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UNMET NEEDS IN THE IMPLEMENTATION OF PRIMARY HEALTH CARE IN RURAL OVIYA COMMUNITIES, EDO STATE

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Abstract

The objective of primary health care is to provide affordable and accessible health services to the people at the grassroot level. This objective has over the years been hindered by numerous challenges that affect the effective and efficient implementation of primary health care. The aim of the study was to investigate the unmet needs in the implementation of primary health care in rural Ovia communities, Edo state. Three hypotheses were formulated. The descriptive research design of survey method was used for the study. The multi-stage sampling technique was used to select 180 respondents which were selected from the 326 PHC providers and community heads in Ovia communities. Data were collected through a researcher developed questionnaire. The questionnaire was a closed-ended of four-options modified Likert scale. The content validity of the questionnaire was done by three experts in public health and health education. In order to ascertain the reliability of the instrument, the researcher used the test re-test method of reliability and 0.80 was obtained which demonstrate high reliability of the instrument using Pearson Product Moment Correlation analysis. The instrument was administered by the researcher with the aid of three trained research assistants who were indigenes of the sampled areas. The inferential statistic of Chi-square was used to test the null hypotheses formulated at 0.05alpha level of significance. The study findings revealed that lack of community involvement, inadequate funding and provision of inadequate facilities were unmet needs in the implementation of primary health care in Ovia communities, Edo state. The study concluded that the lack of community involvement in the planning, implementation and evaluation of primary health programmes, inadequate funding to purchase health supplies and adequate fund community health programmes and poor state of health facilities affected the effective and efficient implementation of primary health care in Ovia communities. The study therefore recommended among others that village/ward health development committees should be reinforced by local government health authorities across various clans of the community to ensure community involvement in the planning, implementation and evaluation of primary health programmes.

Keywords: Unmet needs, primary health care, rural, communities and implementation

Introduction

Primary Health Care is the essential health service provided at the grassroots level that is accessible, culturally accepted, technologically driven with maximum coverage level to ensure health for all that is equally affordable at every stage of the community development. Again, World Health Organization (2008) explained that primary health care is regarded as the first level of contact of individual, family and community with a country health care delivery system bringing health services such as immunization, maternal health care services, control of communicable and non-communicable diseases, disability rehabilitation services and child health care services as close as possible to where people live and work. PHC forms an integral part of a country's health care system that ensures basic provision of health services to community members. Despite this central role, PHC services are still inