to traditional role sharing ideology of an average Nigeria.

In other to have an effective distribution of roles and effective execution of such roles there is a great need for spouse to create time for unwinding after the day's activities. Darby *et al* (2011) supports this view where they stated in their work "Time Spent in Housework and Leisure" that Families reunite after work or school with dual goals: to recover from the stresses of the day and to tackle the evening's agenda. Within the contemporary family, these goals often compete, as parents must unwind from increasingly longer workdays while continuing to coordinate the home-based demands of chores and childcare.

Time is a finite resource and couples negotiate implicitly or explicitly how both partners spend their time in paid and unpaid work. The disposable time can be divided into time spent on childcare, household chores and shopping (Sayer, 2005.

This study agreed with Anyakoha (2015) who reported that avoid procrastination, i.e. delaying activities. For instance, one may put off an activity that should be accomplished today till tomorrow or even next week. The risk is that it may remain undone. The findings shows that there is no significant different on gender roles. Cooking and shopping recorded the highest allotted time at 1 – 2hrs Varjonen (2007). The study found that there is relationship between type of work and pattern of time spent on household chores.

The finding agreed with the finding of Aalto and Varjonen (2006) where the researchers found that the larger the family size the more time spend on household chores among married persons.

Conclusion

Household chores is a must for all spouses and it required time to perform. This task is a problem that has been confronting so many married spouses in Jos metropolis due to the nature of chores and time available for them. The study investigated pattern of time use for household chores among married spouses working in Jos metropolis in Plateau state. Based on the findings of this study there is relationship between type of chores and pattern of time spent by married spouses to perform their household chore.

Recommendations

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

1. Husbands should assist their wives in tasks such as cooking, cleaning and washing which are traditionally done by women.
2. Procrastination on paid and unpaid chores should be avoided to reduce over chores load on the working spouses.
3. Employers and management of organizations should evolve ways of helping their employees in balancing and coping with the demands of their jobs and household chores.

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JHER Vol. 26 No. 2 December 2019, pp. 90 - 101

Nutritional Status of the Aged (≥60 Years) in Nsukka Urban, Nsukka Local Government Area, Enugu State, Nigeria

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Abstract

The study assessed nutritional status of the aged (≥60 years) in Nsukka Local Government Area of Enugu state, Nigeria. Specifically, the study assessed the anthropometric indices, fasting blood glucose, blood pressure, nutrient intake and determined malnutrition indicator score of respondents. Three hundred and fifty-four respondents were selected from three communities by systematic random sampling. Questionnaire, bathroom weighing scale, height metre, measuring tape, M2 Basic Sphygmomanometer and Accu-check glucometer were used for data collection. Data collected were analysed using mean, percentages, t-tests and chi-square. $P < 0.05$ was accepted as the level of significance. Overweight (28.8%), mild obesity (19.5%) and moderate obesity (1.7%) existed among respondents. Prevalence of diabetes mellitus was 12.8% whereas 10.0% had impaired fasting blood glucose. Severe and moderate systolic hypertension existed in 5.0% and 26.2% of respondents. Mean energy, fats, calcium and vitamin A intake of males and females were 2385.06kcal vs. 2343.41kcal, 78.01g vs 71.58g, 398.47mg vs 383.15mg and 524.76µg vs 421.52 µg, respectively. Calcium intake contributed only 34.65% and 29.47% of the males' and females' (Recommended Nutrient Intake (RNI). It is recommended that family members should pay attention to the nutrient needs of the aged to ensure adequate nutrient intake.

Keywords: Nutrition, Anthropometric, Dietary Intake, Diabetes, Hypertension.

Introduction

The ageing process is a biological reality which has its own dynamics, largely beyond human control (WHO, 2019). With advancing age, the lean components, such as total body water, skeletal muscle, organ mass, and bone mineral, tend to decrease, while total body fat increases and becomes redistributed more in the abdominal than in the peripheral adipose tissues (Borkan and Norris, 1977; Forbes and Reina, 1970). Some health and nutritional challenges that the aged face are dental and digestive problems, altered sensations of taste smell, thirst, hunger, and satiety, loss of appetite, chronic diseases, hearing impairment, cardiovascular diseases, reduced immune function and mobility impairment. Loneliness, depression, dependence on care and no support from the healthcare system also hinders the health and nutrition of the aged making them particularly at risk of malnutrition.

Thus, the nutrition and health of the elderly is often neglected and most aged persons in developing countries enter old age after a life of poverty, deprivation, poor access to health care, and a diet inadequate in quality and quantity (Adebusoye, Ajayi and Dairo, 2012). This predisposes them to malnutrition which is an important issue to be considered in the aged. Malnutrition is a great hazard to which the aged appears to be more vulnerable than the younger age groups due to problems relating to ignorance on appropriate food choices, loneliness, social isolation which often times lead to depression, apathy, lack of appetite, physical disabilities, cardiovascular problems and poverty (Afolabi, Olayiwola, Sanni and Oyawoye, 2012). Overnutrition and undernutrition are the types of malnutrition majorly seen among the aged. A major section of the aged population faces the problem of undernutrition, whereas others face overweight and obesity related issues. According to a study done by Afolabi et al. (2018) prevalence of undernutrition was low (2.9%) among the aged in south-western Nigeria, however, overweight (pre-obesity) was high (men 20%; women 22.8%). Many aged people in Nsukka urban are at risk of underweight, obesity and chronic non-communicable diseases such as diabetes mellitus and hypertension as a result of changes in diet and dietary pattern, lifestyle, physical activity and decreased metabolism. Most depends on caregivers for the purchase and preparation of meals and this may affect their nutrient intake. An assessment of nutritional status of the aged is important for the creation of a database to assist with the initiation of important programs and formulation of policies. Unfortunately, there is a dearth of information on the nutritional status of aged in Nsukka urban, Enugu State, Nigeria. It is on this premise that this study was designed.

Objectives of the study: The objective of this study was to assess the nutritional status of the aged ($\geq$60 years) in Nsukka urban, Nsukka Local Government Area, Enugu State, Nigeria. Specifically, the study:

1) assessed anthropometric indices of the respondents;
2) assessed fasting blood glucose level of the respondents;
3) assessed blood pressure of the respondents;
4) assessed nutrient intake of the respondents; and
5) determined malnutrition indicator score of the respondents.

Methodology

***Study design*:** The study adopted a survey design.

***Study area*:** This study was carried out in the urban area of Nsukka located in Enugu state, a south-eastern state in Nigeria. The University of Nigeria, Nsukka is situated in this area. Nsukka lies within the coordinates of 6°24N longitude and 7°23E latitude. Christianity is the major religion while farming, transportation and trading are the major commercial activities. Nsukka urban is made up of three prominent communities: Nkpunanor community, Ihe n' Owere community and Nru community. The aged in Nsukka urban are usually found in their homes with their relatives playing the role of caregivers. It is an urban community where some of the aged who were once civil servants are pensioners who earn retirement benefit and some were never civil servants as a result were not entitled to any retirement benefits.

Population for the study: The study population consisted of male and female aged who were ≥ 60 years of age and resides in Nsukka urban. Some were educated whereas others were uneducated. Prior to the retirement age (60 years), the aged engaged majorly in civil service, trading and farming. The aged in Nsukka urban usually live with caregivers although majority are not disabled and their source of income is from personal occupation (usually for the unemployed), pension and allowance from children.

Sample for the study: Sample size for the study was 354 (138 males and 216 females). Twenty per cent of the sample size (70) was used as sub-sample for fasting blood glucose and weighed food intake.

Multistage sampling technique was used to select the respondents.

Stage one: The three communities (Nkpunanor, Ihe n'Owerre and Nru) in Nsukka urban were selected for the study.

Stage two: Three villages were selected from each community by balloting without replacement.

Stage three: The number of aged in the selected villages was gotten from the representative of the aged in each village.

Stage four: From the total number of subjects in each village, proportionate sampling was used to determine the number of respondents sampled in each village.

Stage five: In each village, one out of every 5 households was selected for the study. In a situation where no aged was seen in the selected household, the next household was used. In a situation where ≥ 2 aged were seen in a household, balloting without replacement was used to identify the respondent to sample.

Instruments for data collection: The following instruments were used for data collection; questionnaire, modified mini-nutritional assessment (MNA) questionnaire, bathroom weighing scale, height metre, measuring tape, M2 basic sphygmomanometer, Accu-check glucometer and kitchen scales (5 kg and 20kg).

A structured questionnaire was developed considering the objectives of the study. It was validated by three lecturers in the Department of Home Science, Nutrition and Dietetics. Information on the demographic data of the respondents their food consumption pattern, family and medical history of diseases, health status and alcohol habits were elicited using the questionnaire. Mini-nutritional assessment questionnaire was used to obtain the malnutrition indicator score of the respondents. The questionnaires were interviewer-administered.

Microtoise height meter calibrated in centimetres was used for height measurement. Hanson bathroom scale calibrated in kilogram with 120kg capacity was used for weight measurement. The waist and hip circumference was measured using a flexible non-stretchable tape calibrated in centimetres. Blood pressure measurement was done using M2 basic automatic sphygmomanometer. Accu-chek glucometer with the measuring range 10-600mg/dl was used for fasting blood glucose measurement. Kitchen scales (5 kg and 20kg) were used for weighing food.

Data collection methods: Anthropometric measurements obtained from the respondents were height, weight, waist circumference and hip circumference measurements.

Height measurement**:** The respondents were asked to stand erect, barefooted on the foot board of the height meter. Their feet were held parallel to each other, their heels, shoulder and back of head held comfortably erect and both arms hanging at their sides in a natural manner. The head piece was lowered, crushing their hair and making contact with the top of their head. The height was read and recorded to the nearest 0.1centimeter according to WHO (2004).

Weight measurement**:** The respondents were asked to stand erect, bare-footed on the centre of the weighing scale without touching anything. Head, back and knees were held comfortably erect. All heavy objects such as necklace, cell phones and bunch of keys were removed. Both arms hung at the side in a natural manner. The weight was read and recorded at the nearest 0.1 kilogram according to WHO (2004).

Body mass index (BMI) of the respondents was calculated as the ratio of weight (in kilogram) to the square of height (in meters) and classified according to WHO (2004).

Waist circumference measurement: The respondents were asked to stand erect, abdominal muscles relaxed, arms at the side and feet together. The flexible non-stretchable tape was placed on the small area below the ribcage and at the level of umbilicus according to WHO (2011). A waist circumference greater than 102cm (40inches) for men and greater than 88cm (35inches) for non-pregnant women indicated abdominal adiposity which is an independent risk factor for disease associated with obesity (WHO, 2011).

Hip circumference measurement: The respondents were asked to stand erect, arms at the sides and feet together. The non-stretchable tape was placed at the point of greatest circumference round the hip region. The tape makes close contact with the body without indenting the soft tissue (leaving a mark on the body). The hip circumference was read and recorded to the nearest 0.1centimeter (WHO, 2011).

Waist-hip ratio (WHR): Waist-hip ratio (WHR) of the respondents was calculated as the ratio of the waist circumference (in centimetre) to the hip circumference (in centimetre) and classified according to WHO (2011) classification.

Blood pressure measurement: Blood pressure recordings were obtained from the left arm of the respondents in a sitting position after 30minutes of rest. The cuff was wrapped above the antecubital fossa of the respondents and was connected to the monitor of the sphygmomanometer. The sphygmomanometer was switched on and this rapidly inflated the cuff pressure above systolic pressure. After some seconds, the sphygmomanometer displayed the systolic and diastolic blood pressure in mmHg. WHO (2005) blood pressure classification was used to categorize the blood pressure of the respondents.

*Fasting blood glucose measurement***:** The fasting blood glucose level of the respondents was measured after 8-10 hours' post-absorptive fast using an Accu-check glucometer. Accu-check active glucose test strip was inserted into the glucometer to automatically turn the glucometer on. Each of the respondent's thumb was cleaned with cotton wool dipped in methylated spirit, pricked with a lancet and massaged so that a small drop of blood was formed. This drop of blood was then applied on the orange-coloured square application area of the test strip after a dropping sign was displayed on the glucometer. The glucometer measured and displayed the level of glucose in the respondent's blood which was then recorded in mg/dL. WHO (2006) fasting blood glucose classification was used to categorize the fasting blood glucose levels of the respondents.

Weighed food intake: A 3-day weighed food intake study of the sub-sample was conducted in their homes. Dietary scales of 5kg and 20kg capacity were used for the exercise. Edible portions of raw ingredients used in preparing meals, empty pots and plates were weighed and recorded. The meals were prepared and the total cooked weight of the dishes recorded. The weight of the meal to be consumed by each respondent was recorded. Actual weight of meal consumed was obtained by subtracting the weight of the plate leftover from weight of the food to be consumed. Food composition tables by Platt (1985) and Food and Agricultural Organization (2012) were used to estimate the nutrient composition of meals consumed by the respondents. From this, their nutrient intake was derived and compared with reference standard.

Data analysis technique: Information obtained from the questionnaire was coded and analysed using the computer software, Statistical Product and Service Solution (IBM -SPSS) for windows, version 20. Data obtained from the questionnaire was analysed using frequencies and percentages. Data obtained from anthropometric indices, fasting blood glucose and blood pressure measurements were presented as means, standard deviation, frequencies and percentages, t-test was used to compare the difference between means of two groups. Chi-square was the inferential statistics used to determine the relationship existing among variables such as: anthropometry, blood pressure and fasting blood glucose at $p < 0.05$ which was considered the level of significance.

Results

Table 1: Mean anthropometric indices, blood pressure and fasting blood glucose level of the respondents by sex

Variables	Male	Female	Group mean	T value	df	P-value
Anthropometric indices						
Height (cm)	157.58±9.31	153.13±8.18	154.87±8.90	4.72	352.00	0.000*
Weight (kg)	61.12±17.72	57.97±13.80	59.20±15.50	1.88	352.00	0.060
Body mass index (kg/m^2)	24.44±5.08	25.55±4.7	25.12±4.91	2.08	352.00	0.004*
Waist circumference(cm)	96.05±7.45	74.14±477	36.33±6.04	21.8	352.00	0.060
Hip circumference(cm)	135.26±8.36	125.11±5.12	36.39±6.62	2.58	352.00	0.001*
Blood pressure (mmHg)						
Systolic	138.39±27.00	156.00±32.98	149.13±32.98	-5.066	352	0.000*
Diastolic	81.07±6.12	80.32±7.01	80.61±6.68	1.031	352	0.303
Fasting blood glucose (mg/dl)	100.14±41.15	00.05±33.59	101.51±38.32	0.010	68	0.992

*=p < 0.05 Mean ± standard deviation

Table 1 shows the mean anthropometric indices, blood pressure and fasting blood glucose level of the respondents by sex. Males had a significantly ($p < 0.05$) higher mean height (157.58 ± 9.31m) than females (153.13 ± 8.18m). Mean body mass index of the females (25.55 ± 4.76kg/m^2) were significantly ($p < 0.05$) higher than that of the males (24.44 ± 5.08kg/m^2). Group mean body mass index, waist circumference and waist-hip ratio were 25.12±4.91kg/m^{2,} 36.33±6.04cm and 1.11±0.08, respectively. Mean systolic blood pressure of the males (138.3 ± 27.00 mmHg) were significantly ($p < 0.05$) lower than that of the females (156.00 ± 34.64 mmHg). Group mean diastolic blood pressure was 80.61 ± 6.68mmHg. Mean fasting blood glucose of male respondents was 100.14±41.15mg/dl whereas that of females was 100.05±33.59mg/dl.

Table 2: Cross-tabulation of Anthropometric Indices, Blood Pressure and Fasting Blood Glucose Level of the Respondents by Sex

Variables	Males F (%)	Female F (%)	Total F (%)
Body Mass Index (kg/m^2)			
Underweight (<18.5)	29(8.19)	11(3.0)	40(11.2)
Normal (18.5-24.9)	49(13.8)	88(24.8)	137(38.6)
Overweight (25.0-29.9)	48(13.5)	54(15.3)	102(29.0)
Mild obesity (30.0-34.9)	6(1.69)	63(17.79)	69(19.5)
Moderate obesity (35.0-29.9)	6(1.69)	0(0.0)	6(1.7)
Total	**138(100.0)**	**216(100.0)**	**354(100.0)**
x^2 = 58.285	df =4	p = 0.000*	
Waist Circumference (cm)			
Normal	138(100.0)	216(100.0)	354(100.0)
	χ^2 = a	df = 4	p = a
Waist-Hip ratio			
Normal	138(100.0)	216(100.0)	354(100.0)
Systolic blood pressure (mmHg)			
Optimal (<120)	48(35.0)	31(14.3)	72 (22.3)
Normal (<130)	24(17.3)	8(3.7)	32(9.0)
High normal (130-139)	12(8.0)	10(4.6)	110(31.0)
Mild hypertension(140-159)	18(13.0)	92(42.5)	22(6.2)
Moderate hypertension(160-179)	30(22.0)	63(29.1)	93(26.2)
Severe hypertension ($\geq$180)	6(4.3)	12(5.5)	18(5.0)
Total	**138 (100.0)**	**216 (100.0)**	**354 (100.0)**
x^2 = 61.112	**df = 5**	**p = 0.000***	
Diastolic blood pressure (mmHg)			
Optimal (<80)	58(42.0)	107 (49.5)	165 (46.6)
Normal (<85)	35(25.3)	53 (24.5)	88 (24.8)
High normal (85-89)	40 (28.9)	42(19.4)	82 (23.1)
Mild hypertension (90-99)	5(3.6)	14 (6.4)	19 (5.3)
Total	**138 (100.0)**	**216 (100.0)**	**354 (100.0)**

	Males	Females	Total
$x^2 = 5.632$ **df = 3** **p = 0.131**			
Fasting blood glucose (mg/dl)			
Normal (79-99)	21 (80.7)	33(75.0)	54 (77.1)
Impaired (100-125)	2(7.6)	5(11.3)	7(10.0)
Diabetes mellitus ($\geq$126)	3(11.5)	6(13.6)	9(12.8)
Total	**26 (100.0)**	**44(100.0)**	**70(100.0)**
$x^2 = 0.347$ **df = 2** **p = 0.841**			

* p = < 0.0.5 a = No statistics were computed because waist circumference (WC) were constant
WC >102cm for men and >88cm for non-pregnant women, indicate abdominal adiposity
Waist-Hip ratio > 0.95 for men and > 0.80 for women indicates android obesity.

Table 2 presents the cross-tabulation of anthropometric indices, blood pressure and fasting blood glucose level of the respondents by sex. Few (11.3%) of the respondents were underweight. Over weight existed more in males (34.7%) than females (25.0%). More females (29.1%) than males (4.3%) were significantly ($p < 0.05$) mildly obese. Overweight, mild and moderate obesity existed in 28.2%, 19.5% and 1.7% of the respondents, respectively. All (100.0%) of the respondents has normal waist circumference and waist-hip ratio. Mild systolic hypertension existed significantly ($p < 0.05$) in more females (42.5%) than males (13.0%). High normal and mild diastolic hypertension existed in 23.1% and 5.3% of the respondents, respectively. Majority (77.1%) of the respondents had normal fasting blood glucose. Diabetes mellitus existed in 11.5% and 13.6% of the males and females, respectively.

Table 3: Mean energy, macronutrients and micronutrients intake of the respondents by sex

Variables	Males	Male RNI	% Contribution to RNI	Females	Female RNI	% Contribution to RNI
Energy(kcal)	2385.06±530.31	264.01	90.31	2343.41±538.35	2294.46	102.14
Protein (g)	49.87±13.61	72.50	68.79	48.92±13.90	51.50	94.98
Fat (g)	78.01±10.91	69.00	113.05	71.58±15.90	53.00	135.05
Carbohydrate (g)	401.50±62.60	398.13	100.90	402.10±65.40	325.00	123.70
Calcium (mg)	398.47±119.44	1150.00	34.65	383.15±114.23	1300.00	29.47
Iron (mg)	38.65±14.62	8.00	483.09	35.72±8.59	8.00	446.53
Vitamin A (μg)	524.76±139.29	600.00	58.31	421.52±164.24	6 00.00	60.22
Vitamin B_1(mg)	1.39±0.89	1.20	115.78	1.65±1.59	1.10	150.37
Vitamin B_2 (mg)	1.32±1.02	1.45	90.83	1.38±1.11	1.20	114.87
Niacin (mg)	24.14±15.00	16.00	150.84	23.91±13.68	14.00	170.76
Vitamin C(mg)	77.41±45.11	45.00	172.02	63.66±44.99	45.00	141.46

Mean $\pm$ standard deviation; RNI from WHO/FAO (2003).

Table 3 shows the mean energy, macronutrients and micronutrients intake of the respondents by sex. Females had greater intake of carbohydrate (402.1±65.4g), vitamin B_1 (1.654±1.59mg) and vitamin B_2 (1.3785±1.11mg) while males had greater intake of energy (2385.06±530.31kcal), protein (49.8733± 13.61g), fat (78.004±10.91g), calcium (398.4667±119.44mg), iron (38.6474± 14.623mg), vitamin A (524.7594±139.29µg), niacin (24.1346±15.00mg) and vitamin C (77.4095±11mg).

Table 4: Malnutrition indicator scores of the respondents

Variables	Male F (%)	Female F (%)	Total F (%)
Screening score			
Malnutrition	65(47.1)	62(28.7)	127(35.9)
Normal	73(52.9)	154(71.3)	227(64.1)
Total	**138(100.0)**	**216(100.0)**	**354(100.0)**
	$x^2 = 12.389$, **df =1, p=0.000***		
Assessment Score			
Malnourished	37(26.8)	18(8.3)	55(15.6)
At risk of malnutrition	28(20.3)	44(20.4)	72(20.4)
Normal nutritional status	73(52.9)	154(71.3)	226(64.0)
Total	**138(100.0)**	**216(100.0)**	**354(100.0)**
	$x^2 = 23.362$, **df =2, p=0.000***		

* = p < 0.05; Screening score (maximum of 14 points): Malnutrition (≤ 11 points); Normal (≥ 12 points) Assessment score (maximum of 16 points): Malnourished (less than 17 points); At risk of malnutrition (17 to 23.5 points); Normal nutritional status (24.0 – 30.0 points)

Table 4 shows the malnutrition indicator score of the respondents. There was a significant ($p < 0.05$) difference in the screening score of the respondents with males (47.1%) being more malnourished than the females (28.7%). Significant ($p < 0.05$) difference in the assessment score of the respondents revealed that females (71.3%) were of normal nutritional status than the males (52.9%).

Discussion of Findings

Diabetes mellitus (DM) is an aetiologically multifactorial metabolic disorder, characterised by chronic hyperglycaemia (Ejike, Uka and Nwachukwu, 2015). Diabetes mellitus escalates the risk of other common aged disorders, such as melancholy, mental dysfunction, chronic ache, adverse falls and urinary incontinences. Prevalence of diabetes and impaired diabetes was high among the respondents and this is different from the findings of Shittu, Kasali, Biliaminu and Odeigah (2017) who reported 4.6% (93.70% for females and 6.30% for males) and 6.0% (85.00% for females and 15.00% for males) prevalence of diabetes and impaired diabetes, respectively. It was also different from the findings of Ejike, Uka and Nwachukwu (2015) which showed that the prevalence of diabetes was 3.0% (3.6% for females and 2.3% for males) and impaired diabetes was 4.1% (5.2% for females and 2.9% for males). The high prevalence of diabetes mellitus among the aged could be as a result of the aging factor (Kalyani and Egan, 2013). It could also be due to decline in physical activity and diet consumption pattern of the aged in Nsukka which consisted mostly of staple foods. Most aged people suffer from diabetes mellitus, but due to poverty and lack of access to adequate health care, several incidents of diabetes are undiagnosed. According to Ronald and Klien (2005) poor glycaemic control is associated with diabetes complications especially microvascular complications.

The anthropometric status of the respondents showed that few of the respondents were underweight, this is similar to the findings of Adebusoye, Ajayi and Dairo (2012) which showed that the prevalence of undernutrition among participants was 7.8%. This could be as a result of malnutrition which is an inevitable side effect of getting old. The elderlies are susceptible to malnutrition because of the changes that their body undergo, such as loss of dentition, wasting and loss of appetite. Over-weight existed more in males than females and this is different from the finding of Vinod and Ashabanu (2018) considering the overweight category females 8.3% were more as compared to males 15.5%. According to Jyväkorpi (2016), overweight or even mild obesity can be shielding for people over 70 years of age. Overweight may keep older persons from loss of weight, bone mass, and death.

Mean systolic and diastolic blood pressure of the subjects were significantly higher in females than males contrary to the findings of Suleiman, Amogu and Ganiyu (2013) who reported high mean systolic and diastolic blood pressure among males (133.3/86.20mmHg) than females (9+8+3127.40mmHg). It is also different from the findings of Ukegbu, Akhimien, Onwubere and Okpechi (2013) who reported that mean systolic blood pressure was significantly higher in men (136.00 ± 24.80 mmHg) than women (130.3 ± 31.2mmHg) in rural areas, men(136.10 ± 21.1mmHg) and women (127.1 ± 17.5mmHg) in urban areas, while for diastolic blood pressure, the difference was only significant in the urban setting for men (77.9 ± 13.8mmHg) than women (74.5 ± 17.5mmHg). The reason for high prevalence of high blood pressure among the aged women compared to that of aged men could be as a result of the loss of oestrogen during menopause which protects the cardiovascular system (Raji, Abiona and Gureje, 2017). This is also similar to the report of Akinlua, Meakin, Umar, and Freemantle (2015) which showed that prior to menopause, the prevalence of high blood pressure was higher in men than women of the same age group.

Dishes consumed by the aged in Nsukka urban were mostly starchy staples and this could be the reason for the low protein intake of the aged males. It is surprising that the nutrient intake of the respondents met the recommendations, however, the bioavailability of these nutrients and retention in the meals are issues to be considered since these are some of the limitations of weighed food intake. Afolabi, Olayiwola, Sanni and Oyawoye (2018) reported that the mean intake of energy (2044 kcal/day), carbohydrate (388.3g), protein (27.7g) and fat (42.2g) for men was significantly ($p < 0.05$) higher than that of the women similar to the findings of this study. Inadequate protein and micronutrient intake may weaken the immune system of the aged and expose them to infections that may reduce absorption of essential nutrients thereby compounding the cycle of under-nutrition and infection. The low calcium intake seen among the respondents is worrisome because these aged are at an increased risk of osteoporosis, a bone disease in which the bones become fragile and can easily break.

Health problems commonly seen among the aged could have contributed to the prevalence of malnutrition and those at risk of malnutrition seen in the study group. Malnutrition in elderly occur when there is lack of stability between nutritional intake and nutritional needs (Adejanju, 2016). Results of this study is similar to the findings of Agarwalla *et al.* (2015) who reported 15% prevalence of malnutrition among the elderly and 55% prevalence at risk of malnutrition. It was, however, different from the findings of Ramya, Ranganath, Jadhav and Swetha (2017) which showed that 21.33% were malnourished while 47.33% were at risk of malnutrition. Malnutrition was more among the males than females which is different from the findings of Ramya *et al.* (2017) who reported that both genders were equally susceptible to malnutrition. The role of women in the society as home makers in most African society and in Nigerian homes where women prepare family foods and are closer to food could explain the lower prevalence of malnutrition in the females than males. The aged frequently suffer from numerous diseases and this could lead to nutrient deficiencies. Nutrient deficiencies may worsen functional degeneration and contribute to additional health decline of the aged.

Conclusion

This study has shown that overweight, obesity, diabetes mellitus and hypertension were prevalent among the respondents. A significant ($p < 0.05$) relationship existed between the sex of the respondents and their BMI and systolic blood pressure with males being more underweight and moderately obese than the females. More females than males were overweight, mildly obese, mildly, moderately and severely hypertensive than the males. Calcium and vitamin A intake of the aged were inadequate. More males than females were malnourished and this differed significantly ($p < 0.05$).

Recommendations

1. The aged and their caregivers should ensure that nutritionally adequate meals are prepared and consumed so as to ensure that they attain and maintain good nutritional status.
2. Nutritionists and Dieticians should provide nutrition education for the aged and their caregivers on the nutrient needs of the aged and on how to achieve adequate nutrition.
3. Periodic assessment of the nutritional status of the aged is needed so as to prevent, detect and manage some of the health and nutrition challenges that the aged face.
4. The Local Government Administration should empower the community health workers, Nutritionists and Dieticians, Home Economists and Extension workers to design intervention programs which would include food demonstration sessions and radio talks in local languages to help solve malnutrition and health problems of the aged in Nsukka urban.
5. Health services should ensure that strategies are in place to address malnutrition in the community.

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JHER Vol. 26 No. 2 December 2019, pp. 102 - 110

Responsibilities, Challenges and Coping mechanisms of Married Individuals in Tertiary Institutions of Odeda Local Government Area, Ogun State

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Abstract

The study investigated the family responsibilities, challenges and the coping strategies among married individuals in two tertiary institutions in Odeda LGA. 204 respondents were randomly selected. Data was collected using questionnaire and interview guide. Data were analysed using descriptive statistics and content analysis. Findings revealed that family responsibilities reported by respondents were basically money oriented. Majority agreed that their jobs affects their family responsibilities. Goal setting, planning, avoiding procrastination among others were ways of coping with family life. Conclusions were made. The study has implication for policy and practice.

Keywords – Family, job, coping factors, relationship, employees,

Introduction

History has shown the significant roles of the family in the society referencing men as the breadwinners providing for family needs and women as homemaker nurturing her members. With industrialization, there is shift resulting in changes in family roles of men and women. Developed countries have emphasized the dual roles of women in economic activity as well as mothering. For instance, Esping-Andersen (2009) noted the fact that women in industrialized world have embraced the job market, thus, increasing their labour force alongside with men. Also, Anyakoha (2015) emphasized the need for family members taking up new responsibilities so as to ensure the effective running of the home due to economic recession. Thus, these new roles of married individuals as male or female seems to be common in developed and developing countries. Female take up economic responsibility while men are more involved in family responsibilities in a way has weakened the family life (Oláh, Kotowska and Richter, 2018).

There are still gaps unbridgeable between mothers and fathers in terms of paid work, housework and child care. Pew Research (2013) found that mothers are still much involved in the care of children and housework than fathers while, men are more involved in paid work than mothers after 5 decades. Slightly more than half of mothers and fathers had difficulty in coping with responsibilities of job and family life. However, 50% of fathers conflicted about time spent with their children when compared to 68% of mothers saying they spend the right amount of time with their children. With regards to time, women in dual family earners are more devoted and committed to childcare and housework than paid work while fathers are more devoted to their work than care of children and housework. This is an indication that traditional family responsibilities may not be eroded with civilization or gender policy.

In the African society the stay-at-home-norm engage women in unpaid domestic duties which seems to have reduced drastically. Family responsibilities cannot exist outside challenges. For instance, the running of a home is geared towards a healthy functioning of the family while at the same time promoting women in different careers related to the well-being of the family (Anyakoha, 2015; Albert, 2017). Often times, research has shown that spill over of daily work schedule can affect the family life (Vergel, 2016). St-Amour et al, (2007), described the forms of conflict that may arise due to the different roles expectations – time, behavioural and tension. Fatoki and Kobiowu (2015) found that women in career complained of childbirth, care giving, house chores giving, house chores, and family obligations affect their progress. This implies that women in paid job and other responsibilities outside the home may suffer setback if they cannot cope with dual responsibilities.

Family-work conflict negatively affected work performance and positively related to work withdrawal (Frone, Yardley, & Markel, 1997; MacEwen & Barling, 1994 in Perry-Jenkins, Repetti, and Crouter, 2000). Major reasons for dissatisfaction both in family and life domains include lack of time, spending too much time on job or main activity and not having enough time for other activities. But constraint factors encouraging dissatisfaction were found to be absent of spouses, taking care of relatives and age of children Statistics Canada (2012). Factors promoting satisfaction includes flexible work schedule through organizational policies, sex and location across the two domains. However, time was a major factor in that study to determine relationship and the satisfaction derived in both domains. The new role performed by men in chores is determined by their educational level, traditional breadwinner roles, working conditions. According to Oláh, Kotowska, and Richter (2018) there is still barrier to doing of house chores in many countries with more traditional roles.

Previous research has established the fact that different strategies were found to be helpful in these domains. Hadden and Hede (2010) carried out a qualitative study on the work-relationship towards effective strategies found out that boundary-spanning strategies which involved the organization, family and individual to include boundary management, technology, leisure activities, support, flexibility, cognitive and behavioural strategies are means of reducing family/work demands. Similarly, Seeley (2015) found that strategies that contributed to the domains of family and work life by couples include proactively structuring opportunities for time with family, accessing familial and paid support, shared planning and organization, control one's schedule, living within means, creating opportunities for alone time, work validation and satisfaction, to transition between work and family domains. Fatoki and Kobiowu (2015) reported the measures of coping with family and academic role of women to include having a supportive husband in order to address job requirements for their progress as well as assisting in carrying out house chores.

Working in government organization seems no to pose a threat to the family. Studies have been carried out on married women academics while the married non-academic individuals whether male or female seems to be lacking in research. Thus, this study sought to bridge the gap related to the family life of married non-academics. The main purpose of this study is to assess family responsibilities, job challenges and coping strategies among married individuals in tertiary institutions in Odeda Area Local government area of Ogun State, Nigeria.

Objectives of the study

The broad objective of the study was investigated family-work relationship challenges and coping strategies among women and men in the tertiary institutions in Odeda Local Government area of Ogun State. Specifically, the study determined:

1. the responsibilities performed by respondents in the homes
2. challenges respondents encounter in carrying out their responsibilities
3. ways respondents cope with their family responsibilities

Research questions

1. What are the responsibilities performed by respondents in the homes?
2. What are the challenges respondents encounter in carrying out their responsibilities?
3. What are the ways respondents cope with their responsibilities?

Methodology

***Design of the Study*:** The study adopted a descriptive survey design to assess the family-work relationship among married men and women in the tertiary institutions in Odeda Local government Area LGA of Ogun State.

***Area of the Study*:** The study was conducted in (LGA) of Ogun State. There are two tertiary institutions in the LGA - Federal College of Education Abeokuta (FCEA) and Federal University of Agriculture, Abeokuta (FUNAAB). FCEA was established in 1976 and it is the first tertiary institution in Ogun State. It has four schools and 10 departments (https://fce-cedep.com/home-page/). FUNAAB was established in January 1988 with tripod mandate of teaching, research and extension services. It is one of the three Universities of Agriculture in Nigeria. It has ten colleges (https://unaab.edu.ng/). The choice of the institutions is the fact that married individuals make up the larger percentages of staff.

***Population of the Study*:** The population of the study consists of men and women who are married and working as non-academic staff in the two tertiary institutions of Odeda LGA.

***Sample for the Study*:** Random sampling technique was used to draw 204 respondents for the study. The selection criteria for choosing a man or woman as a respondent must be that either is married for at least 3 years with 2 years working experience in the institution.

***Instrument for Data Collection*:** A structured questionnaire was developed which adapted family-work relationship scale tagged FWBAMWM. The questionnaire contained three sections. Section A focused on family responsibilities; Section B elicited information on challenges in carrying out responsibilities; and Section C focused on the ways of coping. Sections A and C employed always, occasionally and never as the rating scale and scored 3, 2, and 1 respectively while five-point Likert scale of strongly agree, agree, disagree, strongly disagree and never which was scored 0, 3, 2, 1, and 0 respectively for Section B. The benchmark for agreeing or disagreeing to a statement was 1.5 for family response-bilities and coping skills, and 2.0 for challenges.

***Data Collection Method*:** Two hundred and twenty (220) copies of questionnaire were distributed to the married individuals by 3 research assistants. Efforts were made to ensure that the items were filled correctly without omitting any of the needed information. Two hundred and four (204) of the distributed questionnaires were returned showing 96% return rate. The interview schedule was based on consent approval of the respondents and was guided by the research questions. The researchers took notes and comments.

***Data Analysis Technique*:** The data obtained were subjected to statistical analysis such as frequencies, percentages, mean, standard deviation (SD).

Results

Demographic characteristics of Respondents

About half of the respondents were male (51%). The mean age of the respondents was 42 years. One quarter of the respondents had Master's degree and two third of the respondents were responsible for the care of relatives. It is interesting to note that some of the respondents were single (10%). However, only 4% of respondents do not have any child and majority (74%) had under 18 children.

Table 1: Mean Responses on Married Individuals Family Responsibilities

S/N	Family Responsibilities	$\bar{x}$	SD	Remarks
1.	Provide money for the family needs	1.63	0.54	Agreed
2.	Financing of children education	1.56	0.62	Agreed
3.	Buying of food stuffs	1.54	0.63	Agreed
4.	Responsible for other family project	1.43	0.64	Disagreed
5.	Cleaning the house	1.41	0.65	Disagreed
6.	Cooking of meals	1.40	0.70	Disagreed
7.	Washing of cloths	1.31	0.68	Disagreed
8.	Building project	1.30	0.64	Disagreed
9.	Dressing the children	1.29	0.69	Disagreed
10.	Feeding Children	1.28	0.71	Disagreed
11.	Carrying of pregnancy	0.78	0.76	Disagreed

$\bar{x}$ - Mean SD –Standard Deviation

Table 1 above shows that only three items out of the 11 items listed as family responsibilities were agreed upon. Item 1 (provide money for the family needs) had the highest mean value (1.63, SD=0.54), followed by item 2 (Financing of children education, mean =1.56, SD =0.62 and buying of food stuffs (Mean =1.54, SD=0.63). This is because all these items had mean score of 1.5 and above. This indicated that respondents' family responsibilities majorly were centred mainly on basic necessity of life such as money, food and education. Findings from the interview schedule revealed the following to be the family responsibilities take on by respondents:

- Help in finance
- Work hand in hand with spouse to take care of children
- Pay school fees
- Cooking
- Washing of cloths
- Taking care of wives, husbands and children

Table 2: Mean Responses on Challenges encountered by respondents in carrying out their family responsibilities

S/N	Challenges encountered	$\bar{x}$	SD	Remarks
1	My job makes it difficult to become the kind of spouse or parent I would like to be	2.07	0.901	Agreed
2	My job produces strain that makes it difficult to fulfil my family obligations	2.03	0.890	Agreed
3	The amount of time my job takes up makes it difficult to fulfil family responsibilities	1.96	0.893	Disagreed
4	My work schedule conflicts with my family life	1.93	0.930	Disagreed
5	Because my work is so demanding, at times I am irritable at home	1.93	0.886	Disagreed
6	My work takes up time that I would like to spend with my family	1.80	0.928	Disagreed
7	I always have spill over of work undone every day	1.78	0.913	Disagreed
8	The demands of my job make it difficult to be relaxed at all the time at home	1.77	0.926	Disagreed
9	My family dislikes how often I am preoccupied with my work while at home	1.73	0.875	Disagreed
10	Due to work-related duties, I frequently have to make changes to my family plan	1.71	0.901	Disagreed
11	On the job, I have so much work to do that it takes away from my personal interest	1.58	0.895	Disagreed
12	After work, I come home too tired to do some things that I would like to do	1.40	0.886	Disagreed
13	Often times than not, I focus on work during working hours and also think about it when I'm at home	1.28	0.886	Disagreed

Table 2 shows that two out of the 13 items were agreed upon as challenges faced by the married individuals in discharging their family responsibilities. This indicates that job was a major challenge in the discharging family responsibilities. Findings from the interview schedule reveal the following to be the challenges faced by respondents in discharging their family responsibilities:

- money
- time
- stress

Table 3: Mean Responses on the Respondent Ways of Coping with their Family Responsibilities

S/N	Challenges	$\bar{x}$	SD	Remarks
1	I set realistic goals for myself	1.88	0.32	Accepted
2	I organise my day and prioritise how best to accomplish task	1.85	0.40	Accepted
3	I sort out priorities with my marriage being the most important	1.81	0.43	Accepted
4	My spouse is supportive when it comes to house chores	1.69	0.53	Accepted
5	I share house chores among my children	1.43	0.74	Not Accepted

Table 3 shows the ways respondents accepted in coping with family responsibilities. The results from the above show that four out of the five items were accepted by respondents as ways of coping with family responsibilities. Their means values ranged from 1.69 to 1.88. Standard deviation were within the ranges of 0.32 to 0.53. Findings from the interview schedule reveal the following to be the family responsibilities take on by respondents:

- planning
- supportive spouse
- wake up early
- time management
- plan each day activity

Discussion

From the analysis, the findings revealed that the major family responsibility is related to money. Majority of respondents emphasized that they provide financially for the family in order to take care of family needs, educate children and buy food in the house. This shows that family responsibilities may not be carried out without finance and both male and female are involve. Anyakoha (2015) emphasized the need for family members taking up new responsibilities so as to ensure the effective running of the home due to economic recession. Thus, it indicates that the source of livelihood is important to sustain the family well-being. Meeting physiological as identified by Maslow requires money. Aruma and Hanachor (2017) stated that human physiological needs such as shelter, food, education and clothing ranked highest in scale of preference. This is in line with the findings of the study as seen in Table 1 that respondents take more responsibilities on providing money, financing education of their children and buying food.

Furthermore, while the care of children is no longer depending on the mother figure alone, the interview revealed that women still take care of children and do the house chores. This result is in agreement to the findings of Pew Research (2013) findings that showed that despite the fact that roles have converged, there are still gaps in the responsibility of men and women and mothers are still much involved in the care of children and housework than fathers. This implies that married individual whether men or women still cannot cope with some responsibilities. The interview shows that some men still see domestic chores as women's responsibilities coupled with the time consumption allocated to such responsibility could require extra energy. It means that majority of married individual still do not have the ability to maintain a wide spread out of energy and effort to all the domains of life (Shivakumar, 2011).

Inferring from Table 2, this study found that job was a major challenge affecting married individuals in discharging their family responsibilities. Job responsibilities make family obligations difficult for married individuals. From the interview for the study, women especially identified time as a major challenge in achieving and performing their roles in the family especially when there is need to care for the husband and at the same time the job seems to be at stake. The findings indicate that the non-availability of women to take care of their family can result in dissatisfaction and conflicts in role expectations may set in. This supports the findings of Statistics Canada (2012) that the lack of time and spending too much time on job or main activity and not having enough time for other activities can cause conflict. St-Amour et al, (2007) also attest to the fact that time and tensional conflict may arise due to the different roles expectations. This implies that married individual desire to meet up with their different roles expectations as a wife or husband in the family, and/or as an employer which is often than none, not always realistic.

Interestingly, the major ways of coping identified to be acceptable are setting realistic goals, organise and plan each activity, sort out priorities and having supportive spouse in house chores. This means that when married individuals have their own goals and prioritize their activities, it goes a long way to take up both family and job responsibilities simultaneously. This shows the personal measures or strategies of coping with family responsibilities. The ability of an individual to personally work out means of attaining relationship in their daily life is a proactive decision making.

On the other hand, the external coping factors are those factors that are within the environment of the married individual. These external factors such as spouses, children and relatives provide support to the married individuals. Spouse play significant role in assisting their wives (Fatoki and Kobiowu, 2015). Consequently, coping strategy was evident as means of living a fulfilled life among married individuals. This finding corroborate the study of Haddon and Hede (2010) and Seleeby (2015) in search of effective strategies among different professionals that as they discovered proactive, adaptive, technological, support and leisure factors as means of coping among the population studies. Seleeby (2015) further stressed couples proactively structured opportunities for time with family, accessed familial and paid support, shared planning and organization, control their schedule, lived within means, created opportunities for alone time, work validation and satisfaction, to transition between work and family domains.

In fact, with supportive spouses and children, married men and women can cope with family and work responsibilities. Supportive spouses have been found to relieve their partner and bring satisfaction Spouses Pew Research (2013) found out that the absence of spouse is associated with lower satisfaction and may cause poor family-work relationship. Supportive spouses make family obligations stress-free. This findings also agrees with Fatoki and Kobiowu (2015) who reported the measures of coping with family and academic role of women to include having a supportive husband in order to address job requirements for their progress as well as assisting in carrying out house chores. This implies that the dual role of married individual requires planning as well as supportive spouses.

Conclusion

The present study reveals that married individuals are dual earners couples sustaining the family through their paid jobs. The traditional system of male figure is still predominant in the Nigeria society where men majorly focus on work and breadwinner role. However, women are able to practice dual roles of being a breadwinner and at the same time home keeper. Women are still much involved in child care and house chores at the same time. The challenges faced by respondents is discharging their family responsibilities was majorly associated with job. However, the different coping mechanisms such as settings goals, planning and having supportive spouses can help married cope with the responsibilities of family life and its responsibilities. External factors such as supportive spouses can provide human and economic resources for the effective functioning and running of the family. From this study it is established that no longer do women play only homemaker role, but also the economic role.

Recommendations

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

- Organise trainings on how to reduce stress and other challenges of family life should be considered intermittently among married people in institutional settings.
- Men and women should be provided with flexibility in schedule of work to attend to urgent family needs
- Provide paternal leave so as to encourage more
- Men should encourage women always by supporting them at home and work place.
- Family policies that support the home front
- There is need for married men to also adjust to the role of home making

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JHER Vol. 26 No. 2 December 2019, pp. 111 - 118

Strategies for Promoting Lifelong Education among Adult Learners in Anambra State of Nigeria

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Abstract

The general purpose of the study was to evolve the strategies for promoting lifelong learning among adult learners in Anambra State. Specifically the study determined learners, facilitators and curriculum-related strategies for promoting lifelong learning among adult learners in Anambra State. It adopted descriptive survey research design. The population of the study was 4, 376 adult learners from 23 adult literacy centres in Anambra State. The sample size was 438 adult learners. Questionnaire was used for data collection. Data were anlaysed using mean and standard deviation. Findings reveal eight (8) learners-related, seven (7) facilitators- related and eight (8) curriculum- related strategies were needed for the promotion of lifelong learning among adults in Anambra State.

Keywords: Strategies, Lifelong, Learning, Education, Adults, Learners

Introduction

Education lays the foundation for individual and societal development. According to Denga (2005), education is the process by which every society tries to preserve and promote the stored knowledge, skills and attitude in its cultural settings and heritage in order to foster endless wellbeing of mankind. It is a process of acculturation through which an individual is helped to attain the development of his/her potentialities and their maximum activation when necessary according to right reason and to achieve his/her perfect self-fulfillment (Ogbonna, 2011). The acquisition of knowledge to a reasonable extent demands continuous learning which gives people the opportunity to go beyond the classroom. This kind of learning forms the basis of lifelong learning.

Lifelong learning which is interchangeably used as lifelong education is a continuous education and training that enables one to continually adjust to lifetime changes and challenges. It is all about acquiring and updating all kinds of abilities, interests, knowledge, and qualifications from the preschool years to post retirement that will enable adaptation to the knowledge-based society (Soni, 2012)). Thus, lifelong education is the acquisition of skills from the cradle to the grave for the effective functioning in the society. Nzeneri (2010) shares similar view of this learning when he explains that it involves all experiences individuals acquire during lifelong learning process that liberate them from constraints, depression, ignorance, and exploitation. This form of education encompasses all forms of learning such as formal, informal, and non-formal.

The various forms in the acquisition of knowledge suggest that lifelong learning is central to addressing the day to day challenges of the individuals while striving to survive in a constantly changing milieu. Thus, for individuals, (adult learners) to survive, and function effectively, they need to engage in lifelong learning which must be qualitative. A quality education is that which provides all learners with capabilities required to become economically productive, develop sustainable livelihoods, contribute to peaceful and democratic societies as well as enhance individual's well-being (Tikly & Barrette, 2007).

The above education is precipitated on four pillars: learning to be, learning to do, learning to know and learning to live together. While addressing these pillars, adult learning is seen as having broader social purpose capable of contributing to the implementation of the sustainable development goals (SDGs). By this, learners are said to be part of a learning community; active and creative explorer of the world; a reflexive agent; a self-actualizing agent and an integrator of learning' (Medel-Anonuevo, Ohsako & Mauch in Blewitt, 2005:26). These features require some strategies which are but not limited to learner, facilitator and curriculum related strategies.

Learner related strategies are ingredients needed for active participation of learners in learning activities. They are self-directed learning processes by which people identify their learning needs, set goals, choose how to learn, gather materials, and evaluate their progress (Mezirow as cited in Rubenson, 2011). Thus, for learners to be self-directed and assume responsibility, they need to be involved in planning and organizing the learning task, evaluating its worth and constructing meaning from it. A worthwhile evaluation could be achieved through the leading role of the facilitator. These facilitators' attributes are embedded on facilitator related strategies.

Facilitators related strategies are those features that are possessed by the facilitator for effective teaching and learning. However, Olori (2015) observed that one of the challenges in the delivery of adult literacy is the use of unqualified facilitators. Thus, a qualified facilitator is one who guides, facilitates and moderates every learning activity. Coolahan (2002) explains that other attributes require becoming an agent of change and promoting understanding and tolerance. This is made possible through the application of various teaching methods in order to make learning participatory. The existence of cordial relationship between the facilitator and learners is to further help in the development of learner-centred curriculum.

Curriculum is basically a plan made for guiding learning through which the vision of the planners is translated into learning experiences for the learner. The Indiana Department of Adult Education (2010) defines curriculum as planned interaction of learners with instructional content, materials, resources, and processes for evaluating the attainment of educational objectives. It is an interactive process developed among learners, teachers, materials, and the environment (Chen, 2007). Thus, curriculum functions as a guide for teaching and for learners' to have further improvement. Unlike the conventional school system where it is fixed, in adult education programmes, it is flexible. Thus, a change in the needs and aspirations of the society call for changes in the curriculum (Mbah, 2015).

The application of the above strategies to lifelong learning obviously will help in the achievement of quality education. However, in Anambra State which is one of the states in South East, learners are rarely incorporated into designing the contents of what to learn. This in most cases has resulted to their withdrawal in the programme. More so, the use of unqualified facilitators seems to disseminate wrong information or wrong use of methodology in teaching. This is why Nwabuko (2014) identifies uncoordinated programme implementation, and unqualified personnel as some of the inhibiting factors facing adult education programmes. In addition, Seya as cited in Akpala (2013) observed that the objectives of adult education are not achievable in an environment where majority of the nation's population especially the adults who are in the production sectors of the economy are illiterates. Therefore, the study seeks to find out the strategies for promoting lifelong learning among adult learners in Anambra State.

Purpose of the Study

The general purpose of the study was to evolve strategies for promoting lifelong learning among adult learners in Anambra State. Specifically, the study determined:

1. learner related strategies for promoting lifelong learning among adult learners in Anambra State.
2. teacher/facilitator related strategies for promoting lifelong learning among adult learners in Anambra State.
3. curriculum related strategies for promoting lifelong learning among adult learners in Anambra State.

Research Questions

The following research questions guided the study:

1. What are the learner related strategies for promoting lifelong learning among adult learners in Anambra State?
2. What are the facilitators' related strategies for promoting lifelong learning among adult learners in Anambra State?
3. What are the curriculum related strategies for promoting lifelong learning among adult learners in Anambra State?

Methodology

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

Area of the Study: The study was carried out in Anambra State. There are 23 adult learning centres in the state.

Population of the Study: The population of the study was 4,376 adult learners from the 23-adult learning centres in Anambra State.

Sample for the Study: The sample size of the study was 438 learners which is 10% of the entire population. The sample was drawn using first purposive technique to select centres and random technique to select the learners.

Instrument for Data Collection: Instrument for data collection was questionnaire. It had two sections, A and B. Section A focused information on the personal data of the respondents with three items. Section B contained 30 items in three sections addressing learners' related strategies, facilitators related strategies and curriculum related strategies. The items were designed on a four-point rating scale of strongly agree, agree, disagree and strongly disagree on assigned numerical values 4,3, 2, and 1. Instrument was based on the specific purposes of the study. It was subjected to face validation by three experts.

***Data collection Method*:** Four hundred and thirty eight (438) copies of the questionnaire were administered by hand at the selected centres. Only 405 copies were retrieved. This represents 92.47% percentage return.

***Data analysis technique*:** Data collected from the respondents were analysed using mean and standard deviation. The criterion mean of 2.50 was used for decision making. Items with mean score of 2.50 and above ($\bar{X} \geq 2.50$) were regarded as agree, while below 2.50 was disagree.

Results

Table 1: Mean and Standard Deviation of Responses on Learners related Strategies for the Promotion of Lifelong Learning among Adult Learners (n = 405)

S/N	Learner-related Strategies	Mean	SD	Remarks
1	Engaging in self-regulated learning	3.27	0.48	Agree
2	Relating new learning skills with previous experience	3.59	0.56	Agree
3	Appreciation of learners present state	3.25	0.53	Agree
4	Encouraging learning by doing	3.17	0.43	Agree
5	Engaging in self-directive learning	3.28	0.52	Agree
6	Having immediate application of what is learnt	3.03	0.85	Agree
7	Involving in setting up learning content	3.23	0.47	Agree
8	Respect for readiness to learn	3.37	0.50	Agree
9	Functioning in socially	1.81	0.50	Disagree
10	Acting autonomous using tools interactively	2.18	0.79	Disagree
	Cluster mean	**3.02**	**0.56**	**Agree**

Table 1 shows the mean and standard deviation of adult learners on learner related strategies for the promotion of lifelong learning in among adult learners in Anambra State. Respondents had as agree the mean scores for items 1, 2, 3, 4, 5, 6, 7, and 8 as 3.27, 3.59, 3.25, 3.17, 3.28, 3.03, 3.23 and 3.37 with corresponding standard deviation of 0.48, 0.56, 0.53, 0.43, 0.52, 0.85, 0.47 and 0.50. However, items 9 and 10 had mean scores of 1.81 and 2.18 as disagree with standard deviation of 0.50 and 0.79. The Table had the cluster mean (3.02) of agree and a standard deviation of 0.56. Since the cluster mean of 3.02 was above the criterion mean of 2.50, it implies that there were various learners related strategies among which were relating new learning skills with previous experience, engaging in self-regulated learning, self-directive learning, and respect for readiness to learn are involved in the promotion of lifelong learning among adult learners in Anambra State.

Table 2: Mean and Standard Deviation of Responses on Facilitators-related Strategies for the Promotion of Lifelong Learning among Adult Learners (n=405)

S/N	Facilitators-related Strategies	Mean	SD	Remarks
1	Creating conducive adult learning environment	3.57	0.59	Agree
2	Providing material resources for effective learning	3.27	0.49	Agree
3	Planning the sequence of learning needs of adult	1.84	0.51	Disagree
4	Diagnosing the needs for particular learning	2.22	0.82	Disagree
5	Utilizing appropriate teaching method for a given topic	3.58	0.57	Agree
6	Creating the culture of respect to learners	3.17	0.42	Agree
7	Engaging learners in problem-solving	3.30	0.54	Agree
8	Involving learners in developing content	3.01	0.86	Agree
9	Creating a culture of authenticity	3.01	0.86	Agree
10	Enlightening learners on subject matter	2.37	0.51	Disagree
	Cluster mean	**2.93**	**0.62**	**Agree**

Table 2 indicates the mean and standard deviation of learners on facilitators related strategies for the promotion of lifelong learning among adult learners in Anambra State. The Table reveals that respondents had agree for items 1, 2, 5, 6, 7, 8 and 9 with mean scores above the criterion mean of 2.50, while their standard deviation ranged from 0.42-0.86. Items 3, 4 and 10 however had mean scores below 2.50 and were classified as disagree with standard deviation of 0.51, 0.82 and 0.51. The Table further had the cluster mean (2.93) of agree with a standard deviation of 0.62. Since the cluster mean (2.93) was above the criterion mean of 2.50, it means that the provision of conducive adult learning environment, utilization of appropriate teaching methods and the engagement of learners in problem solving were some of the facilitators related strategies for the promotion of lifelong learning among adult learners in Anambra State.

Table 3: Mean and Standard Deviation of Responses on Curriculum-related Strategies for Promotion of Lifelong Learning among Adult Learners (n = 405)

S/N	Curriculum-related Strategies	Mean	SD	Remarks
1	Flexibility in meeting learners need	3.56	0.51	Agree
2	Encouraging independent learning	3.17	0.42	Agree
3	Providing variety in styles of delivery	2.99	0.85	Agree
4	Applying instructional aids to facilitate learning	3.23	0.60	Agree
5	Using of right evaluation guide	3.23	0.46	Agree
6	Encouraging a two-way communication between the facilitator and learner	3.38	0.50	Agree
7	Developing a creativity skill	2.08	0.87	Disagree
8	Encouraging immediate application of taught subject	1.80	0.50	Disagree
9	Relating new knowledge to past experience	3.38	0.50	Agree
10	Promoting corroborative enquiry	3.01	0.86	Agree
	Cluster mean	**2.98**	**0.61**	**Agree**

Table 3 shows the mean and standard deviation of respondents on curriculum related strategies for the promotion of lifelong learning among adult learners in Anambra State. The Table indicates agree for items 1, 2, 3, 4, 5, 6, 9 and 10 with mean scores of 3.56, 3.17, 2.99, 3.23, 3.23, 3.38, 3.38 and 3.01, and with standard deviation ranging from 0.42 to 0.87. Items 7 and 8 however had the mean scores of disagree as 2.08 and 1.80 with standard deviation of 0.87 and 0.50. The Table further had the cluster mean (2.98) of agree with standard deviation of 0.61. Since the cluster mean was above the criterion mean of 2.50, it shows that flexibility in meeting learners need, encouraging a two-way communication between the facilitator and learners as well as relating new knowledge to past experience were some of the curriculum related strategies involved in the promotion of lifelong learning among adult learners in Anambra State.

Discussion of Results

Findings from research question one showed that there are various learner related strategies needed for the promotion of lifelong learning among adult learners in Anambra State. Respondents indicated that some of these strategies were relating new learning skills with previous experience and respect for readiness to learn. This finding agrees with the view of Mbah (2015) who submitted that changes in the needs and aspirations of the society call for changes in the curriculum. It is these changes that informed the incorporation of learners in participating in designing what they intend to learn *vis a vis* engaging them in lifelong learning. By building self-confidence, learners see themselves as capable of acquiring new skills and knowledge.

The active involvement of learners is buttressed by Medel-Anonuevo, Olsako and Mauch as cited in Blewitt (2005) that an adult learner a self-actualising agent and an integrator of learning. Self-actualising agent encompasses engaging in a self-directive learning of the adult learner. It is also one of the strategies required for the promotion of lifelong learning as Mezirow (1997) rightly observed that the learners identify their learning needs, set goals, choose how to learn and evaluate their progress.

Findings from research question two showed that there are various facilitators related strategies required for the promotion of lifelong learning among adults in Anambra State. Respondents indicated that the utilization of appropriate teaching method to a given topic and creation of conducive adults learning environment were some of the strategies. The right choice of method is predicated by the knowledge of the facilitator as Olori (2015) rightly observed that one of the challenges facing the effective delivery of adult literacy in Nigeria is the use of unqualified facilitators.

Furthermore, the existence of cordial relationship between the facilitator and learners is manifested in the provision of material resources by the facilitators for effective learning. This is true as the relationship stirs cooperative participation of all in the learning activities. By promoting a two-way communication between the facilitator and learners, effective learning is said to have taken place. Hence, Coolahan (2002) saw the facilitator as one who facilities, guides and moderates every learning activity. This learning encourages the engagement of learners in problem solving skills, and creation of a culture of authenticity which are identified as facilitators-related strategies for the promotion of lifelong learning.

Findings from research question three identified various curriculum related strategies for the promotion of lifelong learning among adults in Anambra State. Respondents noted that prominent among these strategies were the flexibility of the curriculum in meeting the needs of learners and the use of instructional aid to facilitate learning. The finding is supported by the assertion of Mbah (2015) that changes in the needs and aspirations of the society call for changes in the curriculum. The flexibility of the content is premised on the fact that unlike the conventional system of education where rigidity is maintained, learners are seen as key players to the learning activities. This is why the Indiana Department of Adult Education (2010) saw curriculum as planned interaction of learners with instructional content, materials and processes for evaluating the attainment of educational objectives.

The application of instructional aid to facilitate learning, the use of right evaluation guide is based on the fact that a conducive learning environment is that environment which is devoid of distraction, but promotes active participation of both the learners and facilitators. This will further encourage the inquisitiveness of learning in undergoing learning activities which is the idea of lifelong learning. This idea corroborates with Chen (2007) who saw curriculum as an interactive process developed among learners, teachers, materials and the environment.

Conclusion

The study concluded by identifying some of the strategies for the promotion of lifelong learning among adult learners in Anambra State. These strategies were further classified as learners, facilitators and curriculum related. Relating new skills with previous experience and respect for readiness to learn were associated with learners related, while the effective use of teaching method and creation of conducive learning environment were facilitators related. Curriculum related was evident on the flexibility of learning need and the promotion of a two-way communication between the facilitator and learners.

Recommendations

The following recommendations were made based on the finding of the study.

1. Policy makers should ensure representation of adult learners in developing learning contents to encourage participation in learning activities.
2 Facilitators should be exposed to further training especially in the use of various teaching methods to promote cooperative learning.
3 Government through the state agency for mass education should provide instructional materials to adult learning centres to promote effective teaching and learning.

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JHER Vol. 26 No. 2 December 2019, pp. 119 - 127

Perceptions of Premarital Genotype Screening among Youths in Ikorodu Local Government, Lagos State

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Abstract

This study focused on perceptions of premarital genotype screening among youths in Ikorodu Local Government Area (LGA), Lagos State. Descriptive survey research design was used. Population is made up of youths in area of study. Sample of 400 (188 males and 202 females) respondents was used. Questionnaire with a reliability coefficient of 0.87 was used for data collection. Data were analysed using frequencies and percentages. Findings, among others, reveal that: 88.5% of the respondents have knowledge of genotype, 97.3.0% knew that genotype is inherited from parents and 99.0% agreed that sickle cell genes (SS) are inherited from parents. Also, 91.0% of respondents agreed that genotype screening before marriage is necessary, 93.0% indicated that their fiancé/fiancée must be screened before marriage, and 98.0% stated that screening before marriage will prevent sickle cell disease. It is recommended among others that government and religious institutions should make premarital genotype screening/testing compulsory; genotype and other related hereditary issues should be built into school curriculum.

Keywords: Premarital, Screening, Genotype, Sickle Cell, Youth,

Introduction

Marriage is a socio-cultural union of a man and a woman or women. Marriage can be contracted in accordance with traditional, religious and legal laid down rules and regulations. It is a legally recognized union between a man and a woman in which both are united sexually, cooperate economically, and may give birth to, adopt, or rear children (Strong, DeVault and Cohen 2005). Over the years, many marriages have been contracted without ascertaining the health status of the spouses, even though they often look forward having healthy child or children, when this occurs children could be born with congenital, genetic or infectious diseases. One of genetically inherited diseases is sickle cell anaemia or sickle haemoglobin (HbS) resulting from parents' genotypes. Genotype according to Park (2011) is the total genetic constitution of an individual. The genotypes inherited from both parents present in an individual can be any of the following; AA or HbAA, which is the normal haemoglobin genotype in the red blood cells of a person, AS or HbAS, is a carrier of sickle cell with one normal and one abnormal gene (sickle cell trait), SS or HbSS or SC or HbSC are abnormal haemoglobin genotypes in the red cells of a person. When a person inherits sickle gene "SS"/"HbSS" or SC/ HbSC (sickle cell haemoglobin C) from both parents, the individual suffers from sickle cell disorder. "SC" is a generally less serious and less common type of sickle cell disorder, (Ciesla, 2007).

Sickle cell disease is a genetic defect that is associated with genotype is a recessive hereditary disorder characterized by erythrocytes that contain sickled haemoglobin, (Anunobi, 2014). According to Adegoke, Adeolu and Adekile, (2015), Powars, Chan, Hiti, Ramicone and Johnson (2005), Mgbor and Emodi, (2004) sickle cell disorder is associated with a lifelong severe morbidity that often require prolong hospital admission, disabilities, foot ulcers and infections. Couples whose genotypes are HbAS have one-fourth chance of producing a baby with HbSS genotype (Igbeneghu, Olisekodiaka, Akinsehinwa & Okanlawon, 2017).

Sickle cell disease affects 20-25 million people globally and 50% of infants born with the disease die before the age of five years (Aygun & Odame, 2012). Piel (2015) reported that 305, 800 babies were born with sickle cell throughout the world in 2010, and there is an estimated increase of this number by 32% or 404,200 in 2050. World Health Organization (2006) showed that 5% of the world population are carriers of genes responsible for haemoglobinopathy and Nigeria is the highest carrier with about 24% of the population are carriers and about 2% or 150,000 of the total population children are born with sickle cell disease annually. Egbochukwu and Imogie (2002) equally stated that Nigeria has the highest number of sickle cell diseases in the world with prevalence of 10 persons with sickle cell disease per 1000 population. Furthermore, Sickle Cell Aid Foundation (SCAF) (2014) reported that Nigeria is among the highest carrier of sickle cell anaemia in the world with more than 100,000 children born each year with the disorder. Piel, Hay, Gupta, Weatherall and Williams, (2013) report showed that out of three countries (Nigeria, Democratic Republic of Congo (DRC) and India that accounted 57% of the global total of new birth sickle cell anaemia but the contribution of the other countries are projected to decrease by 2050 while Nigeria is projected to increase from 30% to 35%.

A sickle cell anemia person or child is characterised with frequent illnesses and hospitalization and these pose finance and emotional stress and pressure on the family. Sickle cell disease and its grave consequence can be averted if people are exposed to premarital genotype screening especially if one of the reasons for marriage is procreation. Littleton and Engebretson (2010) define premarital sickle cell screening or testing is the process for screening couples going into marriage for genetic and blood transmitted diseases to prevent any risk of transmitting diseases to their children. Oyedele, Emmanuel, Gaji and Ahure (2015), noted that premarital genotype screening presents an opportunity for individuals to become informed about their genetic predisposition to diseases and for couples to be aware of the possible genetic characteristics of their unborn children. Pre-marital screening is a comprehensive group of tests for those who are planning to get married aimed at reducing the number of children with inherited diseases, (Abd-Al-Azeem, Elsayed, Sherbiny and Ahmed, 2011). Al-Aama (2010) stated that the effectiveness of carrier screening programme depends largely on the awareness of the target population. Hence, knowledge of pre-marital screening for genetic disorder according to Abd-Al-Azeem, Elsayed, Sherbiny and Ahmed (2011) will allow individuals to take steps to reduce the risk of being carriers. The study will help in sensitising youths to identify with the importance of premarital genotype screening before marriage thereby preventing sickle cell disease and its associated stressful consequences.

Purpose of the Study

The general purpose was to investigate the perceptions of premarital genotype screening among youths in Ikorodu Local Government Area. Specifically, the study determined youths' perception of:

1. knowledge of premarital genotype screening,
2. necessity for premarital genotype screening,
3. influence of their religion belief on premarital genotype screening.

Research Questions

1. What are the indicators of knowledge of premarital genotype screening among the youths of Ikorodu Local Government, Lagos State?
2. What are the indicators of necessity for premarital genotype screening among the youths of Ikorodu Local Government, Lagos State?
3. What are the indicators of influence of their religion belief on premarital genotype screening among the youths of Ikorodu Local Government, Lagos State?

Methodology

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

***Area of the Study*:** The study took place at Ikorodu Local Government Area Lagos State.

Population for the Study: The population for the study comprised all single male and female youths between the ages of eighteen (18) and thirty (35) in Ikorodu Local Government Area.

***Sample for the Study*:** A simple random sampling method was used to select 400 unmarried youths, 188 (47%) male respondents and 212 (53%) female respondents.

***Instrument for Data Collection*:** Self-developed validated questionnaire was used for the collection of data that comprised items regarding the purpose of the study. The validated questionnaire was pilot tested on twenty respondents who were within the age range but outside the area of study to determine the reliability. Cronbach Alpha Coefficient was used to test the reliability and this result showed coefficient value of 0.87.

***Data Collection Methods*:** The researchers and three trained research assistants administered questionnaire to the four hundred and thirty (430) copies of the questionnaire to the respondents and they retrieved after the respondents have filled their responses on the spot. Out of the four hundred and thirty (430) copies of the questionnaire administered, only four hundred (400) that were properly filled were used for the study.

***Data Analysis Techniques*:** The data collected was analysed using frequency counts and percentage.

Findings of the study

Table 1: Percentage Responses of Youths on Knowledge Indicators of Premarital Genotype Screening (N = 400)

S/N	Knowledge Indicators	YES F (%)	NO F (%)
1.	I have heard about genotype.	354 (88.5)	46 (11.5)
2.	Genotype is the same as blood group.	48 (12.0)	352 (88.0)
3.	Genotype is inherited from parents.	389 (97.3)	11 (2.7)
4.	An individual's genotype can be spiritually manipulated.	7 (1.80)	393 (98.2)
5.	A person with genotype AS does not have Sickle Cell Disease	388 (97.0)	12 (3.0)
6.	Person with sickle cell disease inherited two sickle cell genes 'SS' from the father and mother.	396 (99.0)	4 (1.0)

Table 1 shows that out of 400 respondents, 354 (88.5%) respondents had knowledge of genotype; 352 (88%) respondents were of the opinions that genotype is not the same as blood group. Furthermore, 389 (97.3%) respondents agreed that genotype is inherited from parents, 393 (98.2%) respondents were of the opinions that an individual's genotype cannot be spiritually manipulated, 388 (97%) respondents agreed that a person with genotype AS does not have Sickle Cell Disease; 396 (99%) respondents were of the opinion that a person with sickle cell disease inherited two sickle cell genes SS from the father and the mother.

Table 2: Percentage Responses of Youths on Necessity for Premarital Genotype Screening (N = 400)

S/N	**Indicators of Perception of Necessity for PGS**	YesF (%)	NoF (%)
1.	I have heard about genotype screening is necessary before marriage.	364 (91.0)	36 (9)
2.	All youths should undergo genotype screening before marriage.	363(90.8)	37 (9.2)
3.	My fiancé/fiancée has to be screened for genotype before our marriage.	372 (93.0)	28 (7)
4.	I would encourage my friend to be screened for genotype before marriage.	369(92.3)	31(7.7)
5.	Genotype screening before marriage is a must for all.	381 (95.3)	19 (4.7)
6.	Genotype screening before marriage is not an important determinant for marriage.	22 (5.5)	378 (94.5)
7.	Genotype screening before marriage can help in preventing sickle cell disease.	392 (98.0)	8 (2)
8.	Genotype screening should be made compulsory for all intending couples before allowing them to marry to reduce cases of sickle cell disease.	385 (96.3)	15 (3.7)
9.	If the genotype screening result shows that the intending couples are carriers of the sickle cell gene (AS), the intending couple should continue with the marriage.	4 (1)	396 (99)

Table 2 reveals that 364 (91%) respondents indicated that genotype screening before marriage is necessary, 363 (90.8%) respondents were of the opinions that all youths should undergo genotype screening before marriage. Also, 372 (93%) respondents reported that their fiancé/fiancée must be screened for genotype before marriage; 369 (92.3%) respondents agreed that they will encourage their friends to be screened for genotype before marriage. Further, 381 (95.3%) respondents agreed that genotype screening before marriage is be done by all. The result further determinant to marry while 378 (94.5%) respondents were of the opinions that genotype screening before marriage is an important determinant for marry, 392 (98%) respondents agreed that genotype screening before marriage helps to prevent sickle cell disease. Also, 385 (96.3%) respondents agreed that genotype screening should be made compulsory for all intending couples before marriage, 396 (99%) respondents were of the view that if intending couples' genotype screening result shows that they are carriers of sickle cell gene (AS) they should not continue with the marriage.

Table 3: Percentage Responses of Youths on Influence of Religious Belief on Premarital Genotype Screening (N = 400)

S/N	Indicators of Religious Belief Influence for PGS	Yes F (%)	No F (%)
1.	My religious organization usually insists on genotype screening before marriage.	378 (94.5)	22 (5.5)
2.	I will accept to do a genotype screening if my church/mosque insists on premarital genotype screening.	382 (95.5)	18 (4.5)
3.	Some religious organizations do not include genotype screening in their marriage counseling package.	33 (8.2)	367 (91.8)
4.	Religious beliefs make me go against the acceptance of premarital genotype screening.	21 (5.2)	379 (94.8)
5.	Premarital Genotype Screening has nothing to do with Religious Background.	392 (98)	8 (2)

The result on Table 3 shows that out of the 400 respondents, 378 (94.5%) respondents indicated that their religious organizations usually insist on genotype screening before marriage; 382 (95.5%) respondents were of the opinion that they will go for premarital genotype screening if their religious organisations insist. The result further showed that 367 (91.8%) respondents indicated that their religious organizations include genotype screening in their marriage counseling package; 379 (94.8%) respondents were of the view that acceptance of premarital genotype screening do not make them go against their religious belief; 392 (98%) respondents agreed that premarital genotype screening has nothing to do with religious background.

Discussion of Finding

The result of the study revealed that 88.5% of the respondents had knowledge of genotype. This finding collaborates with result of the study of Faremi, Olatubi and Lawal (2018) which showed that 76.5% of the participants had knowledge of sickle cell disease. Furthermore, the study revealed that majority of the respondents, 97.3% and 99.0% were aware that sickle cell disease is inherited from parents. The finding is in line with Olarewaju, Enwerem, Adebimpe and Olugbega-Bello (2013) who stated that majority of their participants were aware that sickle cell disease is an inherited disorder.

The findings of the study revealed that a great number of the respondents were aware that premarital genotype is necessary before marriage. The finding collaborates Omolase, Agborubere, and Omolase (2010) who reported that majority of the respondent were aware of premarital genetic counselling. The result of the study showed that majority of the respondents believed that premarital genotype is important, should be made compulsory and must be done by all. The result is in line with Gbeneol, Brisibe and Ordiniola (2015) who stated that 85% respondents recommended that government should make premarital screening compulsory exercise for marriage and Omolase, Agborubere, and Omolase (2010) who opined that premarital counselling should be legalized.

The result further showed 93.0% and 92.3% of the respondents respectively indicated that they will encourage their fiance/fiancee and friends to be screened for genotype before marriage. The results are in line with the result of Faremi, Olatubi and Lawal (2018) who reported that majority of the respondents express their desire of going for premarital genetic screening to avoid bringing forth a child with sickle cell disease. The results also collaborate with Kuteyi, Oyegbede, Bello and Osakwe (2009) who reported that majority of the respondents and their partners have had sickle cell screening. It is also in line with Ugwu (2016) who indicated that respondents believed it is important for people to go for premarital genetic counselling and screening for haemoglobin genotype and will also subject themselves for premarital genetic counselling and screening. The result of the study further collaborated the finding of Adeyemo, Oyenike, Omidije, and Oluwasola (2009) which revealed that respondents saw the importance of genetic diseases and agreed that premarital counselling will help in preventing the commonest genetic diseases. The finding of the study revealed a great percentage, 98% respondents stated that genotype screening will help to prevent sickle cell disease. The result of the study is in collaboration with the finding of Faremi, Olatubi, and Lawal, (2018) which revealed that most of the respondents were interested to go for premarital genetic screening to avoid bringing forth children with sickle cell disease. The finding of the study showed that 99% respondents were opinion that intending couple whose genotype result showed being carriers should discontinue with the marriage. The finding is in line with Igbenughe, Olisekodiaka, Akinsehinwa, and Okanlawon (2017) who reported that majority of their respondents indicated that they would have called off the relationship with their partners if they were aware of their incompatible status. Also, 82% of the counselled and non-counselled respondents stated that they would give up their relationship if there was a risk of having a child with haemoglobinopathy. However, Alao and Nwannadi (2013) finding is at variance with the finding because 47% of the students who are involved in relationship indicated their intention to proceed with the marriage despite genotype incompatibility. Also, Kuteyi, Oyegbede, Bello and Osakwe (2009) study is not in line with the result of the study as their result showed that one third to two third of the respondents indicated that they will continue the relationship with their partners when either or both have haemoglobinopathy.

The result of the study showed that 382 (95.5%) respondents indicated they will go for premarital genotype screening if their religious organisation insist. The finding is in line with Gbeneol, Brisibe and Ordiniola, (2015) whose result revealed that most of the Pentecostal Christians and other Christian denomination respondents carried out premarital screening as it is a compulsory exercise for marriage in Southern Nigeria. Ezechukwu, Egbeonu and Chukwuka (2004) result of study showed that 58.8% of the respondents indicated that sickle cell traits screening is a pre-condition for church wedding. Also, the study of Omolase, Agborubere, and Omolase (2010) revealed that majority of the respondents supported the inclusion of religious leaders in premarital counselling. Equally, Monronkola and Fadairo (2007) showed that large percentage of the respondents believed that choice of marriage partner should not be depended on genotypes, hence, subjecting oneself to genetic screening and counselling is a demonstration of lack faith in God.

Conclusion

Sickle cell disease can be averted or reduced if people are expose to premarital genotype screening and present themselves for screening. Also, if religious bodies should make premarital genotype screening a prerequisite for conducting marriage, this will drastically reduce sickle cell disease in the society. Furthermore, giving genotype health talk will motivate people to go for screening voluntarily and early.

Recommendations

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

1. Government and non-government organizations should provide genotype counselling and testing centers as done with HIV/AIDS counselling and testing centers in rural and urban areas.
2. Religious bodies and government should make premarital genotype screening a prerequisite for marriage.
3. There should be intensive enlightenment campaign on the need for genotype and genotype testing in social gathering, religious setting and on media.
4. Genotype and other related hereditary should be built into all levels of school curriculum.
5. Religious bodies should educate their congregation on the importance of genotype and premarital genotype screening.

6. The National Assembly and State Houses of Assembly should passage bills towards compulsory genotype and premarital genotype screening in the control of sickle cell scourge.
7. Hospitals should be mandated to screen children for genotype during routine clinic and give genotype talk to parents. This will produce informed parents who will in turn inform the children.

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Factors Influencing Street Hawking among School-age Children in Ido Local Government Area of Oyo State, Nigeria

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Abstract

The study focused on factors influencing street hawking among school-age children in Ido LGA of Oyo State, Nigeria. It determined causes, perceived effects and measures that can be taken to curb street hawking in the study area. Population was made up of parents/guardians of school-age children who were street hawkers at the time of the study in the area. Structured interview schedule was used to collect data. Data were analyzed using percentages and frequency count while inferential statistics employed were chi-square and linear regression at $p \leq 0.05$ level of significance. Results shows among others, that 91.1 percent of the respondents engaged children in street hawking at early age of ≤ 10 years. Major causes of street hawking were poor financial status (93.9%), single parenthood (93.9%), and inability to provide the needs of the children (95.4%). Also, majority (94.6%) acceded that implementation of Child's Right Act would curb street hawking.

Keywords: Street, Hawking, Children, Child, Right Act, Ido LGA.

Introduction

Street hawking is one of the commonest forms of child labor in Nigeria and indeed sub-Saharan Africa. It involves selling of things along the road and from one place to the other by children below 18 years (Ashinmolowo *et al.*, 2010). Street trading has been reported to have numerous negative consequences (Amoo *et al.*, 2012). Children who engage in street hawking more often than not are deprived among other things of the opportunity of being in school completely or partially because of the long hours they are expected to work. According to the International Labour Organization (ILO), child labour is defined as "work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development". Globally, 111 million children under 15 years were reported to be in hazardous work in 2006 (ILO, 2006). One of the basic principles of the International Convention on the Rights of the Child is that every child must be protected against all forms of exploitation, indecent or degrading treatment, including child labour, abduction and sale (UNICEF, 2000). According to UNICEF (2000), exploiting the labour of a child means employing a person below the age of 15 years and paying him/her less than the minimum standard wage. Trafficked children are made to works as hawkers and petty traders, beggars, car washers, bus conductors, farm hands or cattle rearers (UNICEF, 1997).

The use of children as hawkers, beggars and bus conductors is widespread in the urban areas. Other worst forms of child labour include street hawking, drug peddling, herding of livestock, children used by the physically challenged in begging along busy streets and sneaking (this is a method whereby armed robbers and thieves engaged young children to pass through small inlets into their areas of operation), child trafficking, child prostitution, slavery practices, particularly in the fishing industry, child domestic servitude, exploitation of children in mines and customary servitude (Ojo, 2013). Children in the urban areas are quickly caught up in the daily struggle for survival and material gain (Ebigbo, 1989).

A situation analysis of child abuse and neglect in Nigeria, undertaken through the medium of newspapers, found that child abandonment, sexual abuse (Al-Qaisy, 2007), child neglect, vagrancy, kidnapping and hawking were the most reported forms of child abuse and neglect (Ebigbo, 2013). Factors promoting child labour includes poverty, exploitation by the adults and children's own choices as a result of ignorance, among other things (Okafor, 2010 and Dada, 2013). The problem of child labour is pervasive in nature (ILO,2006). The Western Societies see child labourers as people suffering from some psychological and pathological problems, while in the African Society; it is regarded as a natural procedure in child rearing process. Child labour has been considered a social problem in the African context and Nigeria in particular (UNICEF, 2000 and ILO, 2015). Ebigbo (2013) opined that in Nigeria, the rate of child abuse and child hawking has assumed a worrisome and alarming proportion. He further noted that in Ibadan, Ondo and Ogun metropolis, it is a daily occurrence to see children below 14 years, hawking wares and other products along the roadsides.

Although, child hawking, can contribute to the economic growth and development, the risks that are attached supersede the economic positive aspect of it. Risks like motor accident, rape, kidnapping, extortion, sexual molestation (Onuzuike, 2007) and the child involvement in robbery and other anti-social behaviours are too great to ignore. Child hawking exposes the child to a lot of hazards like sexual defilement, sexual assaults, neglects and threat of punishment for speaking out. The consequences of these acts usually result in an unwanted pregnancy, sexually transmitted diseases, psychological problems and a gradual withdrawal from a healthy relationship with the opposite gender (UNICEF, 2000). Oloko (1989) noted that street hawking exposes the male and female child to dangers posed by fraudsters and actual murderers because of their vulnerability at odd hawking hours. They are usually under personal jeopardy, harsh and hazardous conditions such as becoming an easy target to occult predators (ritual killers). Although, various efforts were made by Federal Government and non-governmental organizations to stem the trend, the problem continues.

Objectives of the study

The broad objective of this study was to examine issues related to street hawking among school age children in Ido Local Government Area of Oyo State, Nigeria. Specifically, the study determined:

(i) socio-economic characteristics of parents/guardians in the study area;
(ii) causes of street hawking in the study area;
(iii) measures taken against street hawking in the study area;
(iv) perceived effect of street hawking on school age children in the study area

Methodology

***Area of study*:** This study was carried out in Ido Local Government Area (ILGA) of Oyo state, Nigeria. Ido LGA has an area of 986 km^2 and a population of 103,261 at the 2006 census. The local government has its headquarter at Ido and was carved out from the former Akinyele Local Government. It shares boundary with Oluyole, Ibarapa East, Akinyele, Ibadan South West and Ibadan North West local governments in Oyo state and Odeda local government in Ogun state. Among the major towns within the local government area include Ijokodo, Omi-Adio, Ido, Apata, Apete, Akufo and Bakatari. Ido has very rich fertile soil which is suitable for agriculture; the basic occupation of the people is farming. The area is also suitable for wide range business activities which made it vulnerable to street hawking among school age children.

Population of the Study: The population comprised all parents/guardians in Ido Local Government Area of Oyo State. They are mostly subsistent farmers with low level of education. As a result of the subsistence farming they practiced, their incomes were very low which made them to be poor.

Sampling for the study: Two stage sampling technique was used to select the respondents. Stage one involved a simple random sampling of seven major towns in Ido Local Government Area. The selected towns were Ijokodo, Omi–Adio, Ido, Apata, Apete, Akufo, and Bakatari. Stage two involved snow-ball sampling of 40 household heads from each of the seven towns already selected which gave a total of 280 respondents.

Instrument for Data Collection: Structured interview schedule was used for data collection. It was developed based on literature review and the objectives of the study. It was duely validated.

Data Collection Technique: The respondents were interviewed by trained research assistants based on the interview schedule.

Data Analysis Technique: Data were analysed using percentages and frequencies.

Results and Discussion

Data analysis shows that majority of the respondents (45.0%) were between the age of 40 and 49 years, 38.9 percent were between 30 and 39 years, 13.2 percent were between the ages of 20 – 29 years while those between 50 years and above were 2.8 percent of the respondents. This implies that most of the respondents were agile and able to work and mount pressure on their wards to embark on street hawking. Also, majority (62.1%) were male while their female counterparts were 37.9 percent of the total respondents. This implies that male traders who engage children in street hawking were more than female traders in the study area. Also, majority of the respondents practiced Islam (63.2%), Christians were 35.70% while 1.1% were traditionalists. This shows that majority of the respondents were religious. Majority of the respondents (67.9%) had primary education background. Low level of education influences involvement of guardians in child labour and street hawking activities to augment family livelihood.

Table 1: Causes of Street Hawking among Households of the respondents (n= 280)

Causes of Street Hawking	YES Freq(%)	NO Freq(%)
Poor financial status	263 (93.9)	17 (6.1)
Inability to provide the needs of children	267 (95.4)	13 (4.6)
Quest for additional income	266 (95.0)	14 (5.0)
Poor level of education ignorance	242 (86.4)	38 (13.6)
Low financial status	263 (93.9)	17 (6.1)
Problem of single parenthood	262 (93.6)	18 (6.4)
The need to keep children engage and busy	249 (88.9)	31 (11.1)
Displacement due to war/ insurance	256 (91.4)	24 (8.6)
Use children to assist in income generation	256 (91.4)	24 (8.6)
To prevent children from playing around in the neighbourhood	251 (89.6)	29 (10.4)

Source: Field Survey, 2018

Table 1 reveals that majority (93.9%) alluded that poor financial status led them to using their children for street hawking to generate income for livelihood. Also, 95.4 percent of the respondents claimed that inability to provide the needs of their children forced them to street hawking, while 4.6 percent were of the view that provision for their children's needs led them into child hawking. Also, 95.5 percent of the respondents agreed that quest for additional income was instrumental to their involvement in street hawking. Majority (86.4%) claimed that their poor level of education and ignorance brought about using their children for street hawking. Also, majority 93.9 percent, 93.6 percent, 88.9 percent, 91.4 percent, 91.4 percent and 89.6 percent assented that low financial status, problem of single parenthood, the need to keep child engaged, displacement due to war / insurgence, use children to assist income generation and to prevent children from playing around respectively caused them to use their children for street hawking. This is alarming and dangerous and it has to be stopped by coming to the aid of the community in providing all their necessary needs to curb the menace.

Table 2: **Measure that can be taken to curb street hawking among households of the respondents (n= 280)**

Measures for Curbing Street Hawking	YES Frq (%)	NO Frq (%)
Implementation of Child Right Act by all States of the Federation	265 (94.6)	15 (5.4)
Construction of orphanage	256 (91.4)	24 (8.6)
Reaching out to the poor	261 (93.2)	19 (6.8)
Educating the children	262 (93.6)	18 (6.4)
Provision of free education	269 (96.1)	11 (3.9)
Sensitization on dangers of hawking by government and NGOs	266 (95.0)	14 (5.0)
Increase in community awareness on danger of hawking	262 (93.6)	18 (6.4)
Empowering children through entrepreneurship education	261 (93.2)	19 (6.8)

Source: Field Survey, 2018

Table 2 shows that majority (94.6%) accepted that implementation of Child's Right Act by all states of the federation would curb street hawking. Also, 5.4 percent subscribed that even if the Act is put in place many will still not stop using their children for income generation. Also, 91.4 percent concurred that construction of orphanage home to cater for the less privileged children should be a good measure to stop child labour but 8.6 percent did not allude to this measure. From the table, 93.2 percent, 93.6 percent, 96.1 percent, 95.0 percent, 93.6 percent and 93.2 percent agreed that reaching out to the poor, educating the children to know their rights as members of the society, provision of free education, sensitization on dangers of hawking by government and NGOs, increase in community awareness on dangers of hawking and empowering children through entrepreneurship education respectively were good measures to curb street hawking.

Table 3: Perceived Effect of Street Hawking among Households of the sampled respondents (n= 280)

	Perceived Effects of Street Hawking	SA Freq (%)	A Freq (%)	U Freq (%)	D Freq (%)	SD Freq (%)
1	Street hawking lead to prostitution or rape	72 (25.7)	205 (82.0)	3 (1.1)	0(0.0)	0(0.0)
2	Street hawking lead to moral decline in the children	65 (23.2)	202 (72.1)	3 (1.1)	7 (2.5)	3(1.1)
3	Hawking cause low self esteem	56 (20.0)	140 (50.0)	6(2.1)	73 (26.1)	5 (1.8)
4	Street hawking expose children to accidents	134 (47.9)	132 (47.1)	7(2.5)	5 (1.8)	2 (0.7)
5	Street hawking lead to unwanted pregnancy	133 (47.5)	130 (46.4)	5 (1.8)	2 (0.7)	0 (0.0)
6	Street hawking lead to arrest of the victims because it is prohibited in Nigeria	130 (46.4)	133 (47.5)	4 (1.4)	13 (4.6)	0 (0.0)
7	Street hawking encourage sexual immoral	41 (14.6)	47(16.8)	14 (5.0)	146 (52.1)	0 (0.0)

	behavior					
8	Child involve in Street hawking risk the chances of being kidnapped	19 (6.8)	162 (57.9)	9 (3.2)	78 (27.9)	0 (0.0)
9	Hawking expose child to pornography films	8 (2.9)	52 (18.6)	15 (5.4)	167 (59.6)	6 (0.2)
10	Street hawking lead to poor education of the children involved	13 (4.6)	37 (13.2)	12 (4.3)	210 (75.0)	5 (1.8)
11	Street hawking lead to dropout among the children that are involved	20 (7.1)	62 (22.1)	38 (13.6)	133 (47.5)	7 (2.5)
12	Street does not encourage gang stealing	5 (1.8)	57 (20.4)	10 (3.6)	211 (75.4)	0 (0.0)
13	Street hawking lead to fight incident	8 (2.9)	161 (57.5)	12 (4.4)	106 (37.9)	3 (1.1)
14	Street hawking can negatively affect the victim psychology	12 (4.3)	192 (68.6)	14 (5.0)	60 (21.4)	2 (0.7)
15	Street hawking is a form of child abuse	16 (5.7)	242 (86.4)	8 (2.9)	5 (1.8)	2 (0.7)

Source: Field Survey, 2018

Table 3 reveals that majority (82.0%) agreed while 25.7 percent strongly agreed that street hawking can lead to prostitution or rape. This is alarming; government and NGOs must rise up to assist the Ido Local Government Area of Oyo State to save our children especially the females. Also, 72.1 percent agreed, 23.2 percent strongly agreed, 1.1 percent undecided, 2.5 percent disagreed and 1.1 percent strongly disagreed that street hawking can lead to moral decline in the children. 20.0 percent, 50.0 percent, 2.1 percent, 2.5 percent and 1.1 percent strongly agreed, agreed, undecided, decided and strongly disagreed respectively that could cause low self-esteem for the victim. Also, majority of the respondents (47.5%) strongly agreed while 47.1% agreed that street hawking expose children to accidents.

Table 4: Factors influencing street hawking among school-age children

Level of Influence	Frequency	Percent	Valid Percent	Cumulative Percent
High level of influential factors	208	74.3	74.3	74.3
Low level of influential factors	72	25.7	25.7	100.0
Total	280	100.0	100.0	

Table 4 reveals that 74.3 percent of the respondents categorized factors influencing hawking as highly influential while 25.7 percent agreed that the factors were of low influence.

Test of Hypotheses

Ho_1: There is no significant relationship between socio-economic characteristics and factors influencing hawking.

Table 5: Chi-square analysis of relationship between Socio-economic Characteristics and Factors Influencing and Street Hawking among Children

		Level of Influence by Factors						
		High Level of Influential Factors	Low Level of Influential Factors	Total	χ^2-value	Df	p-value	Rmark
Age	≤ 29	22(10.6%)	6(8.3%)	28(10.0%)	11.559[a]	4	.021	Sig.
	30 - 39 yrs	88(42.3%)	30(41.7%)	118(42.1%)				
	40 - 49 yrs	96(46.2%)	30(41.7%)	126(45.0%)				
	50 - 59 yrs	2(1.0%)	4(5.6%)	6(2.1%)				
	≥60 yrs	0(0.0%)	2(2.8%)	2(0.7%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
Sex	Female	169(81.2%)	56(77.8%)	225(80.4%)	.409[a]	1	.523	N.S
	Male	39(18.8%)	16(22.2%)	55(19.6%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
Religion	Christian	79(38.0%)	21(29.2%)	100(35.7%)	10.013[a]	2	.007	Sig
	Islam	129(62.0%)	48(66.7%)	177(63.2%)				
	Trad.	0(0.0%)	3(4.2%)	3(1.1%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
Education	NFE	12(5.8%)	5(6.9%)	17(6.1%)	41.188[a]	3	.000	Sig.
	1°	164(78.8%)	31(43.1%)	195(69.6%)				
	2°	29(13.9%)	26(36.1%)	55(19.6%)				
	3°	3(1.4%)	10(13.9%)	13(4.6%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
yrs of sch	1 - 10 yrs	176(84.6%)	63(87.5%)	239(85.4%)	.615[a]	2	.735	N.S
	11 - 20 yrs	31(14.9%)	9(12.5%)	40(14.3%)				
	21 - 30 yrs	1(0.5%)	0(0.0%)	1(0.4%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
Household Size	1-5	200(96.2%)	70(97.2%)	270(96.4%)	.177[a]	1	.674	N.S
	6-10	8(3.8%)	2(2.8%)	10(3.6%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				
Income	≤₦10000	205(98.6%)	64(88.9%)	269(96.1%)	14.854[a]	2	.001	Sig.
	₦10001 - ₦20000	3(1.4%)	5(6.9%)	8(2.9%)				
	₦20001 - ₦30000	0(0.0%)	3(4.2%)	3(1.1%)				
Total		208(100.0%)	72(100.0%)	280(100.0%)				

N.S = Not Significant   Source: Field Survey, 2018

Chi-square analysis of relationship between socio-economic characteristics and factors influencing hawking is as shown in Table 5. Results revealed that there was significant relationship between factors influencing hawking and age (χ^2=11.559a; p<0.05), religion (χ^2=10.013a; p<0.05), education (χ^2=41.188a; p<0.05), and income (χ^2=14.854a; p<0.05). This implies that factors influencing hawking depend on age, religion, education, and income. This was in line with Nuhu (2010) and Ebigbo (2013) that socio-economic and cultural factors are part of the major reasons why parents engage their children in street hawking.

Ho₂: There is no significant relationship between measures taken to curb street hawking and influencing factors.

Table 6: Linear Regression Analysis of the Relationship between Measures Taken To Curb Street Hawking and Influencing Factors

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.070	.471		8.636	.000
Implementation of Child's Right Act by all states of the federation	1.738	.266	.361	6.548	.000
Construction of Orphanage home to cater for the less privileged children	.531	.356	.079	1.494	.136
Reaching out to the poor in form of economic support	.596	.304	.112	1.962	.050
Educating the children to know their rights as members of the society	.665	.331	.114	2.009	.046
Provision of free education by government	.235	.310	.039	.758	.449
Sensitization on dangers of hawking by government and NGOs	-1.026	.419	-.136	-2.450	.015
Increase in community awareness on dangers of hawking	.508	.336	.075	1.513	.132
Empowering children through entrepreneurship education	1.738	.330	.283	5.264	.000

R= 0.681[a]; Adjusted R Square=0.448; R Square= 0.464; F-Value = 29.192
Source: Field Survey, 2018

Linear regression analysis of the relationship between measures taken to curb street hawking and influencing factors is as shown in Table 6. Result revealed that there was significant relationship between factors influencing hawking and implementation of Child's Right Act by all states of the federation (t=6.548; p<0.05), reaching out to the poor in form of economic support (t=1.962; p<0.05), educating the children to know their rights as members of the society (t=2.009; p<0.05), sensitization on dangers of hawking by government and NGOs (t=-2.450; p<0.05) and empowering children through entrepreneurship education (t=5.264; p<0.05). The table revealed that construction of orphanage home to cater for the less privileged children (t=1.494; p>0.05), provision of free education by government (t=.758; p>0.05), increase in community awareness on dangers of hawking (t=1.513; p>0.05) were not significant predictors of factors influencing hawking. This was indicative of social correlates and coping measures of street hawking revealed by Aderinto (2000).

Table 7: Linear Regression of the Relationship between Implication of Street Hawking and Influencing Factors

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.722	.671		11.512	.000
Street hawking lead to prostitution or rape	.002	.311	.000	.007	.994
Street hawking lead to moral decline in the children involved	.475	.188	.147	2.531	.012
Hawking children may have low self esteem	-.298	.134	-.125	-2.224	.027
Street hawking exposes children to accidents	.162	.087	.124	1.875	.062
Street hawking lead to unwanted pregnancy most especially among the female children	-.265	.134	-.125	-1.972	.050
Street hawking lead to arrest of the victims because street hawking in Nigeria is illegal	-.676	.173	-.264	-3.902	.000
Street hawking encourages sexually immoral behavior	-.112	.130	-.056	-.863	.389
Street hawking lead to school dropout among the children that are involved	.030	.082	.024	.366	.715
Children involved in street hawking risk the chances of being kidnapped	.172	.100	.124	1.717	.087
Hawking exposes children to pornographic films	.280	.087	.186	3.218	.001
Street hawking does not lead to poor education of the children involved	-.281	.100	-.167	-2.800	.005
Street hawking does not encourage gang stealing	.536	.126	.326	4.243	.000
Street hawking does not lead to fight incidence	.230	.106	.137	2.179	.030
Street hawking cannot negatively affect the psychology of the victims	-.124	.087	-.085	-1.428	.155
Street hawking is not a form of child abuse	-.389	.117	-.182	-3.331	.001

R= .650[a]; Adjusted R Square=0.390; R Square= .423; F-Value = 12.807

Source: Field Survey, 2018

Linear regression of the relationship between implication of street hawking and influencing factors are as shown in Table 7. Results revealed that there was significant relationship between influencing factors and street hawking can lead to moral decline in the children involved($t=2.531$; $p<0.05$), hawking children may have low self-esteem ($t=-2.224$; $p<0.05$), street hawking can lead to unwanted pregnancy most especially among the female children ($t=-1.972$; $p<0.05$), street hawking can lead to arrest of the victims because street hawking in Nigeria is illegal ($t=-3.902$; $p<0.05$), hawking exposes children to pornographic films ($t=3.218$; $p<0.05$), street hawking does not lead to poor education of the children involved ($t=-2.800$; $p<0.05$), street hawking does not encourage gang stealing (t=4.243; p<0.05), street hawking does not lead to fight incidence (t=2.179; p<0.05), and street hawking is not a form of child abuse(t=-3.331; p<0.05). The table revealed that there is no significant relationship between the influencing factors and street hawking can lead to prostitution or rape (t=.007; p>0.05), street hawking exposes children to accidents (t=1.875; p>0.05), street hawking can lead to unwanted pregnancy most especially among the female children (t=-1.972; p>0.05), street hawking can lead to arrest of the victims because street hawking in Nigeria is illegal (t=-3.902; p>0.05), street hawking encourages sexually immoral behavior (t=-.863 ; p>0.05), street hawking can lead to school dropout among the children that are involved (t=.366; p>0.05), children involved in street hawking risk the chances of being kidnapped (t=1.717; p>0.05), street hawking cannot negatively affect the psychology of the victims (t=-1.428; p>0.05). This corroborates Ojo (2013) on determinant factors of street hawking and its effect among school aged children.

Conclusion

Based on the results of major findings, factors influencing hawking were determined by age, religion, education, income, implementation of Child's Right Act, reaching out to the poor in form of economic support, educating the children, sensitization on dangers of hawking by government and NGOs and empowering children through entrepreneurship education. Also, street hawking can lead to moral decline, low self-esteem, unwanted pregnancy, arrest of the victims, exposure to pornographic films among other.

Recommendations

Arising from the study conclusions, it is recommended that:

1. There is need for vigorous enlightenment and economic empowerment of parents, guardians and faith-based organizations, improvement in household wellbeing by government and other key stakeholders.
2. Enforcement of Child's Right Act by all states of the federation, economic support and empowering children through entrepreneurship education must be given serious attention to curb the menace of incessant school aged hawking.

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Personal Hygiene Practices among Households in Igbo-Etiti Local Government Area Enugu State Nigeria

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Abstract

The study investigated the personal hygiene practices adopted by members of households in Igbo-Etiti local Government Area, Enugu State, Nigeria. Specifically, it determined personal hygiene practices adopted by households in the area of study, their perceived constraints to their hygiene practices, and strategies for ameliorating the constraints. Questionnaire was used for data collection. Population for the study was 209, 248 members of households in the area of the study. Multi-stage sampling technique was used to select a random sample of 210 respondents. Mean and standard deviation were used for data analysis. Findings show that personal hygiene practices are poorly adopted in the area of study. The adopted poor personal care hygiene generated problems such as bad odour, bad breath, staph infection among others. These problems can be solved or reduced through adequate care of the body like use of anti-bacteria soap to take both and wash hands, wear clean clothes, lingerie/under wears among others. Based on the findings, recommendations were made, that hygiene talk programme should be organized for the members of the households in the area of study and that public awareness campaign should be carried out during August and October annual general meetings in the area of the study.

Keywords: Household, Personal Hygiene, Body Odour and Practice.

Introduction

The proliferated nature of ill-health in the rural areas necessitates for concert effort to reducing if not total eradication of spreading of contaminated diseases among rural dwellers. This without any doubt warrants a study on the personal hygiene practices adopted by members of households. Personal hygiene involves proper care of all parts of the body to appear clean and attractive. It is a practice performed for body wellness and health preservation. Personal hygiene according to Orenstein (2018) is the principle of maintaining daily or regular care of the body to keep with once appearance and prevent unpleasant odour and illness. This implies that personal hygiene envelops all practices that performed by an individual to take absolute care of ones wellbeing through cleanliness. Environmental Health practioner manual (2017) reported that personal hygiene involves washing the body often, cleaning the teeth, washing hands with good soap especially after going to the toilet, giving care to an infected person, cutting hair, finger and toe nails short and proper cleaning of the face. Motivations for personal hygiene practice include reduction of personal illness, healing from personal illness, optimal health, social acceptance and prevention of spread of diseases to other people. World Health Organization (WHO) (2015) reported that personal hygiene practice is a condition and practice which aids to maintain good health and prevent diseases. It promotes self sanitary practices. Bebby (2017) noted that personal hygiene practices mean taking care of every aspect of ones body from keeping the body clean to looking best in appearance. The practice of personal hygiene according to Azubike (2015) is employed to prevent or minimize the incidence and spread of communicable diseases. It is a health tool practice for every member of households for prevention of diseases, promotion of health and for aesthetics values (Hansen 2017).

Johnson (2018) maintained that personal hygiene practice involves direct view on oneself hence, personal hygiene include washing and wearing clean clothes, having enough sleep in a good environment and caring for teeth and mouth as when due. Singh (2019) is of the view that practices that are generally considered proper hygiene include showering or bathing regularly, washing hands regularly and especially before handling food, washing scalp hair, keeping hair short removing hair, brushing and flossing teeth, cutting finger nails, besides other practices. Some practices are gender-specific, such as a woman during her menstruation.

Personal hygiene therefore prevents the development and spread of infections, illness and bad Odours. It makes one to be attractive in the public and social gathering. Most communicable disease are caused by pathogens and diseases that are transmitted from one person to another through physical contacts. These communicable diseases can be controlled by keeping proper personal hygiene practices. Bebby (2017) maintained that good personal hygiene practices in a family help to prevent growth of diseases and infections in homes. A personal hygiene practices in a family help to prevent growth of diseases and infections in homes. A personal hygiene practice prevents orally transmitted diseases through the fingers. Contamination of fingers during defecation, urination and even hand-shaking of infected persons is very possible hence transmission of infections and diseases.

Good hygiene practices have aesthetic values. Eze (2015) opined that general cleaning of oneself produces pride, comfort and dignity at home and in the society. Proper caring of ones appearance is one of the ways to promote self-esteem. An individual with good personal hygiene practices is also socially accepted among friends.

The component of personal hygiene as reported in *Environmental Health*

Practitioner (2017) are, oral hygiene, sleep hygiene and personal hygiene. Johnson (2018) included hand washing hygiene, clothing care hygiene and body (skin) care hygiene as components of personal hygiene. In oral hygiene as stated by Johnson (2018) healthy adult should brush and floss teeth with the correct techniques daily and replace toothbrush every few months. Johnson further stated that oral hygiene is very important because mouth cavity is full of bacteria and is a good environment for bacteria growth. Sleep hygiene according to Bloomfield (2013) is for behavioural and environmental practice that is intended to promote better quality sleep. Good sleep hygiene include, establishment of regular sleep schedule, use nap with care, not exercising physically or mentally too close to bedtime, limiting worry, not using bed for anything but sleep, have peaceful, comfortable and dark sleep environment. Body hygiene practices include; taking bath or shower twice daily, wearing appropriate clothes beside others. Hand washing hygiene involves the mechanical removal of microorganisms from contaminated hand surfaces using soap or detergent to avoid infection (Bloomfield, 2013). There are frequent outbreaks of communicable diseases like diarrhea, trachoma, cholera and so on in rural areas in Nigeria and Igbo-Etiti local government area in particular. Ibenegbu (2018) noted that thousand of people die every year in rural areas in Nigeria because inability to keep simple health rules and personal care hygiene for protection from communicable diseases. Eze (2016) noted that morbidity and mortality are high among households in rural areas because of poor hygiene practices, dirty environment and inadequate care of household articles.

Households, according to Anyakoha (2015), are made up of people who live together in a house, cooperate with each other and share the same facilities. Iris (2012) maintained that proper maintenance of personal hygiene practice and household articles constitutes the component of good personal hygiene in a home. Most members of households, especially in the area of study, share articles such as plates, cutlery, bath towel, cups, glasses and so on in common. Infections and diseases may be transmitted through the common use of these articles by all members of household.

Washing of hands with warm water and anti-bacteria soap is one of the best ways to prevent germs spreading from hands. Heasley (2016) noted that brushing and flossing of teeth at regular bases and proper hand wash reduce the accumulation of bacteria, viruses and parasites which cause outbreak of dierrea, tooth decay and gum diseases. Therefore, oral hygiene practices prevent diseases and helps individuals to chew and enjoy many food items.

Inadequate personal hygiene practices may course social embarrassment. People alienate themselves from individuals who develop body Odour. Orenstein (2015) maintained that individuals who have poor personal hygiene such as disleveled bushy hair, wear dirty clothes, bad breath are unhealthy and likely to face discrimination in the public. He further stated that poor personal hygiene has serious implication on the success of job acquisition and promotion in an organization. Hanson (2017) opined that high level of personnel hygiene practices increases self-esteem, confidence and leads to perfection in an environment and occasions. American dental Association (2016) reported that influenza, hepatitis A and body odour come up as a result of inadequate personal hygiene practices.

There are frequent outbreak of diseases such as influenza, typhoid, staph infection, tuberculosis among others in rural communities in Nigeria which Igbo-Etiti Local government area is one of the rural communities. Omon (2016) noted that in proper personal hygiene practices in rural areas in Nigeria has resulted to health challenges of various diseases. The researchers observed that body odour, bad breath, athlete foot, ringworm and halitosis are not uncommon among members of households in the area of study. Moreover, inadequate care of the body and poor clothing maintenance are still on increase in rural areas in Nigeria which exposes the rural dwellers and households in Igbo-Etiti local government area inclusive to all kinds of infections and ill-health. Hygiene and environmental health (2019) reported that the prevention of communicable diseases like diarrhea, trachoma and many other diseases is highly possible through the application of proper personal hygiene worldwide. It is on the basis of the relevance of good personal hygiene that occasioned the researchers to investigate personal hygiene practice among households in Igbo-Etiti Local Government Area, Enugu State, Nigeria.

Purpose of the Study

The general purpose of the study was to investigate personal hygiene practices of households in Igbo-Etiti Local Government Area (LGA). Specifically the study determined;

1. personal hygiene practices adopted by members of households in the area of study.
2. problems encountered by members in their hygiene practices.
3. ways to alleviate the problems encountered by members of households in their hygiene practices.

Research Questions

1. What are the personal hygiene practices adopted by members of household in Igbo-Etiti Local government area?
2. What are the problems encountered in the personal hygiene practices adopted by members of household in the area of study?
3. What are the ways to alleviate the problems encountered by members of household from adopted personal hygiene practices?

Methodology

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

***The area of the Study*:** The area of the study is Igbo Etiti Local Government Area, Enugu State, Nigeria. It is a rural area that is made up of 14 communities. Members of households are mostly farmers and petty traders. Majority of the households live in mud houses with the roof made from grass, while few live in modern concrete houses. The area was chosen because of frequent outbreak of diseases in the local government Area which could be due to poor hygiene practices adopted by members of the households.

***Population for the Study*:** The population was made up of all the households in

Igbo-Etiti Local Government Area (LGA). Each household is made up of persons living in one housing unit and sharing facilities and eating together. There is no available data on the population size, however, reports of Nigeria Population Census (2006) reveal there were 209, 248 household in the LGA then.

Sample for the Study**:** Random samples of three communities were selected from the 14 communities that made up the LGA. Out of each of the three communities, 70 households were purposively selected to yield three persons (a husband, a wife and an adult child). This gave a sample of 210 respondents for the study.

Instrument for Data Collection**:** The questionnaire was developed by the researchers based on the research questions. The questionnaire items was structured under 4-point response mode of strongly agree =4, agree = 3, disagree = 2 and strongly disagree = 1. The instrument was validated by three lecturers in Home Economics department Ebonyi State University, Abakaliki. The suggestions of the experts were incorporate in the final draft of the questionnaire. The questionnaire was pre-tested using twenty one members of households in Nkume, Njaba local government, Imo state, Nigeria, to test the internal consistency of the instrument. A reliability coefficient of 0.99 was obtained.

Data Collection**:** Two hundred and ten copies of the questionnaire were administered by the researchers. One hundred and ninety six valid copies of the questionnaire were collected. This yielded a return of rate of 93.3 percent. Mean statistic was used to analyze the data collected.

Analysis**:** The data were analyzed using means, and standard deviation. Mean rating of 2.50 and above were considered agreed while below 2.50 were considered disagree.

Findings of the Study

Table 1: Mean Responses on the Personal Hygiene Practices among Household in Igbo-Etiti Local Government Area, Enugu State (No – 196)

S/N	Personal care Hygiene practice among household	$\bar{x}_1$	$\bar{x}_2$	$\bar{x}_3$	$\bar{x}_g$	SD	Remark
1	Shower or bath at least once daily.	3.00	2.60	2.50	2.70	0.74	A
2	Use enough water with anti-bacteria soap to bath always.	210	2.07	2.40	2.19	0.75	D
3	Take regular physical body exercise	2.41	2.20	2.00	2.20	0.96	D
4	Men trim their hair weekly	2.31	2.42	2.45	2.39	0.76	D
5	Regularly shave the important area of the body that need shaving.	2.70	2.80	3.10	2.86	0.60	A
6	Women plate their hair or fix weavon regularly	2.25	2.30	2.41	2.23	0.98	D
7	Brush and floos teeth morning and night daily.	2.00	2.01	2.10	2.03	0.96	D
8	Have enough sleep of at least eight hours every night.	2.30	2.30	2.25	2.28	0.86	D
9	Finger and toe nails are trimmed with nail	2.30	2.31	2.48	2.36	0.76	D

	clipper or scissors and smoothen with nail file regularly.						
10	Wear clean clothes always	2.35	2.47	2.10	2.30	0.75	D
11	Dry while clothes sunlight	2.60	2.55	2.70	2.61	0.77	A
12	Dry coloured clothes under a shade	2.10	2.15	2.35	1.20	0.96	D
13	Wash under wears eg brazier, busers, pants, singlet after every use	2.10	2.20	2.30	2.20	0.96	D
14	Never wear sweaty or wet clothing	2.70	2.80	3.00	2.83	0.73	A
15	Wash clothes with detergent in lukewarm water after every use.	2.00	2.02	2.32	2.11	090	D
16	Wash clothing immediately after use	2.28	2.9	2.35	1.31	0.75	D
17	Always apply linen spray on cloths	1.10	2.35	2.35	2.26	0.85	D
18	Wash tooth stock immediately after each use	1.50	2.00	2.40	1.96	0.98	D
19	Remove stains on the clothes immediately it stains a dress.	1.50	2.00	2.00	1.83	1.94	D
20	Remove stains on clothes before washing the garment.	2.00	2.00	2.40	2.13	0.94	D
21	Always iron clothes before wearing	2.10	2.10	2.30	2.11	0.93	D

Key; $\bar{x}_1$ = mean for husband; $\bar{x}_3$ = mean for children; $\bar{x}_2$ = mean for wife; $\bar{x}_g$ = overall mean; SD = Standard deviation D= Disagreed A= Agreed

Table 1 showed that out of 21 items, 17 items scored value below 2.50 cut-off point set for the study. Only four items scored mean value of 3.00 which is above cut-off point set for the study. This showed that the members of the households in the area of study do not take regular body exercise, not have enough sleep, brush and floss teeth morning and night, and so on.

Table 2: Mean responses on the problems household encounter in personal hygiene practices (N=196)

S/N	Perceived problem among members of households	$\bar{x}$1	$\bar{x}$2	$\bar{x}$3	$\bar{x}$g	SD	Remark
1	People have body Odour	2.61	2.70	3.63	2.97	0.09	Agreed
2	People have bad breath	2.73	2.80	3.18	2.90	0.07	Agreed
3	Dental diseases are not uncommon	2.50	3.00	3.56	3.02	0.13	Agreed
4	Athletes foot disease is not uncommon	2.55	2.80	3.50	2.95	0.07	Agreed
5	People usually feel run down without being sick.	2.83	2.80	3.83	3.15	0.08	Agreed
6	Many people suffer typhoid infection	2.96	2.60	3.11	2.85	0.08	Agreed
7	Hepatistia A diseases kills many people.	2.98	2.50	2.50	2.66	0.11	Agreed
8	Staph infections are common	3.63	2.70	2.45	2.92	0.09	Agreed

Table 2 reveals that all the identified problems were rated above 2.50 cut-off point set for the study. All the items are therefore, regarded as problems that could be encountered by the members of the households due to poor personal hygiene practices adopted in area of study.

Table 3: Mean responses on the strategies of alleviating problems which households face in Igbo-Etiti Local Government Area (N =196).

S/N	Strategies for alleviating household problems in personal hygiene practices	$\bar{x}$ 1	$\bar{x}$ 2	$\bar{x}$ 3	$\bar{x}$ g	SD	Remark
1	Members of household to take bath morning and night with good soap every day.	2.60	2.70	2.80	2.70	0.08	Agreed
2	Brush and floss teeth regularly	2.70	2.55	2.60	2.60	0.65	Agreed
3	Wear clean clothes	2.80	2.80	2.85	2.82	0.74	Agreed
4	Wash hand with warm water and anti-bacteria soap	2.70	2.80	3.00	2.83	0.92	Agreed
5	Use hand sanitizer frequently.	2.50	2.65	2.70	2.61	0.87	Agreed
6	Apply good quality linen spray	2.80	2.80	2.70	2.76	0.75	Agreed
7	Keep both finger and toe nails trimmed.	2.70	2.50	2.60	2.60	0.99	Agreed
8	Trim beard and hair regularly	2.90	2.80	2.55	2.75	0.76	Agreed
9	Wash clothes after wearing it each time.	2.80	2.90	3.00	2.90	0.78	Agreed
10	Wear under wears once and wash immediately	2.90	2.80	2.60	2.76	0.91	Agreed

Table 3 shows that all the ten items suggested were rated above 2.50 cut-off points for the study. The ten items are therefore considered strategies to alleviate perceived problems encountered by households due to improper personal hygiene practices adopted.

Discussion of Findings

Concerning personal hygiene practices among households, result in table I revealed that twenty one items raised, seventeen met the cut-off point set for the study. The members of the households do not take bath morning and night, on daily bases, use anti-bacteria soap to bath, do not trim hair regularly, do not shave armpit and beard regularly, brush and floss teeth regularly, do not use warm water and anti-bacterial soap to wash hands, apply deodorant often, use anti bacteria soap to bath among others. In line with the result, Manuel (2017) noted that irregular bath taking and poor teeth care are observed often among rural dwellers. He further noted that men, especially those in rural areas, regard spray of linen as a waste of money and time. Manual (2017) further stated that some workers nauseate colleagues at work because of dirty clothes and poor hygiene.

The finding also revealed that finger and toe nails are not property trimmed in a regular bases. This is in line with Hayden (2015) that women do not regard trimming of finger and toe nails as personal hygiene practice, keeping finger and toe nails trimmed and clean is very important to reduce spread of diseases and infections. Personal hygiene cut across, hair, finger feet, oral care and even choice of Cologne (Manuel 2017).

It was also revealed that the household members do not always wear clean clothes, wash under wears after every use, wash clothing with high quality detergent in lukewarm water after every use, remove stains on clothes immediately it is noticed on a dress and so on. Environmental Health Manual (2016) reported that dirty clothing become unpleasant since people wear one garment for several days without washing it. Sweat in contact with dust and dirty stick to the body and cause body odour but clothes washed in good detergent with lukewarm water and dry under sun are free from bacteria and odour. Moreover, clean clothing improves individual's appearance and self-esteem.

Result in Table 2 showed that the respondents agreed on all the eight identified items as the perceived problems encountered as the result of personal hygiene practice adopted by households in the area of study. People have body odour, bad breath dental diseases, cold and flu, staph infections among others. This finding agreed with Hobbs and Robert (2016) who maintained that body Odour results due to interaction of bacteria and sweat produced by the apocrine glands, the unwanted sweat produce smell, commonly associated with body odour. Hobbs et el also noted that dirt body and environment produce smells and makes one uncomfortable. The findings is also in line with American Dental Association (2016) report that bad breath develops due to poor and personal mouth hygiene, that bacteria thrive on the particles of foods that stick on the teeth or that the food rot and produce stink odour. The American dental association also reported that improper care of the teeth cause irritation to the gum resulting gum inflammation and destruction of the teeth, and formation of plague on the teeth which damages the enamel and makes teeth unattractive.

The findings in Table 3 showed items on alleviation of perceived problems of household members from adopted personal hygiene practices in the area of study. The mean scores of the responses are all above cutoff point for the study. This means that all the items raised on the strategies to solve problems in the personal hygiene practices in the area of study were agreed upon. Members of the household should take bath at least two times daily, wear, clean clothes, wash hand with warm water and anti-bacteria soap, use hand sanitizer, apply good quality deodorant, trim both finger and toe nails often, trim hair and beard regularly, brush and floss teeth regularly among others. These findings were substantial by Hansen (2017) that the hazard caused by improper personal hygiene could be controlled to large extent by regular bath with quality soap. Hansen also maintained that night bath removes sweat and dirt's accumulated during the day.

The finding also showed that wearing of clean clothes helps to solve the problem of personal hygiene. This finding agreed with (Kimberly, 2018) who maintained that clean clothing and appropriate wear promote self-esteem and avoid social embracement. An individual is addressed the way he or she dressed in a public. Wearing of clean clothes is therefore, very important to life. (Roose, Spisma, Van Daalen and Sigeling 2010) suggested that a dentist should be visited at least once in year for proper examination of the functionality and health position of the teeth. Healthy clean teeth makes individual to eat varieties of foods, cheerful and attractive in the society.

The finding is also in line with Cheryl (2017) that application of deodorant especially, deodorant with cologne, is very important to people at all ages in a family. He maintained that individuals should mix-up several scent to avoid being immune to one scent. Proper hand washing and trimmed hair is also important in the area of study. Centre for Disease on Control and Prevention (2015) reported that hair trimmed half an inch every three to four weeks appear healthy and attractive. Centre for Diseases control and prevention also maintained that washing of hands with clean running water and soap helps to reduce the amount of bacteria on the skin and spreading of communicable diseases.

Conclusion

Personal hygiene is not properly practiced by members of households in Igbo-Etiti local government area. People wear dirty clothes, carry unshaved hair and beard, do not have enough sleep every night, do not brush and floss teeth morning and night daily among others. Rather people wear one underwear/lingerie for several days unwashed. The implication of adoption of poor personal hygiene practices include body odour, breath and other social and psychological challenges. These problems can be alleviated through regular bath at least two times daily, proper care of the teeth and hand care.

Recommendations

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

1. Hygiene talk programme should be organized for house holds to sensitize them on the need for healthy personal hygiene practices.
2. Public awareness education campaign should be carried out to educate rural dwellers on the personnel hygiene practices during annual general returns such as October and August return for men and women respectively.

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JHER Vol. 26 No. 2 December 2019, pp. 149 - 157

Proximate Analysis and Sensory Evaluation of Yellow Maize-Based *Aadun* Fortified with Soybean Sweetened with Sugar

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Abstract

This study investigated proximate analysis and sensory evaluation of yellow maize-based *Aadun* fortified with soybean sweetened with sugar. Two objectives were raised and the products were in different percentages of 100% yellow maize used as the control, 90% yellow maize and 10% soybean, 80% yellow maize and 20% soybean, 60% yellow maize and 40% soybean, 50% yellow maize and 50% soybean, 40% yellow maize and 60% soybean with the addition of sugar (47gm), dried pepper (8gm), and palm oil (174gm) at constant rate using (AOAC 2005) method. Nine-point hedonic scale by 20 respondents was used and tested with ANOVA. The result of proximate composition showed ranged for moisture as 9.08% to 9.87%, 4.24% to 5.48% for ash, 18.74% to 19.55% for fat, 2.71% to 3.41% for fiber, 9.75% to 22.26% for protein and 41.25% to 53.76% for carbohydrate. The result of the sensory evaluation showed that sample ASS3 was the most preferred. In conclusion *Aadun* fortified with soybean and sweetened with sugar can be produce successfully. It was recommended that *Aadun* fortified with soybean should be introduced as snacks to the consumers at homes in schools and for entrepreneurial and wealth creation in Nigeria.

Keywords: *Aadun*, Proximate, Sensory, Acceptability, Soybeans, Entrepreneurial

Introduction

Aadun is a savoury snack of the Yoruba origin. It is a combination of roasted corn, palm oil and salt. *Aadun* actually translated to "sweetness" but the snack is a complete savoury. It is an energy giving snacks predominantly produced and commonly consumed in Yoruba speaking areas of south western Nigeria. It is known for its reddish colour, ease of disintegration in the mouth, fine texture and saltiness. It could be used for traditional marriages, naming ceremonies and eaten in the past by warriors, children, women and people of all ages in Yoruba land (Adedokun, 2006).

In Nigeria especially among the Yorubas, the production of *Aadun* has been limited to yellow maize flour and palm oil with the addition of salt despite the nutritional deficiency of yellow maize in lysine and tryptophan amino acids. The yellow maize grain will go through roasting and milling and then mixed with palm oil with addition of salt. The roasted yellow maize will form lumps and solidify. The solidified yellow maize is referred to as *Aadun* which is may be wrapped in leaves and consumed (Abdulrahaman and Kolawole 2006).

Aadun contains approximately 72% starch, 10% protein and 4% fat, supplying an energy density of 365 Kcal/100g (Ranum, Pena-Rosas, & Garcia-Casal, 2014) which may not be enough to provide adequate protein for the individual. Therefore, soybean which is a leguminous product was added to increase the nutritional value that was lacking in yellow maize based *Aadun*.

Soybean is a leguminous vegetable of the pea family consists of more than 36% protein, 30% carbohydrates, and excellent amounts of dietary fibre, vitamins and minerals. It also consists of 20% oil, which makes it the most important crop for edible oil. (Institute of International Tropical Agriculture, 2009). This implies that addition of soybean with corn to produce *Aadun* might provide the necessary protein that was lacking in corn, sweetened with sugar instead of salt to give a sweeter taste to the product.

Sugar is the generalized name for sweet, short-chain, soluble carbohydrates. They are composed of carbon, hydrogen, and oxygen. There are various types of sugar derived from different sources. Simple sugars are called monosaccharide and include glucose (also known as dextrose), fructose, and galactose (*US Department of Agriculture, 2011*). The addition of sugar changes the salty traditional taste of *Aadun*.

Palm oil which is edible oil is derived from the palm fruit tree. The oil is extracted from the pulp of the fruit of oil palm which is naturally reddish in colour because of the high level of beta-carotene. Kheri, (1987) and Berger, (1992) cited in Imoisi, Ilori, Agho, Ekhator (2015) stated that Palm oil contains several saturated and unsaturated fats in forms of glyceryl laurate (0.1% saturated), myristate (1%, saturated), palmitate (44%, saturated), stearate (5% saturated), oleate (39% monounsaturated), linoleate (10% polyunsaturated) and linolenate (0.3% polyunsaturated). Palm oil is the largest natural source of tocotrienol. The addition of Palm oil to *Aadun* will give a reddish colour that may attract the consumption of the product. In spite of this production, consumers of yellow maize-based snack in large quantity may be faced with large intake of carbohydrate that may result into malnutrition, vitamin and protein deficiency common in yellow maize.

Idowu and Adedokun (2011) in their study titles process technology, chemical composition and quality of "Aadun" maize- based Nigerian snack fund out that *Aadun*" generally had low total aerobic plate (1.2x 103 - 3.3x103 cfu/g) and fungi (< 10 sfu/g) counts. It contains low microbial load and it is rich in calorie, phosphorus and magnesium therefore is a need to standardize its ingredient composition by fortifying with high content leguminous product such as soya beans to increase the nutritional value of *Aadun* and to optimize its process through technology and packaging in order to upgrade the snack to an internationally acceptable product. Also in the study of Akinola and Enujiugha (2017), titled Physicochemical and sensory qualities of "*Aadun*" a maize based snack supplemented with defatted African oil bean seed flour, they found out that the substitution of maize with African oil bean seed flour influence the mineral content of a maize based snack . For the purpose of this study, *Aadun* was fortified with soybean because of the high content in lysine and tryptophan to improve the quality and nutrient value of the product. The production could facilitate wealth creation through entrepreneurship.

Objectives of the Study

This study investigated the sensory evaluation and proximate analysis of yellow maize-based *aadun* fortified with soybean and sweetened with sugar. Specifically the study,

1. analyzed the proximate composition of *Aadun* with soybean and (YM) flour sweetened with sugar.
2. determined the sensory attributes of *Aadun* fortified with soybean sweetened with sugar.

Method and Materials

***Materials*:-**The ingredients required for *Aadun* include dried (YM), soybean, dried pepper, sugar, palm oil and leaves procured from Ipata market in Ilorin, Kwara state Nigeria.

***Preparation of Materials* :-**To formulate the fortification, 2.93kg of dried (YM) was washed, dried, grilled and milled while 1.250 of soybean was also sorted, washed, soaked in water overnight, dried, grilled and milled.

Recipes and Preparation Procedure

700g of (YMF) at 100% was the control

630g of (YMF) at 90% was mixed with 70g of soybean flour at 10%

560g of (YMF) at 80% and 140g of soybean flour at 20%

420g of (YMF) at 60% and 140g of soybean flour at 40%

350g of (YMF) at 50% and 350g of soybean flour at 50%

270g of (YMF) at 40% and 240g of soybean flour at 60% to obtained different percentages of flour blends.

Procedure for Preparation: This involved the following:

Production of roasted yellow maize flour: the yellow Maize was washed, dried and roasted in the laboratory oven at 70˚C for 15 min and dry milled to a particle size to obtain roasted maize flour according to Akinola and Enujiugha (2017).

Production of roasted soybean flour: soybean was sorted, soaked in water for about 8h to remove all the impurities. Then it was roasted and dried at 60 C until moisture content was removed and dry milled to obtain roasted soybean flour.

Production of Aadun: Composite flours (90:10 (ASS2), 80:20 (ASS3), 60:40 (ASS4), 50:50 (ASS5), 40:60 (ASS6)100% (ASS1) 100:0) were produced from the ratios of roasted maize flour and soybean flour. *Aadun* was produced by mixing the different percentages of flour blends samples with sugar (47gm), dried pepper (8gm), and palm oil (174gm) at constant rate. The mixtures were cooled and wrapped in leaves.

Summary formulation of Samples

ASS1 = 100% yellow maize the control

ASS2 = 90% yellow maize, 10% soybean

ASS3 = 80% yellow maize, 20% soybean

ASS4 = 60% yellow maize, 40% soybean

ASS5= 50% yellow maize, 50% soybean

ASS6 = 60% soybean, 40 yellow maize

Proximate and Chemical Analysis

The proximate composition of the *Aadun* samples was carried out using Association of Official Analytical Chemists (AOAC) 2005 method. This method of analysis is used to identify the nutritional composition such as crude protein, carbohydrate content, crude fibre, ash and fat present in yellow maize-based *Aadun*. Analyses were done for the six samples carried out in the food science laboratory, Department of Home Economics and Food Science, university of Ilorin.

Sensory Evaluation

***Selection of Panel*: -** Taste panel evaluation of *aadun* was carried out using 20 judges selected from the students of the Department of Home Economics and Food Science, University of Ilorin Nigeria, comprising thirteen (13) female and seven (7) male students respectively. The attributes that were evaluated are colour, taste, appearance, aroma, texture and overall acceptability. The samples were placed in transparent plates for ease accessibility.

***Instrument for sensory evaluation*:** A 9-Point Hedonic scale and a multiple comparison test according to (Dias, Faria, Mercadante, Bragagnolo & Benass 2007) was used to assess the acceptability of yellow maize based *Aadun* fortified with soybean sweetened with sugar. The sensory evaluation was carried out using the nine-point hedonic scale where 9= like extremely, 8= like very much, 7= like moderately, 6=like slightly, 5= neither like nor dislike, 4= dislike slightly, 3= dislike moderately, 2=dislike very much, 1=dislike extremely.

***Data collection procedure*: -** Coded sample were served at room temperature and judge by each panel using the nine-point hedonic scale. The panellists rated *aadun* in parameters using the nine-point hedonic scale where the samples were presented to panelists in a randomized order and were evaluated for appearance, taste, aroma, texture, and overall acceptability.

***Data Analyses techniques*:** All determination was carried out in duplicates. The data collection from the panelist was analyzed using descriptive percentages. Comparisons between sample treatment and the indices were done using analysis of variance (ANOVA) with a probability $p \leq 0.05$.

Findings

Table1: Result of proximate Composition of Enriched *Aadun* (dry basis)

Code	Moisture (%)	Ash (%)	Fat (%)	Crude Protein	Fibre (%)	Carbohydrate (%)
ASS1	9.87 $\pm0.007^{e}$	4.59$\pm0.141^{c}$	18.74$\pm0.007^{a}$	9.65$\pm0.141^{a}$	3.41$\pm0.141^{a}$	53.76$\pm0.141^{c}$
ASS2	9.74$\pm0.212^{d}$	4.40$\pm0.007^{b}$	18.86$\pm0.205^{a}$	11.85$\pm0.141^{b}$	3.31$\pm0.007^{a}$	51.88$\pm0.212^{e}$
ASS3	9.57 $\pm0.212^{c}$	4.24$\pm0.007^{a}$	19.05$\pm0.007^{ab}$	14.03$\pm0.141^{c}$	3.19$\pm0.141^{a}$	49.97$\pm0.354^{b}$
ASS4	9.32 $\pm0.141^{b}$	5.48$\pm0.007^{e}$	19.08$\pm0.007^{b}$	22.13$\pm0.141^{d}$	2.93$\pm0.141^{a}$	41.025$\pm0.212^{a}$
ASS5	9.29 $\pm0.141^{b}$	4.75$\pm0.007^{d}$	19.22$\pm0.007^{b}$	20.58$\pm0.141^{e}$	2.81$\pm0.141^{b}$	44.26$\pm0.141^{d}$
ASS6	9.08 $\pm0.141^{e}$	4.58$\pm0.007^{c}$	19.55$\pm0.007^{c}$	22.26$\pm0.141^{f}$	2.71$\pm0.007^{c}$	41.85$\pm0.354^{f}$

Means along the same subscripts are not significantly different ($p \leq 0.05$)

Key: ASS1 = 100% yellow maize (control), ASS2 = 90% yellow maize, 10% soybean, ASS3 = 80%

yellow maize, 20% soybean, ASS4 = 60% yellow maize, 40% soybean, ASS5= 50% yellow maize, 50% soybean, ASS6 = 60% soybean, 40% yellow maize.

Table 1 shows the proximate analysis results.

Moisture content: The moisture content of the *Aadun* samples ranged from 9.87% – 9.08%, sample ASS1 (90% yellow maize, 10% soybean) had the highest moisture content with the percentage 9.87% while sample ASS6 (40% yellow maize, 60% soybean) had the lowest amount of moisture percentage of 9.08%.

Ash Content: The ash content of the *Aadun* samples ranged from 4.24% – 4.75%, sample ASS5 (50% yellow maize and 50% soybean) had the highest ash percentage 4.75% while sample ASS3 (80% yellow maize and 20% soybean) had the lowest ash percentage 4.24%.

***Fat and Oil content*:** The fat content of the *Aadun* samples ranged from 18.74% – 19.55%. Sample ASS6 (40% yellow maize, 60% soybean) had the highest amount of fat and oil content 19.55% while sample ASS1 (100% yellow maize) with mean percentage of 18.74% had the lowest amount of fat and oil. Fat in food formulations binds the protein content and improve the mouth feel formation.

***Crude Protein Content*:** The protein content of the *Aadun* samples ranged from 9.65% – 22.26%. Sample ASS6 (40% yellow maize, 60% soybean) had the highest amount of protein content 22.26% while sample ASS1 (100% yellow maize) with mean percentage of 9.65% had the lowest amount of protein. The highest amount of protein derived from sample ASS6 might be as a result of the increased amount of soybean present in it.

***Carbohydrate Content*:** The carbohydrate content of the *Aadun* samples ranged from 53.75% – 41.85%, sample ASS1 (100% yellow maize) had the highest protein content with 53.75% and sample ASS6 (40% yellow maize and 60% soybean) had the lowest carbohydrate content with 41.85%. The high carbohydrate content present in ASS1 may be attributed to the high yellow maize percentage present in it.

Sensory Evaluation

Table 2: Result for Sensory Evaluation of Enriched *Aadun*

Sample	Colour	Taste	Appearance	Aroma	Texture	Overall acceptability
ASS1	6.95^{ab}	5.15^{a}	6.25^{a}	5.85^{a}	5.65^{a}	5.85^{a}
ASS2	7.55^{ab}	7.35^{c}	7.25^{a}	6.70^{b}	7.05^{b}	6.95^{bc}
ASS3	7.65^{b}	7.35^{c}	7.20^{a}	6.95^{ab}	7.20^{b}	7.65^{c}
ASS4	7.20^{ab}	6.80^{ab}	6.90^{a}	6.80^{b}	6.90^{b}	7.05^{bc}
ASS5	7.00^{ab}	6.75^{ab}	7.25^{a}	6.70^{b}	7.25^{b}	7.10^{bc}
ASS6	6.60^{a}	6.30^{b}	6.50^{a}	6.70^{b}	6.55^{b}	6.75^{b}

Means along the same subscripts are not significantly different ($p \leq 0.05$)

Key: ASS1 = 100% yellow maize (control), ASS2 = 90% yellow maize, 10% soybean, ASS3 = 80% yellow maize, 20% soybean, ASS4 = 60% yellow maize, 40% soybean, ASS5= 50% yellow maize, 50% soybean, ASS6 = 60% soybean, 40% yellow maize

Table 2 reveals the sensory analyses of *Aadun* samples.

Colour: There was a significant difference between the samples, the sample ASS6 (40% yellow maize and 60% soybean) was the least preferred with the mean score of 6.60 and the most preferred in term of colour was ASS3 (80% yellow maize and 20% soybean) with the mean score of 7.65. The result could be because ASS6 had the highest amount of soybean.

Taste: Sample ASS1 (100% yellow maize) was the least preferred in term of taste with the mean score 5.15 while sample ASS3 (80% yellow maize and 20% soybean) and sample ASS2 (90% yellow maize and 10% soybean) had the most preferred taste with mean score of 7.35. The preference could be because sample ASS3 and ASS2 had a small percentage of soybeans.

Appearance: Sample ASS2 (90% yellow maize and 10% soybean) and ASS5 (50% yellow maize and 50% soybean) had the most preferred appearance with the mean score of 7.25 and the sample ASS1 (100% yellow maize) with the mean score 5.85 was the least preferred.

Aroma: Sample ASS3 (80% yellow maize, 20% soybean) with the mean score 6.95 was the most preferred, while sample ASS1 (100% yellow maize) with the mean score 5.65 was the least preferred. This was due to sample ASS3 having a small percentage of soybeans.

Texture: Sample ASS5 (50% yellow maize and 50% soybean) with the mean score 7.25 was the most preferred in term of texture and samples ASS1 (100% yellow maize) with the mean score 5.65 was the least preferred. This could be because sample ASS5 has the same percentage of yellow maize and soybean.

Overall acceptability: The most acceptable of the *Aadun* samples was sample ASS3 (80% yellow maize, 20% soybean) with the mean score 7.65 and ASS1 (100% yellow maize) was the least acceptable with the mean score 5.85 and this could be because ASS3 was the most preferred in term of taste, appearance and aroma.

This result indicated that the fortification of *Aadun* with soybean and sugar increased the consumer's acceptance of the product in terms of taste, colour, appearance, texture, aroma and its overall acceptability.

Discussion of Findings

The highest amount of fat derived from sample ASS6 is as a result of the composition in the sample (40% maize, 60% soybean), the various samples have significant amount of fat and oil but the increase soybean percentage is what makes the crude fat differ from other samples. This finding agrees with the findings of Onimawo and Akubor, (2012) and Balogun and Olatidoye, (2010) that Oil absorption capacity (OAC) is an indication of the rate at which protein binds to fat in food formulations. Fat acts as a flavour retainer and helps improve the mouth feel of products. This finding is also in agreement with the findings of Lawal and Enujiugha (2016) which stated that chemical composition, functional and sensory properties of maize based snack *elekute* enriched with African oil been seed sample with 60% maize, 40% soybean had the highest fat content.

The findings of Ikya, Gernah and Sengev (2013) also agreed that proximate composition, nutritive and sensory property of fermented maize and full fat soy flour, sample D with 70% maize and 30% soy flour had higher protein content than all the samples, this increase is due to the addition of plant protein (soybean). The study of Abegunde *et al*., (2014) is in agreement that the quality of evaluation of maize chips (kokoro) fortified with cowpea flour also adds to the increase of protein to maize. The findings showed that carbohydrate content decreased with increase in the level of cowpea while the level of protein increased with the increase in the level of cowpea flour. The difference between the samples was minimal. The author's further fund out that the quality evaluation of maize chips (kokoro) fortified with cowpea flour that is, the sample with 100% maize had the highest moisture content percentage while that of 60% maize and 40% cowpea flour had the lowest moisture percentage.

The proximate composition ranged from 9.08% to 9.87% for moisture, 4.24% to 5.48% for ash, 18.74% to 19.55% for fat, 2.71% to 3.41% for fiber, 9.75% to22.26% for protein and 41.25% to 53.76% for carbohydrate. This finding is in agreement with the findings of Onabanjo, (2007) that Ash content of food material represents the inorganic or mineral constituents of the foods. Proteins from animal foods are good sources of ash in that they contains adequate supply of calcium, phosphorus and iron, which are essential for the formation of bones, teeth and blood component. The ash content is the mineral present in *Aadun*. This finding agrees with the findings of Olaoye, Onilude, and Idowu (2006) that production of *Agidi*-a fermented cereal product from maize flour substituted with soy flour increase the nutritional Value of the maize. The ash content of produced *Agidi* increased with increasing substitution with African oil bean seed flours. The ash content is indicative of minerals present in the snack.

The protein from the *aadun* produced from 100% maize was significantly ($p \leq 0.05$) lower than other samples. The fat content from the *aadun* produced from 60% maize and 40% soybean was significantly ($p \leq 0.05$) higher than other samples. The carbohydrate content of the *aadun* produced from 100% maize was significantly ($p \leq 0.05$) higher than other samples. The study showed that soybean flour can successfully be used in the production of *aadun*. The sensory evaluation of samples ASS3 showed that the samples fortified with 20% soybean was most preferred in term of aroma, texture, overall acceptability, colour, and appearance.

The development of these yellow maize-based snacks through value added processes will establish appropriate and optimum conditions for improving the product quality. It may offer wider utilization which may lead to job creation both at home and at industrial level. There is a significant difference in the taste aroma, appearance, texture and overall acceptability of *Aadun* fortified with soybeans compared with the 100% maize sample.

Conclusion

Based on the findings it was concluded that the best *Aadun* sample was sample ASS3 made from 80% yellow maize and 20% soybean; it was the most acceptable in term of taste, aroma, appearance and overall acceptability. The study also showed that although all the samples with soybean showed superiority over the control sample in terms of protein, fat and taste, the sample ASS5 was the most preferred in terms of color and texture. Therefore yellow maize flour and soybean flour will be very suitable for the production of *Aadun* that would be richer in protein than the traditional *Aadun* made from yellow maize only. The study showed that soybean flour can successfully be used in the production of *Aadun* to increase the nutritive value.

Recommendations

The following recommendation are made base on the findings.

1. Production of *Aadun* fortified with soybean and sweetened with sugar should be encouraged for the nutritional benefit to the consumers.
2. *Aadun* fortified with soybean and sugar could be sold as snacks to consumers at homes, schools, supermarket and the localities in Nigeria.
3. Preparation, production and packaging of *Aadun* should be modified using different packaging methods such as cellophane bags, plastic containers sealed and labeled. This could be a source of job creation and youth empowerment programme in Nigeria.

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JHER Vol. 26 No. 2 December 2019, pp. 158 - 166

Prevalence and Care Practices of Epileptic Seizure among Children in Orphan and Vulnerable Children Homes in Abeokuta, Nigeria

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Abstract

This study focused on care and prevalence of epileptic seizure among children in orphans and vulnerable children homes in Abeokuta. Specifically, it determined: prevalence of epileptic seizure across gender and age; involvement in the care of victims and ascertain the attitude of uninfected children towards the victim. It was a survey research. Two types of questionnaire were used for data collection. One was completed by caregivers while the other was completed by the Admin officers/managers. A complete enumeration of 105 respondents comprising of personnel's who are directly involved in the care of the children in the selected registered homes was done. Data were analysed using frequencies, percentage, mean and standard deviation. Results show that epileptic seizure in orphan and vulnerable children's home is common among the male in their early adolescence period (10-16 years). Prevalence rate as at 2016 stands at 2.92%; consisting of 4.28% of the total male children population and 0.96% of the total female children population.

Key words: Prevalence, Epileptic, Seizure, Orphans, Vulnerable, Children

Introduction

Prevalence of a disease or condition measures the tendency of having such disease or condition therefore; prevalence number is the total number of cases of a disease or condition existing in a population at a given time (Joint Epilepsy Council, 2011). The brain contains millions of nerve cells called neurons that send electrical charges to each other. A seizure occurs when there is a sudden and brief excess surge of electrical activity in the brain between nerve cells. According to Joint Epilepsy Council (2011) Epilepsy is a tendency to have recurrent seizures. When there is a sudden and brief excess surge of electrical activity in the brain between nerve cells over prolonged period of time the result is epileptic seizure. Epileptic activity causes a temporary disruption to the way the brain performs its functions. It can affect anyone, at any age, from any walk of life. There are over 40 different types of epilepsy consisting of at least 29 syndromes and a further 12 or so clinically distinct groups defined by the specific cause or underlying cause (Berg, Berkovic, Brodie, Buchhalter, Cross, Van Emde Boas & Scheffer 2010). Seizures may be caused by developmental problems before birth, structural problems, vascular problems, metabolic conditions, infections and idiopathic causes (CHOC Epilepsy Center, 2004). Epilepsy is the third most common neurological disorder with an estimation of about 50 million people suffering from epilepsy. About four fifth of these are thought to be in developing countries (WHO, 2000; Joint Epilepsy Council, 2011). A large proportion of the 50 million people affected by epilepsy remain untreated (Scott, Lhatto & Sander 2001).

Nigeria defines an orphan as a child (0-17 years) who has lost one or both parents. A child is vulnerable if, because of the circumstances of birth or immediate environment, is prone to abuse or deprivation of basic needs, care and protection and thus disadvantaged relative to his or her peers (FMWA& SD 2008). Based on 2008 Situation Analysis in Nigeria, an extract from Orphans and Vulnerable Children-CARE (OVC-CARE) project, a research carried out between 2004 and 2008 funded by US Agency for International Development (USAID) and implemented by Boston University Centre for Health and Development: there are 17.5 million orphans and vulnerable Children (OVC).

UNICEF and UNAID (2002) mentioned the following effects of sickness and death of parents upon children as economic hardship, lack of love, care and affection, withdrawal from school, psychological distress, loss of inheritance, increased abuse and risk of HIV infection, malnutrition, illness, stigma, discrimination and isolation and agreeing to Folaranmi and Ogunkanmi (2015) modern efforts in resolving the problems of children in conflict of loss of parents have been geared towards provision of alternative home (orphanage) and adoption of such children and the aim of alternative home (orphanage) is to provide shelter, care, love and protection to orphan and vulnerable children.

From the list of registered orphan and vulnerable children's (OVC) home obtained by the researchers from the Ogun state Ministry of Women affairs and Social Development; as at 2015 there were twenty fully registered orphan and vulnerable children's home in addition to two owned by the government in Ogun state. It could be deduced that the efforts of Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs) and Faith Based Organizations (FBOs) cannot be overemphasized in the care of orphans and vulnerable Children in our society because in Ogun state the government under the supervision of the Ministry of Women Affairs and Social Development owns two orphan and vulnerable children homes while many of the institutional care are owned by individuals, Non-Governmental Organizations (NGOs), Faith Based Organizations (FBOs) and Community Based Organizations (CBOs) sponsored by philanthropist and charity organizations.

According to Johnson, Awojobi, Osisanwo, Appah, Ezeudu, & Agham (2014) Orphans constitute one of the poorest, most marginalized and socially excluded set in any society; they are subjected to extreme social, political, financial as well as cultural marginalization and they also maintained that orphans are deprived of opportunities in all aspects of life, including access to essential services such as education and health care. More so, provision for the medical needs of the individual child in the orphan and vulnerable children home is important putting into account the differences in ailment, disability, impairment, treatment plan and also differences in the approach adopted in order to manage them.

Most research work on epilepsy such as a review by Akinsulore & Adewuya (2010) on psychosocial aspects of epilepsy in Nigeria; Janet (2014); Gender issues in Epilepsy; Ogundele &Dawodu (2013); Adherence to Antiepileptic drugs and many other researches on the prevalence, management practices, belief, knowledge and so on focused on countries, states, community or society. Folaranmi & Ogunkanmi (2015) also noted in their research on child detachment as a correlate of social well-being of orphan and vulnerable children in Ibadan and Abeokuta that statistics are scanty and more research needs to be done to understand the problems and roles of orphan and vulnerable Children homes but this research has been able to provide a range of relevant data on care and prevalence of Epileptic Seizure has it pertains to this special group (Orphan and Vulnerable Children) of our community.

Purpose of the Study

This study focused on care and prevalence of epileptic seizure among children in orphans and vulnerable children homes in Abeokuta. Specifically the study determined;

1. prevalence of epileptic seizure disorder across gender and age among children in orphan and vulnerable children homes in Abeokuta
2. special care given to epileptic seizure victims
3. caregiver's perceived attitude of uninfected children towards the victims.

Research Questions

The study provides answers to the following questions:

1. How many male\female displayed seizure and at what age?
2. What are the special cares given to epileptic seizure victims?
3. What are the caregiver's perceptions of the attitude of uninfected children towards epileptic seizure victims?

Methodology

Design of the study: Survey designs was used to study care and prevalence of epileptic seizure among children in Orphans and Vulnerable Children (OVC) homes in Abeokuta, Ogun state, Nigeria

Area of the study: The study was carried out in registered orphan and vulnerable children's homes in Abeokuta area of Ogun state, Nigeria.

Population for the study: The population for this study is 105 comprised of seven groups; Health care officers (Chief health attendants, Health attendants, and Nurses); Admin officers/managers (Admin manager, Head aunty, Assistant head aunty and House manager); Social welfare officers (Social welfare officer, Social welfare assistants, Social workers and Supervising officers); Cooks/ caterers (Cooks and Cook assistants); Teachers; Caregivers and Volunteers which are male and female within the age of 20-50 years, with or without no formal education but must have spent 5 months and above in being involved in the care of children in the selected registered orphan and vulnerable children (OVC) homes in Abeokuta, Ogun state, Nigeria.

***Sample for the study*:** A complete enumeration of 105 respondents comprising of 24 Health care officers, 4 Admin officers/managers, 8 Teachers, 12 Social welfare officers, 51 Caregivers, 3 Cooks and 3 Volunteers in the selected registered orphan and vulnerable children home was done. Out of the eight registered orphan and vulnerable children home in Abeokuta Ogun state, Nigeria; four which are Stella Obasanjo Children's Home (SOCH), Juvenile correctional home (JCH), Gideon Orphanage Home and Stephen Centre were selected for this research using their year of establishment (not less than two years old) as a criteria.

***Instrument for data collection*:** Questionnaire was used for the survey research. The questionnaire/interview guide was of two types: Type 'A' elicited information from all the personnel's involved in the care of the children in the orphan and vulnerable Children (OVC) homes. Type B was for the organization to be completed by one of the Admin officers/ managers; it obtains data on the prevalence of epileptic seizure in the orphan and vulnerable children home across gender and age. Interview schedule was used for the illiterate respondents.

***Method of Data Collection*:** A frequent three week visit was made to all the selected registered homes so as to interview the respondents; meeting respondent during the morning and afternoon duty rotation. Respondent with educational qualification of at least secondary school certificate were allowed to fill the questionnaire themselves. Playing with the children and assisting the caregivers in their caregiving service were used as a motivation for them to fill and allow for the interview section.

***Method of Data Analysis*:** Frequencies, percentage, mean, standard deviation and ranking was used to analyze variables.

Findings of the study

The results are hereby presented in Tables 1– 3 based on the research questions.

Table 1: Percentage Responses on Prevalence of Epileptic Seizure across Gender

	Male		Female		Total	
Indicators of Prevalence	**Freq.**	**%**	**Freq.**	**%**	**Freq**	**%**
Total number of children in the selected Orphan and Vulnerable Children's home in Abeokuta between 2005-2015	293	58.95	204	41.05	497	100.00
Within ten years (2005-2015) how many children show signs and symptom of epilepsy	24	4.83	6	1.21	30	6.04
Within ten years (2005-2015) how many children were medically diagnosed of epileptic seizure	21	4.23	5	1.01	26	5.23
Number of death of children with epilepsy recorded between 2005-2015	2	0.40	0	0	2	0.40
Total number of children in selected Orphan and Vulnerable Children's home in Abeokuta as at August 2016.	304	59.26	209	40.74	513	100.00

Number of children showing signs/symptoms of epilepsy as at July 2016.	13	2.53	2	0.39	15	2.92
Number of children medically diagnosed of epileptic seizure as at July 2016.	13	2.53	2	0.39	15	2.92
The number of children on antiepileptic drugs (AEDS) as at July 2016.	13	2.53	2	0.39	15	2.92
The number of children on other form of care/care apart from drugs as at July 2016.	0	0	0	0	0	0

Table 1 shows that a total number of 497 children were present in the selected Orphan and Vulnerable Children's home between 2005 to 2015 (58.95% Male and 41.05% Female) and 6.04% (80% Male and 20% Female) of the children within that ten years (2005-2015) shows signs/symptoms of epilepsy and within that year range only 5.23% (80.77% Male and 19.23% Female) of the children showing the signs/symptoms of epilepsy were medically diagnosed of epileptic seizure and 0.40% (100% Male) death of epileptic seizure victim was recorded during that year.

Table 1 also reveals that as at August 2016 in the surveyed Orphan and Vulnerable Children's home a total of 513 (59.26% male and 40.74% female) children were present in the home of which 2.92% (86.67% male and 40.74% female) of her population shows signs/symptom of epilepsy and all the victims were medically diagnosed of the disorder and were all placed on antiepileptic drugs.

As at 2016 the age distribution of the children who were with epileptic seizure across the male gender reveals that 23.08% are within the age range of 7 to 9 years, 30.77% are within the age bracket of 10-13 years, 30.77% within the age of 14-16 years and 15.38% are within the age range of 17-19 years while across the female gender 50% were 10 years old and 50% were 15 years old.

Table 2: Percentage Responses on Special Care Given to Epileptic Victims

S/N	Indicators of Care	Yes F (%)	No F (%)	Rank
1	We give drugs (antiepileptic drug) to all children with epileptic seizure	89(84.8)	16(15.2)	1ST
2	We use the show of signs and symptom only to diagnose epilepsy	87(82.9)	18(17.1)	2ND
3	There is a regular purchase of appropriate drugs for victims	84(80.0)	21(20.0)	3RD
4	Medical personnel diagnosed our infected children for epilepsy	80(76.2)	25(23.8)	4TH
5	We informed the teachers about the child's health condition	79(75.2)	26(24.8)	5TH
6	Children with seizure are taken to hospital regularly for routine check up	79(75.2)	26(24.8)	5TH
7	Victims are taken for emergency care after episode in case of first occurrence or change in the mode of seizure occurrence	78(74.3)	27(25.7)	7TH

8	Training, seminar, talks etc. are provided for caregivers on epilepsy	78(74.3)	27(25.7)	7TH
9	We allow children with seizure to go to school	81(77.1)	24(22.9)	9TH
10	Children with epilepsy are sometimes absent from school	81(77.1)	24(22.9)	9TH
11	Other children in the home are being educated about seizure	73(69.5)	32(30.5)	11TH
12	Constant complain are being lodged to the medical personnel about the side effect of the drug used by victims	73(69.5)	32(30.5)	11TH
13	There is a special book where we record episode occurrence e.g. epilepsy log book	68(64.8)	37(35.2)	13TH
14	There is a special care and monitoring of the food taken by victims by a dietitian and a medical personnel	64(61.0)	41(39.0)	14TH
15	There are supportive gadgets for the children with epilepsy e.g. helmet, vagus nerve stimulator	59(56.2)	46(43.8)	15TH
16	There is special diet plan for seizure victims	46(43.8)	59(56.2)	16TH

Key: F= Frequency; STD=Standard deviation %=Percentage

Table 2 deals with various aspects of care or care given to the victims of epileptic seizure. It shows that among the parameters used to measure the special care given to children with epileptic seizure in the selected orphan and vulnerable children's home, medical assistance majorly prompt drug administration as 84.8% of caregivers affirmed that drugs (antiepileptic drugs) are given to all the children with epileptic seizure and frequent purchase of drugs ranked high (1ST and 3rd respectively) while provision of special diet plan, provision of supportive gadgets, provision for diet monitoring by a dietitian or medical doctor, recording of episode occurrences, educating other uninfected children, constant lodging of complains on antiepileptic drug side effects, victims school attendance, making provision for episode occurrence in school and provision of training and seminars to caregiver's on epilepsy ranked low.

Table 3: Percentage Responses on Caregivers Perceived Attitude of Uninfected Children towards Victims

S/N	Attitude of Uninfected Children	True F (%)	False F (%)	Mean	STD	Rank
1	Other children helps the victim after gaining consciousness	94(89.5)	11(10.5)	1.895	.308	1ST
2	Other children identify with children during episode occurrence in school	89(84.8)	16(15.2)	1.848	.361	2ND
3	Other children calls care of the caregivers by referring to previous episodes occurrence	85(81.0)	20(19.0)	1.810	.395	3RD
4	Other children eats together with the victim after episode	84(80.0)	21(20.0)	1.80	.402	4TH
5	Other children during	66(62.9)	39(37.1)	1.629	.486	5TH

	misunderstanding refers to victims episode occurrence					
6	Other children backbite about the victims health condition	60(57.1)	45(42.9)	1.552	.519	6TH

Key: F= Frequency; STD=Standard deviation %=Percentage

Table 3 shows the caregivers' perceived attitudes of uninfected children towards victims. Among the parameters used to ascertain the caregiver's perceived attitude of uninfected children; other children helping victims after gaining consciousness (89.5%) ranked 1st, identifying with affected children in school 84.8%. and calling the care of caregiver's by referring to previous episode occurrence 81.0% ranked high ranked 2nd and 3rd respectively while eating together with victims after episode occurrence 80.0% ranked 4th, referring to victim's episode occurrence during misunderstanding and backbiting about victims health condition ranked low.

Discussion of findings

From table 1 it could be seen that 2.92% of the entire population in the home has epileptic seizure of which the male children (4.28%) carries the largest percentage and they are all medically diagnosed. The male that are most infected falls between the ages of 10-16 years. Janet, Mifsud (2014) in a review concluded that differences between men and women in epilepsy may be due to the influence of sex hormones on seizures and epilepsy, as well as due to changes in the endocrine system and levels of sex hormones by epileptiform activity. Also only drug was used to maintain all the children with the disorder, this negates what Danesi and Adetunji (1994) noted in their research that alternative medicine, especially spiritual healing, cannot be considered irrelevant in the management of epilepsy in Africa.

In like manner Mohammed Asif, (2013) in his review on the role of various vitamins in the patients with epilepsy concluded that a number of different dietary modifications, nutritional supplements, and hormones may help prevent seizures or improve other aspects of health in patients with epilepsy. Though he noted that in most cases, nutritional therapy is not a substitute for anticonvulsant medications. Also from the result of the trial of Neal, Hannah, Ruby, Lawson, Nicole, Geogianna, & Cross (2008) support the use of ketogenic diet in the treatment of children with intractable epilepsy.

From the result in Table 2 most of the organization support mostly in the area of medical (i.e. purchase of drug, regular drug administration etc.) and the show of signs and symptom could also be said to be their major diagnosis at the home level. There are still a good number of ways the organization can support the victim; giving them good first aid, availability of supportive gadgets and more so they can make available means which can enable them imbibe other therapy that can better improve the victims health for example dietary therapy because in a review on the nutritional therapy for epilepsy by Sancheti, Shaikh, Akhade, Shaikh, & Sathaye (2013) they discuss the current status of various dietary supplements (amino acids, minerals, antioxidants, vitamins, ketogenic diet, atkin diet and herbal therapy) and the probable mechanisms of their efficacies.

They concluded that nutritional treatment comprises a fascinating approach for the treatment of epileptic patients; although their knowledge about the correlation between epilepsy and its treatment with nutrition is in its infancy. Alan & Gaby, 2007 also noted that the ketogenic diet has been successful for many patients, but because of its highly restrictive nature and potential to cause significant adverse effects, its use is restricted to severe cases that fail to respond to other treatments but a less restrictive version of the ketogenic diet, the Atkins diet, has shown promise and deserves further study. Folaranmi & Ogunkanmi (2015) recommended in their research on child detachment as a correlate to social well-being of orphan and vulnerable children in Ibadan and Abeokuta, Nigeria that staff development training for proprietors and workers in orphanages to provide family like environment for orphans in their custody.

Majority of the respondents admitted that there is no notable discrimination against children with epilepsy as can be clearly seen in table 3 that ranging from helping after gaining consciousness to helping victims in school ranks high; although they do refer to previous episodes which often is for caregiver to gain clarity into what the child is reporting during episode occurrence. This is in line with the findings of Frank-Briggs & Alikor (2011) that more than 90% of parents and caregivers know about epileptic seizures and that of Mwini, Peter, Anthony & Dziedzorm (2016) when they concluded in their study that majority of mothers have good knowledge about febrile convulsion and its first aid interventions at home.

Conclusions

The study has investigated the care and prevalence of epileptic seizure among children in orphans and vulnerable children's home in Abeokuta area of Ogun State. The study revealed that the prevalence of epileptic seizure in orphans and vulnerable children homes has being on the reducing scale since the period under consideration in the study (2005-2016). Epileptic seizure is common among the male children in their early adolescence (10-16 years). The organizational support and involvement are mostly based on medical assistance: majorly provision of drugs and frequent purchase of drugs and the attitude of uninfected children can be perceived as not harmful to the victims.

Recommendations

Based on the findings, the following recommendations were made:

1. Research should be made on other forms of management that could be adopted for the management of the disorder.
2. Awareness should be made towards the adoption of other forms of practices that are available for the management of epileptic seizure.
3. Organization should work towards being involved in the provision of supportive gadgets for victims so as for the disorder not to affect the victim's school attendance.

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JHER Vol. 26 No. 2 December 2019, pp. 167 - 173

Sensory Evaluation of Garden Egg Chilli Sauce

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Abstract

This study investigated proximate analysis and sensory evaluation of garden egg chilli sauce. There were two specific objectives. It was an experimental research. Garden egg and chilli sauce were mixed at different ratios for five-blend samples (A, B, C, D, and E). Proximate analysis and sensory evaluation were carried out. The sensory result showed that sample D (20:80) was the most acceptable in terms of colour, flavour, texture, and general acceptability. The protein content across the blends ranged between 3.19 to 3.54%. The crude fat content also ranged between 0.47 to 0.54%. The moisture content across the blend ranged from 89.33 to 90.77%. This may encourage the growth of micro-organism, except otherwise properly sterilized. The P^H and TTA ranged between 4.60 to 4.66 and 0.75 to 1.12% respectively. This indicates some degree of acidity which helps prevent growth of micro-organism. It was therefore recommended for regular use at home and further research on how to produce it as a powder to be used at will.

Keywords: Garden egg, Chilli, Sauces, Blend, Proximate, Sensory, Analysis

Introduction

Sauces are liquids, cream or seam-solid mixtures served with other foods. They are not normally consumed by themselves. They give additional flavour, moisture, nourishment and visual appeal to a dish. It is thickened by the addition of some ingredients such as roux (flour, eggs, butter(margarine).It is used to supply additional richness or to add some nutriment to a dish by its food value and sometimes to counteract the richness of some food and to add piquancy of flavour.

Traditionally, there are thickeners such as *achi, ofor, ukpotoro, ogbono*, etc which are used as soup thickeners and sauces. Sometimes, vegetables such as garden eggs, fruits (pawpaw) are used for thickening of sauces that are served with other foods such as boiled white rice, yam, meat, fish and cassava fufu, garri, etc. These sauces most of the times are delicacies and add to the nutrient content of the meals served/consumed.

Garden egg *Solanummelongena* is a member of the aubergine family and comes in different colors (pink, white, yellow, green, black, sometimes striped)shapes and sizes. It is called African eggplant in some regions. They basically have the same texture: meaty, light flesh with soft, edible seeds and thin, bright skin. They are mostly egg-shaped. Some varieties are round, flat or fusiform. They have been found useful in the preparation of stews and vegetable sauces to be with plantain, rice, yam and or to tubers and taste from bland to sweet or slightly bitter.

Chilli pappers belong to the same family as eggplant, winter cherry, potato, tamarillo and tomato. The chilli is a pod that encloses multiple seeds inside its cavity. The different species of chilli have different sizes, shapes, colours and flavors. Some chilli peppers are green, others are purple or red, and others are yellow. Some chilli peppers are so strong that they cause tears when they are cut.

Nutritionally, capsicums are a superior food. They are an excellent source of the B vitamins, are superior to citrus as a source of vitamin C when they eaten raw, and they contain more vitamin A than any other food plant by weight. Vitamin A increases as the fruit matures and dries but is not affected by exposure to oxygen, while the production of vitamin C in peppers diminishes with maturity and drying and is, as in all plant foods, destroyed by exposure to oxygen. Capsicums also contain significant amounts of magnesium, iron, thiamine, riboflavin, and niacin. Even though chilli sauces are not usually eaten in large quantities, small amounts are important where traditional diets provide only marginal amounts of vitamins. However, ripe non-pungent varieties, such as bell peppers, can be eaten as painlessly as an apple while providing more food value (Murano, 2003).

Eggplant offers antioxidants with its purple shade though it is actually a fruit, a berry and part of the night shade family which includes tomatoes, potatoes, sweet peppers. Its proximate nutrient composition includes water 95%, protein 1%,fat 0.3% and carbohydrate 6% P. Southgate (2001) and Purseglove (1991) analyzed the chemical constituents as carbohydrate 4g, Fiber 1g,Calcium 10g, Iron 1mg,vitamin A trace, Thiamine 0.05g, Riboflavin 0.03mg, Nicotinamine 0.06mg and ascorbic acid 15mg.

Gruben, (2004) outlined the nutrient composition of edible portions of fresh eggplant as follows: water 92%,protein 1.2%,fat 0.2%,carbohydrate 5.6%,calcium 12mg,sodium 2mg,potassium 214mg, vitamin A 10mg and vitamin C 19mg.Therefore,the objective of the study is to determine the chemical composition of blends of garden egg and chilli sauce.

Purpose of the Study

The study investigated the proximate analysis and sensory evaluation of five blends of garden egg chilli sauce. Specifically, the study:

1. Analysed the chemical composition of five blends of garden egg chilli sauce
2. Determined sensory attributed of five blends of garden egg chilli sauce.

Methods and Materials

Design of study**:** The design of the study is experimental which involves five blends in the following ways: 80g of garden egg and 20g of chilli blends of sauce; 60g of garden egg and 40g of chilli blends of sauce; 40g of garden egg and 60g of chilli blends of sauce; 20g of garden egg and 80g of chilli blends of sauce and 50g of garden egg and 50g of chilli blends of sauce

Materials**:** The raw materials used for this study were fresh garden egg *Solanummelongena* and chilli pepper *Capsicum anaheim*. They were purchased from North bank market in Makurdi Benue State and packed in a polyethylene bag transported from the market to the Food Science Department Laboratory, University of Agriculture, Makurdi.

Preparation of Garden Egg Sauce

The method used for the preparation of garden egg sauce was the method used by Gruere, (2006). The garden egg was bought fresh, from North bank market in Makurdi Benue State and packed in a polyethylene bag transported from the market to the Food Science Department Laboratory, University of Agriculture, Makurdi. It was sorted, washed, trimmed, sliced, blanched (at 70^0C for 5 minutes). It was wet milled, packaged and pasteurized for 15 minutes at 65^0C

Preparation of chilli sauce: The method of preparation was used in the sorting of the chilli fruits, which were then washed, trimmed and sliced. The chilli pepper was wet milled using the same milling machine. The sample was pasteurized in transparent plastic plates with cover for 15 minutes at 65°c.

Blend formulation: The garden egg and chill sauce were mixed at different ratios for five samples as follows:

Table I: Blend formulation for Garden egg chilli sauce

Sample codes	Garden egg (g)	Chilli pepper (g)
A	80	20
B	60	40
C	40	60
D	20	80
E	50	50

Chemical analysis**:** The moisture crude fat, ash, fibre, carbohydrate and energy content of the samples of the garden egg chill sauce were analyzed using AOAC, 2000. The moisture content of the samples was determined using air oven method of AOAC, (2000). The crude protein content of the samples was determined by automated micro-kjeldahl as described by AOAC, 2000. Fat was also determined by using the soxhlet extraction method AOAC, (2000). Ash content was also determined using AOAC, 2000. Crude fibre was also determined using AOAC (2000) and carbohydrate was determined by difference. The sum of percentages of protein, fat, ash, fibre and moisture was subtracted from 100% to obtain the value for carbohydrate.

Sensory evaluation: Sensory evaluation of the five sauce samples were carried by using nine (9) point heidonic scale to access the flavour, color, texture, appearance and general acceptability of the selection of the panel. Fifteen (15) students and five (5) lecturers of Department of Food Science and Technology, University of Agriculture, Makurdi were purposively selected as the panel for the sensory evaluation. This was because they were willing to participate in the sensory evaluation.

Instrument for data collection**:** Sensory evaluation of the five sauce samples was carried out by using nine (9) point heidonic scale. It was structured to collect data on the flavour, color, texture, appearance and general acceptability of the five blend formulations of the garden egg sauce.

Data collection method: Each panelist was comfortably seated in the food laboratory in the Department Food Science and Technology, University of Agriculture, Markurdi to avoid communication with other panelists. This is to ensure that they take time to assess the garden egg chill sauce sample on their own. The table was arranged with the garden egg chilli sauce samples readily placed with drinking water and glasses to rinse their mouth after each tasting. This was done in one day.

Data Analysis technique**:** Data were analysed using means.

Findings

Results and Discussion

Table 1: Proximate composition of garden egg/chilli sauce chemical properties

	A	B	C	D	E	LSD
Moisture	90.77^{ad} ± 0.25	90.3^{acd}0 ±0.44	89.73^{abc} ±0.21	89.33^{b} ±0.49	90.17^{acd} ±0.21	0.62
Carbohydrate	4.47^{a}±0.15	4.87^{a}±0.14	5.60^{a}±0.05	6.12^{a}±0.17	5.12^{a} ±0.03	0.22
Protein	3.19^{a}±0.03	3.27^{b}±0.02	3.29^{b}±0.04	3.54^{a}±0.03	3.25^{b}±0.02	0.05
Fats	0.53^{b}±0.15	0.47^{b}±0.03	0.54^{b}± 0.04	0.52^{b}±0.15	0.54^{b}±0.02	0.13
Ash	0.87^{b}±0.15	0.88^{b}±0.03	0.80^{b}±0.02	0.81^{b}±0.02	0.84^{b}±0.04	0.13
P^{H}	4.65^{ac}±0.01	4.63^{bc}±0.02	4.60^{bc}±0.03	4.60^{bc}±0.03	4.66^{bc}±0.02	0.04
TTA	0.75^{b}±0.56	1.10^{b}±0.02	1.12^{b}±0.01	1.12^{b}±0.01	1.06^{b}±0.05	0.46

Key A:80g of garden egg and 20g of chilli pepper blends of sauce
B:60g of garden egg and 40g of chilli pepper blends of sauce
C:40g of garden egg and 60g of chilli pepper blends of sauce
D:20g of garden egg and 80g of chilli pepper blends of sauce
E:50g of garden egg and 50g of chilli pepper blends of sauce
P^{H}:Hydrogen ion concentration
TTA: (Total Titrable Acid)

Table 1 shows the proximate composition of the five blend formulations showed that the moisture content of sample A(80g of garden egg and 20g chilli pepper blends of sauce) ranged from (89.73--90.77%), protein(3.19--3.54%), fats(0.47--0.52%), ash (0.80--0.88%), carbohydrate (4.47--6.12%),pH of the blends ranged from (4.60--4.66%)respectively.

Table 2: Sensory evaluation of Garden egg/chilli sauce

Attributes	A	B	C	D	E	LSD
Colour	2.73^{d}	3.87^{d}	5.13^{c}	7.13^{b}	8.40^{a}	1.17
Flavour	4.27^{b}	4.13^{b}	6.40^{a}	7.13^{a}	4.73^{b}	1.52
Texture	3.33^{d}	4.73^{bcd}	5.13b^{c}	6.87^{a}	5.73^{ab}	1.64
General Acceptability	3.60^{c}	3.27^{c}	5.13^{b}	6.33^{b}	8.07^{a}	1.30

Table 2 shows that the sensory evaluation scores as follows: colour score of the blends ranged from 2.73-8.40% Plavour (4.13-7.13%), Texture (3.33-6.87%) and general acceptability (3.27-8.07%) respectively.

Discussion

The moisture content of the garden egg and chili Pepper sauce were significantly not different (Pco.05) with exception of sample D (20g of garden egg and 80g of chili pepper lends sauce (89.33≠ 0.49) which incidentally was the lowest values among the samples (A, B, C and D) (90.77 vs 90.30 vs 89.73 vs 89.33 vs 90.17) respectively. This agrees with the findings of Ene-obong, (2001). Murano (2003), Southgate that the moisture content of fresh green leafy vegetables including garden egg and pepper sauce is high which range from 72% for cassava leaves to 92-93% for Indian Spinach.

The implications are that this sauce cannot be kept for a long time due to high moisture content is an index of stability of food (Udofia and Obizoba, 2005). However, water main turgidity and strength of vegetables. The protein values of the sauce (03.19-3.54%) which were moderately low and agreed with the observations of Udofia and Obizoba (2005) (2.47-4.33%) and other workers. It thus confirmed that vegetables are poor sources of protein as such could be recommended for the dietary regime of the obese and hypertensive patients.

The mean ash values of garden egg\chili sauce were significantly not different (Pco.03). The ash values ranged from (0.80-0.88%).The ash values were low. They were lower than the observations of other worker (Ukam, 2017; 4.27-7.30%); Ene-obong (2001) (0.8-15.15%) for fresh vegetables and spices respectively. Ash values are pointers to the mineral and vitamin content of vegetables (plants). These low ashes values may be due to plant specify (soil fertility, type and quality of fertility used) (Ogumtona 1998).

The low fat values for all the five samples (0.53 vs 0.47 vs0.54vs 0.52 vs 0.54%) respectively. for sample A B C D and E was not a surprise. This is because vegetables have low fat to maintain cellular integrity. The fat values were comparable to what other workers like Oguche, (2012) (1.23-16.1) Udofia and Obizoba (2005) (0.47-2.00%) and Ezeife, (2010) (0.65-4.45%) respectively, this low fat values were not surprising because fresh vegetables are known to contain low fat. This implied that they could be used for dietary regime of hypertensive patients, diabetes and the obese.

The carbohydrate mean values (4.47 vs 4.87 vs 6.12 and 5.12%) for samples A,B, C, D and E of garden egg sauce respectively confirmed the expert reports that vegetables are poor source of carbohydrates. The nutritional implications of low values of carbohydrates are that the source supply low energy in the body when constantly consumed, as much could be prescribed for diabetic, obese ad hypertensive patients. (Joshi, 2010).

The P^H (Hydrogen ion concentration) and TTA (Total Titrable Acid) of 4.63-4.66% and 0.75-1.12%) respectively indicated some degree of acidity which was supposed to check microbial growth. The P^H of sample A, B, C and E were significantly not different (PCO.05) (4. 65 vs 4.63 vs 4.60 and 4.60 %) respectively, with the exception of sample D (4.60%) while the TTP of all the samples were significantly not different.

The sensory/attributes evaluation of garden egg pepper sauce for colour for the five samples A, B, C, D and E were significantly different except for samples E (8.40%) which is 50% of garden egg and 50g of chili pepper paste. The flavor/taste of samples A (80% of garden egg and 20g chili pepper sauce, 4.27% B (60g of garden egg and 40g of chili pepper sauce (4.13%) and E (50g of garden egg and 50g of chili pepper sauce (4.73) were significantly not different, while samples C (40g of garden egg and 60g of chili pepper sauce (6.40%) and D (20g of garden egg and 80g of chili pepper sauce (7.13%) were not significantly different. It appears that the low the garden egg paste and more of the chili pepper sauce the better the flavor.

The textures of the samples blends of A (3.335), B (4.73%), C (5.13%) were similar, while the textures of samples D (6.87) and E(5.73%) were also significantly not different. This implies that the lower the garden egg 20% and the higher the chili pepper sauce 80g, the better the texture.

The general acceptability showed that sample E (8.07%) was the most accepted and was significantly different ($P<0.05$) from the other samples. However, sample C (5.13%) and D (6.33%) were not significantly different also. In the same way samples A (3.60%) and B (3.27%) were also not significantly different. It implied that when equal quantity of garden egg and chili pepper are blended, a better sauce is obtained in colour (8.40%) and was generally accepted by the consumers (50g of garden egg and 50g of chili pepper paste.)

Vegetables are in abundance especially during the raining seasons, as such a lot of these vegetables are produced and not all are consumed, the left over are discarded because of lack of preservation. Hence, local processing of these vegetables into other uses could make them available for consumption in a different way. Hence, garden egg and chili pepper sauce could be used as an accompaniment for some dishes like rice, plantain, soups etc. the sauce is rich in nutrient as shown by its proximate analysis and sensory evaluation showed that the blend with equal garden egg and chili pepper appeared to be the most acceptable. However, its high water content reduced its keeping quality and lead to high microbial load.

Sauces are liquids, cream or seam-solid mixtures served with other foods. They are not normally consumed by themselves. They give additional flavour, moisture, nourishment and visual appeal to a dish (En.dO'Rally-Wright, 1985). It thickened by the addition of some ingredients such as roux (flour, eggs, and butter margarine) it is used to supply additional richness or to add some nutrient to a dish by its food value and sometimes to counteract the richness of some food and to add piquancy of lavour.

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Eggplant offers antioxidant with its purple shade though is actually a fruit, a berry and part of the night shade family which includes tomatoes, potatoes, and sweet peppers. Its proximate nutrient composition of the fruit include water 95%, protein 19%, fat 0.3%, and carbohydrates 6%. Pulseglove (1991), analyzed the chemical constituents as carbohydrates 4g, Fibre 1g, calcium 10g, Iron 1mg, Vitamin A trace, Thiamine, 0.05g, Riboflavin, 0.03mg, Nicotinamine, 0.06mg and ascorbic acid 15mg.

Gruben & Delton (2004) outlined the nutrient composition of edible portions of fresh eggplant as follows; water 92%, protein 1.2%, Fat 0.2%, carbohydrates 5.6%, calcium 12mg, sodium 2mg, potassium

214mg, vitamin A 10mg and Vitamin C 19mg. Therefore, the objective of the study is to determine the chemical composition of blends of garden egg and chili pepper sauce.

Conclusion

The blend of garden egg and chili sauce help to ensure house hold food security so that households would have something to eat at all time, thereby leading to a healthy life.

Recommendations

It is recommended that:

1. further work (research) should be conducted on preservation of the blends.
2. The blend should be into a powder form.

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JHER Vol. 26 No. 2 December 2019, pp. 174 - 180

Strategies for Curbing Gender-Stereotypes in Classroom Instructional Activities: Implication for Principals in Public Senior Secondary Schools in Akwa Ibom State

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Abstract

This paper focused on strategies for curbing gender stereotypes in classroom instructional activities: implication for principal in secondary schools in Akwa Ibom State. Survey research design was used for the study. The population of the study was 237 principals and 2948 teachers. The sample of the study was 400 respondents, using Yaro Yammane formula. Questionnaire was the instrument used to get information from the respondents. The findings of the study revealed that gender stereotypes were prevalent in public senior secondary schools and that principal supervisory strategies were used to curb gender stereotypes in classroom instructional activities in public senior secondary schools in Akwa Ibom State. It was therefore recommended by the researchers that: every teacher should avoid using derogatory gender stereotypes remarks on students during classroom instructional activities, school management should adopt effective supervisory styles that will encourage and promote gender equality in school that the school principals should not take supervision as fault finding but that it should be regard as guidance for teachers improvement. Principal supervisory style should be such that is gender friendly, so as to encourage and guide teachers during teaching.

Keywords: Strategies, Principals, Gender, Stereo-types, Instructional, Activities.

Introduction

Gender inequality has been a global issue for a long time yet alleviating it seems unachievable. Jacreen (2008) opined that gender inequality is deeply entrenched in many societies. Ifegbesan (2010) maintained that gender stereotypes exist in all human endeavors, in professions, careers, institutions families, political parties and public institutions. The Nigeria government although a signatory to many international and regional human rights organization documents that women in Nigeria are still continuing to be victims of various harmful practices (Nwagbara, 2003). It is therefore imperative for the government to make sure that this scenario is alleviated and that schools management should make sure that women have received quality education through quality instruction.

Ensuring quality instruction at all levels of education is one of the core objectives of the National Policy on Education (FRN, 2004). This can be achieved through effective classroom interactions which create equitable chances for either student's gender to acquire the right knowledge of the subject matter, positive attitudes, values, acceptable behaviours and have equal opportunities for participating intelligently in making rational decisions for their own well-being (Nnamani and Oyibe, 2016). This implies that, classroom interaction should among other things create the desired equal opportunity and understanding for both students' gender as good as this may sound studies have revealed that there are gender-stereotypes in the classroom instructional activities. Ifegbesan (2010) studied "Gender-Stereotypes Belief and Practices in the Classroom and researcher found out that most of the teachers promote gender stereotypes in schools. Odunaike, Ijaduola and Epetimehin (2013) conducted a study on "Teachers' Gender and Professional Achievements in Secondary Schools in Ijebu-ode, Ogun State, Nigeria." The study established that female teachers are more committed to the teaching profession than the male teachers. Consequently, the female teachers more often than not, occupy higher positions and invariably get more involved in school decision-making than their male counterparts.

Ogheneakoko and Akpochafo (2015) in their study on "Gender Difference among Social Studies Teachers' Competences found out that there was no significant difference between male and female Social Studies teachers' competences in the use of the inquiry method in upper basic schools. The male and female Social Studies teachers demonstrated the same level of competence. Evans-Oninna (2016) studied "Issues and Challenges of South Eastern Nigerian Women in Educational Management in the 21st Century" and found out that major challenges of women in educational management include long working hours, dealing with different natures of sub-ordinates lack of authorization and marginalization .

Afu, Gbobo, Ukofia and Itakure (2017) studied the "Effect of Gender Imbalance in the Enrolment of Students in Public Secondary Schools in Gwagwalada Area Council, Federal Capital Territory, Abuja, Nigeria" and discovered that parents/guardians were significantly responsible for gender imbalance in the enrolment of students. Okeke (2007) equally observed that, the Nigerian school curriculum is not gender fair since its contents reflect mainly the concerns of males as science oriented and that there is masculine images in the curriculum and that female students suffer discrimination from their teachers. These actions automatically put the girls in a disadvantaged position in classroom interaction especially in science related subjects. Ironically, some vocations and professions regarded as men's for instance engineering, medicine, aeronaut, pilot etc. while others are regarded as women's profession (catering, typing, nursing home economic instructor etc.). An average Nigerian girl goes to school with these fixed stereotypes, hence the school principal's policies; rules, culture, and working relationships, among others, have to be such that have influence on both students and teachers positively irrespective of gender. Anastasia (2016) maintained that for the principal to achieve this and also alleviate gender differences in secondary schools he should apply supervisory leadership styles, these style include: Directive Supervisory Style which is characterized by a top-down decision-making process, where the decision is made from the top (principal only), and all the others below are expected to fall in line and follow. In this context, the principal instructs teachers not to use any derogatory gender stereotypes comments in classroom instructional activities, the teachers obey the. The primary objective of this supervisory style is to obtain immediate compliance of teachers to any directive regarding classroom instructional activities. The principals keep close watch on the teachers to see that they are not gender discriminatory in class.

Participative supervisory style is more than just promoting harmony among teachers, the school principal who adopts participative supervisory style aims at establishing consensus and building commitment among teachers. The participative manager (principal) is inclined to have a willingness to listen to every teacher, recognizing that every teacher has ideas that should be considered in the classroom decisions. They ask the teachers what they would like to do, and opens the floor for discussion. The school principal encourages teachers and students' participation in school activities irrespective of gender. This style encourages cooperation among teachers and students, so that they are willing to work together regardless of gender marginalization ideology.

Coaching supervisory style as the term implies involves a lot of coaching and mentoring. The coaching style aims to contribute to the long-term professional development of teachers. Teachers are guided on ways to apply some gender stereotyped-curriculum materials in classroom instruction in such a way that both male and female students are made to feel important and treated equally. The principal that adopts coaching supervisory style is often refers to as "developmental" manager, since his/her focus is on the professional development of the teachers. The principal has great willingness to help teachers and encourage them to further develop their strengths and improve on their weaknesses, to increase their job performance.

Purpose of the Study

The purpose of this study is to examine the strategies principals can adopt for curbing gender stereotypes in classroom instructional activities. Specifically the study determined:

1. gender stereotypes prevalent in public senior secondary schools in Akwa Ibom State
2. supervisory strategies the principals applied to curb gender stereotypes in classroom instructional activities in public senior secondary schools in Akwa Ibom State.

Research Questions

1. What gender stereotypes are prevalent in public senior secondary schools in Akwa Ibom State?
2. What supervisory strategies can the principals use to curb gender stereotypes in classroom instructional activities in public senior secondary schools in Akwa Ibom State?

Methodology

Design of the Study: The design for the studyis survey.

Area of the study: Akwa Ibom State was the area of the study. Study was carried out in public senior secondary schools (SSS) in the state.

Population for the study: Population was made up of all the principals and teachers in the public secondary schools in the state. Available evidence from the Ministry of Education in the state put the number at 237 and 2948 for principals and teachers respectively.

Sample for the study: A random sample of 400 (principals 100 and teachers 300) was drawn for the study. Sampling techniques included multi-stage, purposive and random sampling.

Instrument for data collection: Questionnaire was used for data collection. It was developed based on literature review and the research questions of the study. It was validated by three experts in educational administration and two experts in gender studies.

Data collection technique: Four hundred copies of questionnaire were distributed to the principals and teachers sampled for the study. They instructed them on how to fill the questionnaire. After one week of distribution of the instruments researchers went back to retrieve the questionnaire. All the 400 copies were retrieved.

Data analysis technique: Data were analysed using mean ($\overline{X}$). Decisions were based on mean scores of 2.5 and above ($X \geq 2.50$) which was considered "agree" while 2.49 and below were considered as "disagree".

Findings

Table 1: Gender Stereotypes Prevalent in Public Senior Secondary Schools N=400

S/N	Indicators of Gender Stereotypes Prevalent in Public Senior Secondary Schools	$\overline{X}$	Decision
	In your school, teachers posited that male students are :		
1	more intelligent than the female ones	3.08	Agreed
2	more outspoken and brave while their female counterparts are expressionless weak and naïve.	3.29	Agreed
3	outdoor individuals while females are homely and reserved	3.08	Agreed
4	strong and dominant with leadership traits while the female are weak with servant traits	2.45	Disagreed
5	science and engineering based whereas female are Arts and Home economics based	2.36	Disagreed
6	mathematically inclined while female ones are languages inclined	3.22	Agreed
7	logically convinced while females can be convinced through persuasion	3.32	Agreed
8	very decisive in decision making whereas the female ones can waiver in making decision	3.16	Agreed

Table 1 shows that some of the respondents agreed to the items in table 1 with the mean scores of 3.08, 3.29, 3.08, 3.22 and 3.16 respectively that in their schools, teachers posited that male students are: more intelligent than the female ones, more outspoken and brave while their counterparts are expressionless and weak, outdoor individuals while female ones are homely and reserved, mathematically inclined whereas the females are languages inclined, logically convinced while females can be convinced through persuasion and very decisive in decision making whereas the female counterparts can wavier in making decision. Some of the respondents disagreed with items 4 and 5 with mean scores of 3.45 and 2.36 respectively that teachers referred to male students as strong and dominant individuals with leadership trait while the females ones are weak with servant traits and male students are being science and engineering based whereas females are art and home economic based. All the respondents agreed with the sectional mean score of 2.99 that gender stereotypes are prevalent in public secondary schools in Akwa Ibom State.

Table 2: Supervisory Strategies the Principals can use to Curb Gender Stereotypes in Classroom Instructional Activities **N**=400

S/N	Indicators of Supervisory Strategies the Principals can use to Curb Gender Stereotypes in Classroom Instructional Activities	$\overline{X}$	Decision
	To curb gender stereotypes, your principal:		
1	established the culture of using rules/regulations on both male and female students	3.17	Agreed
2	related cordially with both male and female students during class teaching interactions	2.98	Agreed
3	warned teachers not to use derogatory gender comments in classroom instructional activities	2.93	Agreed
4	committed both male and female students to willingly carry out school activities	3.08	Agreed
5	encouraged both male and female students to cooperate with the teachers during instructional activities period	3.24	Agreed
6	mentored both male and female teachers on how to disseminate instructional activities for male and female students to understand the learning experiences	2.98	Agreed
7	encouraged male and female teachers to attain professional development training to improve on instructional activities for male and female students to benefit equally in the class.	3.19	Agreed
8	guided teachers on how to apply gender stereotype curriculum materials without being biased	3.10	Agreed
9	encouraged teachers to improve on their weaknesses so as to help male and female students to perform well academically	3.06	Agreed
10	emphasized on teachers to keep up with their strengthened areas so as to help both gender to overcome learning difficulties	3.16	Agreed

Table 2 shows that all the respondents agreed with the items with mean scores of 3.17, 2.98, 2.93, 3.08, 3.24, 2.98, 3.19, 3.10, 3.06 and 3.16 respectively that to curb gender stereotypes their principal: established the culture of using rules and regulations on both male and female students; related cordially with both male and female students during class teaching interactions; warned teachers not to use derogatory gender comments in classroom instructional activities; committed both male and female students to willingly carryout school activities; encouraged both female and male students to cooperate with the teachers during instructional activities period; mentored male and female teachers on how to disseminate instructional activities so that male and female students understand the learning experiences encouraged male and female teachers to attain professional development training to improve on instructional activities for male and female students to benefit equally in the class equally, guided teachers on how to apply gender stereotype curriculum materials without being biased encouraged teachers to improve on their weaknesses so as to help male and female students to perform well academically and emphasized on teachers to keep up with their strengthened areas so as to help both gender to overcome learning difficulties. All the respondents accepted that principals have used supervisory strategies to curb gender stereotypes in classroom instructional activities in public secondary school in Akwa Ibom State.Discussion The finding of this present study proved that gender stereotypes were prevalent in public senior secondary schools in Akwa Ibom State. The finding of okeke (2007) corroborated with this present study finding, the researcher found that the Nigerian school curriculum is not gender fair, that its contents mainly reflect concern for males in subjects such as sciences, mathematics, engineering and other science related subjects. On the other hand the researcher lamented that females were made to offer arts and home economics subjects and other home based subjects.

The second finding revealed that the principals applied supervisory strategies to curb gender stereotypes in classroom instructional activities in public senior secondary schools in Akwa Ibom State. (See Table 2) Anastasia (2016) found out in his study that the principals used directive supervisory leadership style to curb gender stereotypes in classroom activities. This is because this supervisory leadership style warrants the principals to keep close watch on the teachers and to see that they obey instruction which will help them to improve in teaching and be gender friendly. Under this leadership style Anastasia (2016) maintained that teachers also comply and cooperate with their principals.

Conclusion

From the findings of the present study the researchers concluded that gender stereotypes are prevalent in public senior secondary schools in Akwa Ibom State and that the principals applied supervisory leadership strategies to curb gender stereotypes in classroom instructional activities in public senior secondary schools in Akwa Ibom State.

Recommendations

Due to the study findings the following recommendations wereput forward:

1. Every teacher should avoid using derogatory gender-stereotypes remark during classroom instructional activities.
2. School management should adopt effective supervisory styles that will encourage and promote gender equality in school instructional activities.
3. School principals should not take supervision as fault findings but as guidance to teachers improvement in instructional delivery.
4. Principal supervisory style should be gender friendly, encouraging for guidance and improvement of teachers teaching.
5. School principals should organize seminars and workshops for teachers on gender discrimination sensitivity in order to update their knowledge on strategies to reduce gender discrimination in schools.
6. School curriculum should be regularly reviewed by curriculum experts such as Nigerian Educational Research and Development Council (NERDC) to alleviate cases of gender discrimination and marginalization.
7. Government at all levels should place priority on the education of every child irrespective of gender.

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Clothing Maintenance Practices of Alvan Ikoku Federal College of Education Students in Owerri Municipal of Imo State: A Case Study

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Abstract

The study was a case study of students clothing maintenance practices of Alvan Ikoku Federal College of Education, Owerri Municipal Council of Imo State. The specific purposes were to study the Components of clothing maintenance practices, Problems encountered and Solutions to the problems encountered in the process of clothing maintenance by students in Alvan Ikoku Federal College of Education, Owerri. Three research questions guided the study. The population for the study was 1,346 students from five (5) departments of Vocational and Technical Education, Alvan Ikoku Federal College of Education, Owerri. Data were collected from a sample size of 200 respondents using stratified random sampling technique. Instrument for data collection was structured questionnaire. Data were analyzed using mean and standard deviation. The findings include 22 components of clothing maintenance practices, 28 problems associated with clothing maintenance practices and 13 solutions to the problems associated with students clothing maintenance practices. Based on the findings, the recommendation among others is that students should adhere to the identified clothing maintenance practices, to reduce possibilities of contracting contagious diseases as well as having durable and lasting clothing items.

Keywords: Clothing, Maintenance, Tertiary, Institutions, Students, Practices.

Introduction

Clothing is one of the basic necessities of man. It includes a great range of materials that are worn to protect and adorn the body, as well as communicate intent. Reasons for wearing clothing include: protection, enhancement of appearance, modesty, role identity, attraction, social status and traditional identity. Kyung (2013) noted that clothing is constantly consumed by man for enhancement of appearance, protection, modesty, role identity, attraction and social status. Clothing includes various accessories such as dresses, shoes, hand bags, jewellery, hairdo, make up among others. It involves everything one puts on from head down to the sole of the feet (Uzozie, Ezike and Eze, 2014). Clothing can create varied impression for people on the beholders thus influences the impression people have about the wearer. It can also affect the person's comfort and self confidence. The amount and types of clothing worn depends on physical, social and geographical considerations such as figure type, status and positions held in the society as well as environmental weather conditions. Clothing therefore is made up of more than fibre and textiles. For clothing to perform its functions, it must be properly maintained.

Clothing maintenance is an act of taking care or keeping clothing made up of more than fibres and textile materials worn on the body in good condition to extend the shelf life (Kingsley & Agbo, 2018). Kunz (2009) highlighted the processes involved in maintenance of clothing, as keeping the materials free from physical damage and retaining or refreshing the appearance in terms of removal of stains and dirts in order to retain the external and visual characteristics. A good knowledge and skills in clothing maintenance practices will help the youth plan their wardrobe well and make effective use of the clothing maintenance practices. Clothing maintenance practices include laundering, drying, storage and mending the clothes when they develop faults. In line with this, Anyakoha (2015) described clothing maintenance practices as the process of applying appropriate repairs on clothing articles to prolong the shelf life of the product. Laundry as a major component of clothing maintenance practices is a process of hand or machine washing and drying apparel items to remove stains/soils and to restore items to their first purchased appearance. It is therefore necessary that adequate knowledge of the fabrics is acquired by students so as to know the correct ways to launder clothing articles (Julia, 2017). Clothing storage is done after laundry to give the garment time to rest and prolong the shelf life of the product. Different forms of storage exist and they include placing clothes on hangers, closets, drawers, shelves among others. According to Anyakoha (2015), clothes should be aired after each wear to remove odour, kept in storage with like items and pockets emptied before storing clothes. Mending involves repairs on some parts of clothes that are torn or worn out and replacement of such things as spoilt zippers, buttons that fell off and restoring loose stitches. Agbo (2018) stated other processes involved in mending as darning, patching, and reinforcement. They are described as forms of repairs for restoring the garments to good conditions or shape after damage.

Similarly, Umeh (2014) stated the importance of taking good care of the clothing articles worn on the body and keeping them in good condition. Every individual including students of Alvan Ikoku Federal College of Education is expected to imbibe good clothing maintenance practices for durability, improving personal appearance, facilitating consumers' satisfaction and prolonging the life span of fabrics. As humans are meant to be very conscious or aware of the importance of clothing maintenance; few pieces of clothing articles given proper maintenance and used to the greatest advantage are infinitely durable, stand a taste of time more than the ones that are badly maintained. Providing positive role models for youths in relation to clothing care and maintenance skills are needed to lengthen wear life of clothing and reduce waste among the students. Further, it will benefit students, parents, laundry workers in adopting proper clothing maintenance practices.

There is therefore the need for this study, to find out how students of Alvan Ikoku Federal College of Education, Owerri maintain their clothing articles, the problem they encounter and ways of proffering solutions to the problems. This will in turn enhance the clothing maintenance practices of students in Alvan Ikoku Federal College of Education, Owerri, Imo State.

Purpose of the Study

The main purpose of the study is to find out the clothing maintenance practices of students of Alvan Ikoku Federal College of Education, Owerri municipal of Imo State. Specifically, the study determined:

1. Components of clothing maintenance practices of students in Alvan Ikoku Federal College of Education, Owerri

2. Problems encountered by students in their clothing maintenance practices in Alvan Ikoku Federal College of Education, Owerri.
3. Solutions to the problems encountered by Alvan Ikoku Federal College of Education, Owerri students in their clothing maintenance practices.

Research Questions

1. What are the major components of clothing maintenance practices of students in Alvan Ikoku Federal College of Education, Owerri Municipal Council of Imo State?
2. What are the problems encountered by students of Alvan Ikoku Federal College of Education, Owerri in their clothing maintenance practices?
3. What are the solutions to the problems encountered by Alvan Ikoku Federal College of Education, Owerri students in their clothing maintenance practices?

Methodology

Design of the Study: Descriptive survey design was preferred for this study because information were gathered from students regarding their views on the clothing maintenance practices by students of Alvan Ikoku Federal College of Education, Owerri Municipal Council of Imo State.

Area of the Study: The area of the study was Alvan Ikoku Federal College of Education, Owerri municipal council of Imo State which is situated along Owerri-Orlu road. The school is full of academic activities involving students in NCE, Degree and PGD programmes. The students live in the hostel, dress to school which subject them to clothing maintenance.

Population for the Study: The population comprised 1346 final year degree students of Alvan Ikoku Federal College of Education, Owerri. There are five (5) departments in the Schools of Vocational and Technical Education. These include: Department of Agric Science, Department of Business Education, Department of Fine and Applied Arts, Department of Home Economics and Department of Technical Education. (Source: Registry Department, AIFCE, Owerri)

Sample and Sampling Technique: The sample is two hundred (200) students which were randomly selected from the five (5) Departments of the School of Vocational and Technical Education, Alvan Ikoku Federal College of Education, Owerri. Stratified random sampling was used to select 200 respondents from the five departments. 40 students were selected from each of these five Departments.

Instrument for Data Collection: The instrument for data collection was structured questionnaire titled Clothing maintenance practices of Alvan Ikoku Federal College of Education students in Owerri Municipal Council of Imo State. The questionnaire was divided into two sections (A and B). Section A is on the personal data of the respondents while section B is based on a 4-point rating scale with 24 items grouped into three (3) clusters to answer the three research questions.

Method of Data Collection: The researchers gave the questionnaire to the students by direct contact. The students returned the completed answered questionnaire to the researchers. A total of 200 copies of the instrument were distributed by hand. The entire 200 copies were retrieved.

Method of Data Analysis: The data obtained was analysed using mean and standard deviation. The cut off point for decision acceptability of the items was 2.5 while anything below 2.5 was termed as not accepted.

Results

Table 1: Showing responses on components of clothing maintenance practices of students in Alvan Ikoku Federal College of Education in Owerri Municipal Council of Imo state

S/N	Clothing Maintenance Practices	Ex	N	X	SD	Decision Rule
1.	Sorting of clothing according to colour/ clothing type prior to laundry	680	196	3.4	0.8	Practices
2.	Mending of torn parts of the clothing as they occur/before laundry.	668	196	3.4	0.6	Practices
3.	Removing of stains according to the type of stain before laundry.	640	196	3.2	0.9	Practices
4.	Steeping or soaking of white cotton separately to avoid stains	670	196	3.4	0.6	Practices
5.	Washing of clothes according to fabric type for duration	668	196	3.4	0.6	Practices
6.	Rinsing until soap is completely removed from the articles until water is clean	654	196	3.3	0.5	Practices
7.	Applying blue/starch as necessary.	602	196	3.0	0.8	Practices
8.	Extracting water by wringing, mangling, squeezing or rolling the clothing on a clean towel according to fabric type	608	196	3.1	0.7	Practices
9.	Drying according to the type of clothing	614	196	3.1	0.8	Practices
10.	Ironing of pressing according to fabric type (finishing).	666	196	3.3	0.5	Practices
11.	Airing of the ironed clothing articles	602	196	3.0	0.7	Practices
12.	Storing in the wardrobe, hangers, drawers or box.	674	196	3.4	0.5	Practices
13.	Replace zip/slack elastic and lost buttons	638	196	3.3	0.6	Practices
14.	.Imbibing .good maintenance practices to improve personal appearance	672	196	3.4	0.4	Practices
15.	Using back stitches in mending torn cloths	638	196	3.2	0.6	Practices
16.	Patching torn clothes with similar fabrics and matching thread decoratively.	644	196	3.2	0.6	Practices
17.	Using darning for L-tear woven fabrics	614	196	3.1	0.4	Practices
18.	Renovate faded clothes by dyeing	636	196	3.2	0.6	Practices
19.	Always check tags on the neck or down the side seams for laundry instruction.	648	196	3.3	0.6	Practices
20.	Practice good hygiene by wearing deodorant to keep cloth in better condition	700	196	3.5	0.8	Practices
21.	Avoid storing clothes in a humid closet to remove odours	678	196	3.4	0.6	Practices
22.	Restoring clothing items to their first purchase appearance.	668	196	3.4	0.4	Practices
	Grand mean			**3.2**		

Table 1 shows that all the items in the above table were accepted by the respondents as the components of clothing maintenance practices of students in Alvan Ikoku Federal College of Education in Owerri Municipal Council of Imo State. All the items have their mean above 2.5 which is the cut-off point for acceptance regarding the importance of various components of clothing maintenance practices of students in Alvan Ikoku Federal College of Education, Owerri. The Standard Deviation value for the 22 items in the table ranged from 0.9 – 0.4 which indicates that the responses are close to one another and to the mean.

Table 2: Responses on problems encountered in clothing maintenance by students in tertiary institutions in Owerri Municipal council of Imo State

S/N	Problems Encountered	Ex	N	X	SD	Decision Rule
1.	Limited knowledge/skill on laundry, mending and storage skills.	718	196	3.6	0.6	Problems
2.	Lack of personal value on clothing maintenance	640	196	3.2	0.7	Problems
3.	Inability to interpret laundry signs and instruction on clothing items	722	196	3.6	0.8	Problems
4.	Lack of skill in manipulating washing machine	716	196	3.1	0.6	Problems
5.	Lack of knowledge to store clothes in an air circulated space	632	196	3.2	0.9	Problems
6.	Low standard of personal cleanliness	636	196	3.3	0.6	Problems
7.	Lack of good dress sense	630	196	3.2	0.8	Problems
8.	Ignorance of clothing maintenance practices	660	196	3.3	0.8	Problems
9.	Lousiness in keeping clothes in good order	636	196	3.2	0.5	Problems
10.	Inadequate laundry equipment	660	196	3.3	0.7	Problems
11.	Non-availability of storage facilities	674	196	3.4	0.8	Problems
12.	Lack of time due to tight activities	620	196	3.2	0.8	Problems
13.	Insufficient ventilation in storage space	654	196	3.3	0.6	Problems
14.	Constant power failure	640	196	3.2	0.8	Problems
15.	Limited lines for spreading clothes in the hostel.	650	196	3.3	0.5	Problems
16.	Lack of sewing accessories for mending (needles, pins, scissors, thread, buttons)	636	196	3.2	0.7	Problems
17.	Lack of good wardrobes, drawers among others	646	196	3.2	0.8	Problems
18.	Insufficient hangers and other accessories	644	196	3.2	0.8	Problems
19.	Inability to apply correct procedures to remove stains	652	196	3.3	0.6	Problems
20.	Time constraints to launder due to lecture attendance, project and assignment	732	196	3.2	0.8	Problems
21.	Negative attitude of students towards clothing maintenance	666	196	3.3	0.5	Problems
22.	Lack of money to buy suitable laundry facilities	622	196	3.1	0.6	Problems
23.	Lack of interest in acquiring the right knowledge of proper clothing maintenance practices.	632	196	3.3	0.5	Problems
24.	Lack of techniques to handle stubborn stains	636	196	3.2	0.8	Problems
25.	Inadequate water supply in the hostel	646	196	3.2	1.0	Problems
26.	Inadequate provision of better storage space in the hostel	634	196	3.2	0.6	Problems
27.	Insufficient lines for spreading clothes in student's residence	616	196	3.1	0.7	Problems
28.	Clashes of lecture time and laundry time.	604	196	3.0	1.3	Problems
	Grand mean			**3.2**		

Table 2 reveals that all the 28 items had their mean scores ranged from 3.1 to 3.8 being the cut off point 2.50 of a 4 point rating scale. This indicated that they were all accepted as problems encountered by students in their clothing maintenance practices in Alvan Ikoku Federal College of Education Owerri. The Standard Deviation values for the 28 items ranged between 1.3 to 0.5 indicating that the responses of the respondents are close to one another and not much variation.

Table 3: Responses on Solutions to the problems encountered by students of Alvan Ikoku Federal College of Education in clothing maintenance practices in Owerri Municipal

S/N	Problems Encountered	Ex	N	X	SD	Decision Rule
1.	Regular water supply to hostel areas to aid easy laundering of fabrics	638	196	3.2	0.6	Solution
2.	Supply of enough water in the hostel by the school authority	716	196	3.2	0.2	Solution
3.	Provision of wardrobe for adequate storing of fabrics	654	196	3.2	0.7	Solution
4.	Provision of more lines for spreading of clothing in the hostels/student residents	668	196	3.4	0.5	Solution
5.	Provision of better storage space in the Hostel.	756	196	3.3	0.5	Solution
6.	Awareness creation on components of clothing maintenance practices	642	196	3.2	0.7	Solution
7.	Motivating students to develop interest in clothing maintenance practices	642	196	3.2	0.8	Solution
8.	Provision of money for suitable laundry facilities.	672	196	3.4	0.6	Solution
9.	Adjustment in the school time table to create adequate time for laundry	634	196	3.2	0.9	Solution
10.	Provision of sewing accessories for maintaining clothes	656	196	3.3	0.6	Solution
11.	Adequate supply of electricity in the hostel.	674	196	3.4	0.5	Solution
12.	Cultivate the spirit of reading tags/labels for clothing maintenance	646	196	3.2	0.9	Solution
13.	Adequate provision of ventilation to avoid moisture deposition on garment.	640	196	3.2	0.8	Solution
	Grand mean			**3.3**		

Table 3 shows that all the items had mean scores above the cut off mean point of 2.5 which means that the respondents accepted the items on awareness creation on components of clothing maintenance as solutions to problems encountered by Alvan Ikoku Federal College of Education students in Owerri Municipal Council of Imo State. The Standard Deviation values for all the 13 items in the table ranged from 0.9 – 0.2 indicating that the responses of the respondents are close to one another and to the mean.

Discussions of Findings

Findings in Table 1 revealed that all the important components involved in clothing maintenance practices were all accepted by respondent with responses above the cut off score of 2.5. The components of clothing maintenance practices include: sorting of clothing according to the type of fabric and use, mending torn parts of clothing, stain removal, washing of clothing according to fabric type, steeping and soaking of white cotton separately to avoid stains among others. It further revealed that all the clothing maintenance practices could be put into practice for individual physiological comfort of clothing, enhancement of the clothing appearance and durability of the clothes. This is in line with Umeh (2014) who stated that mending of torn parts of the clothing through darning and patching enhances the appearance and durability of clothes. Replacing broken zips and slacks elastics also help to extend the life span of many clothing items. This finding supports the assertion by Agbo (2013) on appropriate steps in clothing maintenance practices which include: repair or mending of clothing at earliest signs of tear, provision of adequate water, soap and storage facilities to make the clothes look attractive, durable and comfortable. This finding agrees with the findings of Kathlean (2005) who reported that regular washing, ironing and mending of clothes call for careful application of skills in the maintenance of clothing items, Nwadi and Anyakoha (2012) further opined that the removal of stains in clothing items, require professional knowledge and skills on how to handle them. Clothing maintenance skills such as reading labels/tags, provision of sewing accessories, adequate provision of ventilation, ironing and storage skills are needed by Alvan Ikoku Federal College of Education students as this will help to save cost as well as providing appropriate clothing items for themselves and the entire family.

Results of the study in Table 2 also identified the problems of clothing maintenance practices of students in Alvan Ikoku Federal College of Education in Owerri Municipal Council of Imo State. From the findings presented, it was discovered that the respondents identified all the 28 items as the problems encountered by students in the process of clothing maintenance practices in Alvan Ikoku Federal College of Education, Owerri Municipal Council of Imo State. These problems include; limited knowledge/skills on laundry, mending/storage skills, inadequate laundry equipment, low standard personal cleanliness from family where they emerge from, lack of interest in acquiring the right skill/knowledge of proper clothing maintenance practices, insufficient water supplies in the hostel and limited space for spreading clothes, inadequate provision of better storage facilities in the hostel, lack of good dress sense among others. This is in agreement with the findings by Dhurup (2014) that students of tertiary institutions have limited resources and knowledge on how to maintain different types of clothes and this has affected their clothing maintenance habits as well as their academic performance in school. Supporting this, Agbo (2013) noted that the above problems may lead to a feeling of isolation and unwholesome attitude of students towards their lecturers and this may also result to low productivity. In line with this Andrew and Pentecost (2009) stated that limited knowledge on how to maintain different types of fabric can lead to mishandling of clothes during washing, ironing and storage of clothes. This may cause expenses on students thereby endangering their health condition. Boyo and Dada (2013) shared the same view with the result of the study when they emphasized that lack of effective knowledge in maintenance of clothing poses problems such as skin infection to tertiary institution students. This may be contagious thereby putting the lives of students in danger as well as further expense on them. Bell (2003) stated that lack of proper ventilation can cause damage to clothing items for instance greying and yellowing of fabrics. Supporting this Boyo and Dada (2013) suggested that good ventilation removes dampness due to perspiration and odour in garments. In line with this, Anyakoha and Nwadi (2011) explained that provision of good wardrobe or hangers for storage of clothing can enhance and prolong the life span of the clothes. Anyakoha and Nwadi (2011) further revealed that storage is an important part of clothing maintenance and that it is important to store only clean clothes using hanger in an organized drawer or wardrobes. When we fail to store the clothing articles properly, they could get dirty, look old, infected by moths or become damaged. This is in line with the view of Kingsley & Agbo (2018) that clothes need special care as moths often damage articles that are not stored properly. Mending is the process of repairing and fixing a worn, torn, damage article that are not stored properly. It could be inferred that the surveyed tertiary institution students recognised that no matter how well clothes are, no person is ever well dressed unless the clothing are given appropriate maintenance. These findings corroborated with the earlier studies by Pitts and Hunt (2006) that stated that it is expected that torn clothe should be repaired immediately it occurs at early stage to prevent further damage of cloth, Mending of clothes therefore save money. In trying to identify time constraints as a result of tight lecture schedule assignment and studying influencing clothing maintenance practices, it was discovered that many students do not possess basic experience in clothing care and effective time management interpreting labels/tags on labels for laundry. It was suggested that students should change their attitudes to clothing maintenance as supported by Friggs (1999) on procedure for managing clothing articles and other domestic items.

Finally, the result of findings on solutions to the problem of clothing maintenance practices among tertiary institution students in Table 3 revealed that all the items are solutions to improve on the life span of the clothing. This is in line with Anyakoha and Nwadi (2011) who pointed out that provision of good wardrobe and storage space in the hostel for adequate storage of fabrics can enhance the appearance and the life span of the clothes. Also, Fabusuyi (2010) highlighted ways of helping tertiary institution students to improve on their clothing maintenance practices. These include regular water supply to hostel areas by the school authority, provision of storage space and lines for spreading of clothing in the hostel, awareness creation on imbibing major components of clothing maintenance practices effectively, adequate electricity supply among others. These can affect their academic performance in the school if not properly addressed. Appropriate resources should therefore be made available to enable students acquire good maintenance clothing practices for sustainability and self confidence.

Conclusion

The economic hardship in the country has drastically reduced the resources available for clothing acquisition for most families including Alvan Ikoku Federal College of Education students in Owerri Municipal Council in Imo State. To prolong the life span of the clothing, there is need to sensitize the students on the need for proper maintenance of clothing articles. The study revealed that all the respondents apply right skills in the maintenance of their clothing but there are some problems like inability to interpret the labels and tags on clothing for laundry, inadequate supply of clothing maintenance resources which need to be provided by schools that have student hostels or other residence providers. Practice of good clothing maintenance by Alvan Ikoku Federal College of Education students will enhance prolonging shelf life of clothing articles, cleanliness, good hygiene and good health. This will reduce possibilities of diseases that could be contracted through poor hygiene thereby passing such practices to their generations. Students should therefore adhere to the identified clothing maintenance practices while in school even thereafter.

Recommendations

With the findings from this study, the following recommendation were made:

1. Students of tertiary institutions should adopt this practice of clothing maintenance to have durable and lasting clothing items.
2. Any institution, organization or individual that will build residence for students should provide facilities for clothing maintenance because this will invariably affect their health status.
3. The research study should be carried out among tertiary institutions in other Local Government Area for more knowledge of the clothing maintenance practices.

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JHER Vol. 26 No. 2 December 2019, pp. 191 - 200

Ergonomic Principles Needed by Garment Workers for Pattern Drafting in South Eastern Nigeria

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Abstract

The study investigated ergonomic principles needed by garment workers for pattern drafting in South Eastern Nigeria. Three research questions and one hypothesis were formulated to guide the study. Descriptive survey research design was adopted for the study. The population was made up of 267 garment workers drawn from the 19 registered garment companies in South Eastern Nigeria. Structured questionnaire on ergonomic principles needed by garment workers for pattern drafting was used for data collection. Data were analyzed using mean, standard deviation, improvement need index and ANOVA. The findings showed that garment workers needed ergonomic principles in pattern drafting in the following, adjusting the table height to accommodate different workers, tilting the table height to improve visibility, use of cushioned chair to prevent tissue compression at the area of Ischia tubrosities among others. Major constraints to adoption of the needed ergonomic principles include: ignorance about the long term effect of occupational injury, nonchalant attitude towards ones health and safety among others. Ways of enhancing adoption of the needed ergonomic principles for pattern drafting include; organizing seminars and workshop for greater awareness on ergonomic hazards and prevention among others. Based on the findings of the study, it was recommended that the identified needed ergonomic principles should be packaged into training manuals for garment works by the government in collaboration with trade union.

Key words: Ergonomic, Principles, Pattern, Drafting, Garment, Workers

Introduction

Designing and drafting of garment patterns are among the preliminary processes involved in garment making (Igbo and Iloeje, 2014). Garment designers make a number of sketches as they allow their imagination flow on paper. Consequently these sketches are assessed, scrutinized, corrected and developed into garment designs with style features. The final pattern is graded into sizes for mass production of the garment (Sarka, 2011; Muhundham, 2013).

Pattern designers are therefore engaged in long hours of performing the same task repeatedly under constrained posture. This often predispose the garment workers to what is known as Repetitive Strain Injury (RSI) or Musculoskeletal Disorder (MSD) (American Apparel and Footwear Association: AAFA, 2005; Oziem, 2019). Repetitive Strain Injury (RSI) or (MSD) affect the muscle, nerves, tendons, ligaments, joints, cartilage and spinal disc (Adhakari, 2018). The major symptom being chronic pains in upper extremities and waist (Pascreli, 2008; Wells, 2018). The severity of the injury increases over time and does not stop unless the worker changers the factors that created the injury in the first place (Occupational Health Safety and Administration, 2000; Stevenson, 2018). This involves application of ergonomic principles in the workplace.

The term ergonomics is coined from Greek word "ergon" meaning "work" and "nomous" – "law" in other words work rules. Ergonomics is the science of designing machines, products and system to maximize safety, comfort and efficiency of the people who use it. It tries to adjust the job to fit the body needs (Alan, 2008). Ergonomics considers workers efficiency productivity and speed. Workspaces are well designed to ensure that workers perform their jobs in optimal comfort, without experiencing unnecessary physical and mental fatigue that can slow down performance, reduce accuracy or cause accidents. Thus workplaces are designed with injury prevention in mind (Pascreali, 2008; Ergonomics in the Workplace, 2018; Wells, 2018).

Ergonomics has principles guiding its application. These principles are methods of preventing work hazards, stress and fatigue in the workplace. Ergonomics principles include: working in neutral postures i.e. maintaining the 'S' curve of the spine, reducing excessive force, repetitive motion and pressure points, keeping everything within easy reach to prevent bending and twisting the trunk among others (Mcleod, 2008). Ergonomics are hinged on maintaining good working posture, easy of reach tools and equipment maintaining comfortable workplaces and environmental and safety consciousness in workplace. Ergonomics is therefore beneficial to people in several ways, it improves productivity and quality of work, it also improves safety and health of the workers, reduces absenteeism from work and reduces occupational injuries and illness (Adhakari, 2018; Ergonomics in the Workplace, 2018; Wells, 2018).

Most times ergonomics are neglected when thinking about potential hazards that exist in the workplace (Muhundham, 2013). This is because injuries caused by ergonomics hazards are not obvious as injuries from falls from a height, dangerous chemicals among others. However, RSI or MSD can be detrimental and can lead to physical disability in the risk factor if left uncontrolled (Stevenson, 2018). It is the single largest category of workplace injuries and are responsible for almost 30% of all workers compensation cost (Adhakari, 2018). According to United States Bureau of Labour Statistics (2012) more than 60% of the workplace illnesses are associated with RSI. A national survey in Netherlands have shown a high annual incidence of musculoskeletal disorder symptoms of (47%) in the garment industry where preventive measures are thin on ground (Mctammy, 2001).

The researcher through experience, observation and preliminary studies carried out using focus group discussions in South Eastern Nigeria observed that the garment workers suffer from RSI or MSDs, their work practice and workstation were not in accordance with ergonomic principles. Solution proffered to the problem of RSI does not bear the principles of ergonomics in mind. These include quitting the job, medical treatment or making up one's mind to live with it.

To minimize these potential strains and injury, it is important to improve the ergonomics of the workplace. Thus the prevalence of RSI among the garment workers and their ignorance about ergonomic principles is a serious gap that need to be filled. In other to do this, it is imperative to first of all study their current work practice and workstation in order to determine the ergonomic principles they needed in their garment companies for pattern drafting, hence the need for the study.

Purpose of the Study

The major purpose of the study was to investigate ergonomic principles needed by garment workers for pattern drafting in South Eastern Nigeria. Specifically, the study determined:

1. ergonomic principles needed for pattern drafting in South Eastern Nigeria.
2. problems encountered by garment workers in adopting the needed ergonomic principles in South Eastern Nigeria.
3. ways of enhancing the adoption of the needed ergonomic principles.

Hypothesis

$H0_1$: There is no significant difference in the mean responses of garment workers with different number of years of experience on important ergonomic principles needed in their garment companies.

Methodology

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

***Area of the Study*:** The study was carried out in South Eastern Nigeria. South Eastern Nigeria is largely dominated by the Igbo ethnic group which are generally known for their commercial activities. Their entrepreneurship drive has made them to diversify in various areas of manufacturing, including garment production. Most of these garment industries are sited in Aba and Onitsha which are the two major commercial cities in the South Eastern Nigeria. Only 19 garment companies were registered; ten (10) in Aba and nine (9) in Onitsha. Greater number of the garment companies were not registered but for the purpose of this study, only the registered ones were used.

***Population for the Study*:** The population for this study was made up of 267 garment workers which were drawn from the 19 registered garment companies in Aba and Onitsha (Source: Garment Industries Ad www.webcrawler.com). These are the two major commercial cities where most garment companies were sited in South Eastern Nigeria. The garment workers or operators within these companies were used, because they are directly involved in the sewing job; drafting, cutting, stitching/assembling, finishing and packaging of garments.

***Sample for the Study*:** The entire population was used since the population size was manageable.

***Instrument for Data Collection*:** Data was collected using a structured 45 item questionnaire titled Ergonomic Principles Needed for Garment Workers for Pattern Drafting (EPNGWPD). The instrument was validated by three experts. Two lecturers from University of Nigeria Nsukka and one physiotherapist from Federal Medical Centre, Owerri. The questionnaire items were designed to elicit the necessary information needed for ascertaining ergonomic principles needed by garment workers for pattern drafting in South Eastern Nigeria.

***Data Collection and Analysis*:** Two hundred and sixty-seven (267) copies of the questionnaire were administered to the respondents with the help of five research assistants. The instrument recorded 97.3% return rate, 260 copies were returned out of the 267 copies administered.

***Method of Data Analysis*:** The data were analyzed using mean, standard deviation, need gap and ANOVA.

To determine the need gap the following procedures were adopted:

weighted mean of each item under the needed category (XN) was calculated.

weighted mean of each item under the performance category (XP) was calculated.

difference between the two weighted means for each item (XN – XP) was determined.

The decision rules were as follows:

- A zero (0) value indicated that ergonomic principles were not needed because the level at which the item was needed is equal to the level at which the respondents can perform it.
- A positive (+) value indicated that capacity building is needed because the level at which the item was needed is higher than the level at which the respondents perform it.
- A negative (-) value indicated that ergonomic principles is needed because the level at which the item was needed is lower than the level at which the respondents can perform it.

Results

The results of this study were presented in Tables 1 – 4 based on the specific purposes. The data for answering research question one are presented in Table 1

Table 1: Need Gap Analysis (NGA) of ergonomics principles needed by garment workers for pattern drafting and the present level of practice by the garment workers (N = 260).

S/N	Ergonomic principles needed by garment workers for pattern drafting	$\overline{X}_N$	$\overline{X}_P$	NG ($\overline{X}_N - \overline{X}_P$)	Remarks
1.	Adjusting the table height to accommodate different workers	3.56	2.36	1.17	IN
2.	Ideal table height for drafting should be 2″ – 3″ below the workers elbow level	3.40	2.56	0.84	IN
3.	Tilting the drafting table to improve posture and visibility	3.62	2.83	0.79	IN
4.	Arranging the drafting tools, pencils, paper, pin, ruler, etc within easy reach of the worker	3.47	2.35	1.12	IN
5.	Organizing the work station to rotate between standing/sitting posture	3.59	2.32	1.27	IN
6.	Use of task lighting to increase visibility	3.13	3.19	- 0.06	INN
7.	Placing of foot rest to minimize fatigue and blood circulation problem during prolong standing.	3.63	2.56	1.07	IN
8.	Using of swivel chairs to reduce the rate of twisting the body when the worker turns sideways	3.28	2.91	0.37	IN
9.	Drafting chair with lumber curve and firm cushioning on the back rest and seat pan is preferred to help support the back.	3.59	2.43	1.16	IN
10.	Using of chairs with forward tilt at the edge to help take away contact pressure off the leg of the worker.	3.21	3.10	0.11	IN

Note: X_N = Mean Needed; X_P = Mean Practices; NG = Need Gap; IN = Improvement Needed; INN = Improvement Not Needed

Table 1 shows that the nine out of the ten ergonomics principles had their need gap (NG) values ranged from 0.11 to 1.27 which are all positive. This indicates that the garment workers in Southeast Nigeria require improvement in the nine identified ergonomics principles that are required for pattern drafting of fabric. On the other hand, the need gap value for item six was -0.06 which was negative, indicating that garment workers in Southeast Nigeria did not require improvement in using task lighting to increase visibility in garment industry in Southeast Nigeria.

Table 2: Mean Ratings of the Responses of the Respondents on possible constraints to adoption of the needed ergonomic principles by garment workers in South East Zone. (N – 260)

S/N	Possible constraints to adoption of ergonomic principles include:	$\bar{X}$	SD	Rmk
	(a) Human Factors (Worker)			
1.	Physical disability like deformed limbs.	3.33	0.94	A
2.	Lack of training skills and experience on ergonomic principles.	3.27	0.82	A
3.	Cost of ergonomically optimization of work station.	3.61	0.68	A
4.	Lack of funds for procurement of improved tools and equipments.	3.64	0.65	A
5.	Problem of technology transfer e.g. standard sewing machine height for Asian descend not matching the body size of Africans with large body size.	3.46	0.83	A
6.	Non-challant attitude towards ones health and safety	3.70	0.64	A
7.	Loss of control over work due to pressure of work	3.54	0.83	A
8.	Problem of overcrowding in workplace due to limited space.	3.63	0.68	A
9.	Not accepting to be taught better ways of performing task.	3.53	0.85	A
10.	Inability to read hand book and instructional manuals.	3.74	0.56	A
11.	Ignorance about the long term effect of occupational injury and as such does not see the need.	3.53	0.83	A
	(b) Environmental Factors			
12.	Extreme weather conditions which may be too hot or cold for proper work.	3.44	0.85	A
13.	Inadequate power supply to operate automated equipment and tools and illumination of work surface.	3.80	0.55	A
14.	Crowding of work area due to problem of space as workplace not originally designed for the job.	3.55	0.67	A

Note: X = Mean; SD = Standard Deviation; A = Agreed; N = Number of Respondents

Table 2 reveals that, the mean ratings of the responses of the respondents on all the 14 items in the table ranged from 3.27 to 3.80 which were greater than the cut-off point value of 2.50 on 4 point rating scale. This finding indicated that garment workers in Southeast Nigeria agreed that all the 14 identified items in the table are the constraints militating against the adoption of the needed ergonomic principles by garment workers in Southeast Nigeria. The standard deviation values of the 14 items in the table ranged from 0.55 to 0.94 which indicated that the responses of the respondents are close to the mean and one another.

Table 3: Mean Ratings of the Responses of the Respondents on ways through which the adoption of these needed ergonomics principles can be enhanced (N = 260)

S/N	Possible ways through which the adoption of ergonomic principles be enhanced include:	$\bar{X}$	SD	Rmk
	(a) Creating Awareness			
1.	Public enlightenment campaign on the benefits of application of ergonomic principles and ways of adopting it.	3.53	0.83	A
2.	Radio and television programmes on dangers of developing Repetitive Strain Injuries (RSIs) or Work Related Musculoskeletal Disorder (WMSDs)	3.56	0.82	A
3.	Leaflets, posters and flyers on rules and regulations formula on occupational, safety and health.	3.61	0.71	A
4.	Bill board information on ergonomic principles – "work smart".	3.86	0.44	A
5.	Health talks on occupational health and safety in the garment industry	3.53	0.83	A
	(b) Arousing Interest			
6.	Case study meetings on application of ergonomic principles in the garment industry and ways of adopting it	3.60	0.81	A
7.	Brain storming on application of ergonomic principles in the garment industry	3.53	0.85	A
8.	Formation of adoption of ergonomic principles discussion groups	3.68	0.70	A
9.	Radio talk shows/commentaries on ways of adopting ergonomic principles in the garment industry.	3.73	0.64	A
10	Display of ergonomic sewing tools and accessories	3.20	0.98	A
	(c) Enhancing Evaluation Process			
11	Continuous training of workers at all levels	3.53	0.82	A
12.	Organize seminars and invite professionals to make presentation on the various aspects of the application of ergonomic principles in the garment industry	3.42	0.92	A
13.	Creation of web page of web site on application of ergonomic principles in the garment industry.	3.56	0.82	A
14.	Exhibition with display of stickers, magazines and newsletters on ergonomic principles and its application.	3.73	0.62	A
15.	Dramatization and role playing on application of ergonomic principles and the adoption processes.	3.59	0.81	A
16.	Display of some ergonomic tools and accessories used in the sewing industries to show their intricacies and benefits.	3.63	0.82	A
	(d) Encouraging Trial			
17.	Organize competitions on application of ergonomic principles in the manufacture section of the garment industry	3.71	0.49	A
18.	Train management staff and trade union leaders and representatives to train others.	3.41	0.88	A
19.	Give take home assignment to management staff and trade union leaders in order to encourage practice in their industry	3.71	0.49	A
20	Arrange for group practical sessions to enhance practice of trials	3.57	0.81	A
21	Allow time for result demonstration.	3.38	0.89	A
	(e) Ensure Adoption			
22	Organize and present award for long practicing industry or workers	3.52	0.83	A
23	Generate indigenous local practice groups instead of foreign ones	3.61	0.76	A
24	Form new practicing groups	3.54	0.77	A
25	For allied industry practicing groups	3.63	0.76	A

Note: X = Mean; SD = Standard Deviation; A = Agreed; N = Number of Respondents

Table 3 shows that the mean ratings of the responses of the respondents of the 25 items in the table ranged from 3.20 to 3.86 which were all greater than the cut-off point value of 2.50 on 4 point rating scale. This finding indicated that garment workers in Southeast Nigeria agreed that all the 25 identified items in the table are the possible ways through which the adoption of the needed ergonomics principles be enhanced in garment industry in Southeast Nigeria. The standard deviation values of the 25 items in the table ranged from 0.44 to 0.98 which indicated that the responses of the respondents are close to the mean and one another.

Testing of Hypotheses

H0$_1$: There is no significant difference in the mean response of garment workers with different number of years of experience on important ergonomics principles garment workers need to adopt for pattern drafting in their garment companies.

The data for tasting hypothesis one are presented in Table 4.

Table 4: Analysis of Variance (ANOVA) in the Mean Ratings of the Responses of Garment Workers on Ergonomics Principles Needed for Pattern Drafting in Garment Industry.

S/N	Ergonomic principles needed by garment workers for pattern drafting	Total Sum of Square	Mean Square	F-cal	P-value (Sig)	Rmk
1.	Adjusting the table height to accommodate different workers	171.754	0.66	1.25	0.28	NS
2.	Ideal table height for drafting should be 2”-3” below the workers elbow level	222.785	0.86	0.34	0.84	NS
3.	Tilting the drafting table to improve posture and visibility	158.812	0.60	1.87	0.11	NS
4.	Arranging the drafting tools, pencils, paper, pin, ruler, etc within easy reach of the worker	196.862	0.74	3.30	0.03	S*
5.	Organizing the work station to rotate between standing/sitting posture	170,785	0.66	0.31	0.87	NS
6.	Use of task lighting to increase visibility	192.288	0.35	3.13	0.04	S*
7.	Placing of foot rest to minimize fatigue and blood circulation problem during prolong standing.	102.288	0.39	1.37	0.24	NS
8.	Using of swivel chairs to reduce the rate of twisting the body when the worker turns sideways	248.504	0.96	0.97	0.42	NS
9.	Drafting chair with lumber curve and firm cushioning on the back rest and seat pan is preferred to help support the back.	168.785	0.66	0.15	0.96	NS
10.	Using of chairs with forward tilt at the edge to help take away contact pressure off the leg of the worker.	141.365	0.53	1.79	0.13	NS

Note: Level of Sig. = 0.05; **NS** = Not Significant; **S*** = Significant; DF – Degree of Freedom = 259

Table 4 shows that 8 out of the 10 items in the table had their p-values ranged from 0.11 to 0.96 which were greater than 0.05 level of significance. This indicated that there were no significant differences in the mean ratings of the responses of garment workers with less than 10 years, between 11 to 20 years and above 21 years of working experience on ergonomics principles needed by garment workers for pattern drafting in garment industry. Therefore, the null hypothesis of no significant difference in the mean ratings of the responses of the garment works based on their years of working experience was accepted for the 8 identified items of pattern drafting in garment industry. On the other hand, the p-values of the remaining two items, specifically item 4 and 6 were 0.03 and 0.04 respectively which were in each case less than 0.05 level of significance. This indicated that there were significant differences in the mean ratings of the responses the garment workers based on their years of working experience on the remaining 2 items of patterns drafting in garment industry in South-East Nigeria. Therefore, the null hypothesis of no significant difference was rejected for the 2 identified ergonomics principles needed by garment workers for pattern drafting.

Post-hoc analysis with scheffe test of multiple comparisons was used to show the direction of the significant difference in the mean ratings of the responses of the three groups of respondents on the two significant items. The result of the Post-hoc showed that, there were significant differences between the response of garment workers with less than 10 years of working experience and those with more than 21 years of working experience on the two items.

Discussion of Findings

The discussion of the findings showed that the respondents needed ergonomic improvement in pattern drafting in the following: adjusting the table height to accommodate different workers, tilting the drafting table to improve visibility, drafting chair should have lumbar curve and foam cushioning on the back rest and seat pan to help support the back among others. This is consistent with the findings of Sardar, Imohan, Mandahawi (2006) in Dhaka Bangladesh which revealed poor application of ergonomic principles, unadjustable table height, seat devoid of back rest which would have allowed intermittent micro breaks for resting the upper body after stressful session of bending the trunk and neck. Also seats were hard and wooden without cushion to prevent tissue compression at the area of the Ischia tubuosities. Similarly Sealesta and Thatcher (2009) also found garment workers using spinning cones and pillows to raise the height of the seats for greater visibility. Finally, Adedoyin & Olusegun (2015) who also observed anthropometric differences in workers resulting in ergonomic hazards. These findings negates the recommendation of Hargrare and Graig (2000), Sewing Craft and Alliance (2008), Health and Safety Executive (2013) and Oziem (2019) which emphasized workers sitting or standing in neutral position in other to keep the spine aligned and prevent tissue injury. In essence tasks lighting, chairs and work aids may be raised or lowered to accommodate body dimensions of the user for increased comfort and efficiency. It was not surprising that the garment works as revealed by the findings needed ergonomic improvement in pattern drafting tasks. This underscores the reason for the prevalence of RSI among them, observed in the preliminary study.

Furthermore, all the 14 items on possible constant on adoption of ergonomic principles by garment workers were accepted with mean rating ranging from (X = 3.27 – 3.80) which were greater than the cut-off point value of 2.50 on 4 – point rating scale. Also the standard deviation values of the 14 items in the table ranged from 0.55 to 0.94 which indicated that the responses of the respondents were close to the mean and one another. The possible constraints include; cost of ergonomically optimization of work place, nonchalant attitude towards one's health and safety, ignorance about the long term effect of occupational injury and as such does not see the need among others.

The findings is in line with observation of International Labour Organization (2001) and Stevenson (2018) about the nonchalant disposition of many workers in developing countries who view ergonomic principles as idealistic and for others, ergonomic problems may not be high on the priority health and safety problems they face. This disposition may also reflect their ignorance about the long term effect of ergonomic hazards which according to (Scoff, 2011) only 23% estimated Cumulative Trauma Disorder (CTDs) also known as RSI patients return to their previous jobs after surgery and perhaps a third of CTDs patients will require unlimited medical treatment, ignorance of the respondents may be attributed to lack of awareness in Nigeria as revealed by the findings of Ismaila (2010) where only 3.4% of the population of the respondents were aware of ergonomics.

Finally, the 25 items on ways of enhancing the adoption of ergonomic principles were all accepted which include; public enlightenment on benefits of application of ergonomic principles through mass media viz radio, leaflets, billboards among others, organization of seminars and workshops for garment workers among others. These agrees with the recommendations of AAFA (2005) and Stevenson (2018) organizing at least annual training for employee which should include discussions on prevention of work related CTDs or RSI, the principles of and goals of ergonomics, signs and symptoms of Work Related Muscloskeletal Disorder (WMSPs) and how to arrange the workplace to reduce ergonomic problems. Enlightenment of works and general public is very important to encourage proactive health care which is far cheaper than reactive healthcare. Prevention is better than cure.

Conclusion

Work related ill health takes its toil in reducing workers efficiency, productivity and even death in some cases. Ergonomics also known as humanics tries to adjust the job to suit the body needs of the workers. It helps to improve productivity, efficiency, safety and health of workers and reduces occupational injuries and illness. Occupational health of garment worker which are engaged in pattern drafting which is a major process in garment making is of paramount concern. Improper workstation and work procedures have been found as a major risk factor in the development of RSI or CTDs. Hence, the need for ergonomic improvement.

Recommendations

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

1. The Government through the Ministry of Commerce and Industry under the trade unions should help to package the identified ergonomic principles needed by garment workers for pattern drafting into training manuals or buffeting.
2. Public enlightenment by Government through the mass media.
3. Inclusion of ergonomic hazard prevention in the school curriculum under first aid and safety education.
4. Practice of ergonomic principles by Home Economics teachers in pattern drafting practicals to inculcate the adoption of ergonomic principles into their students.

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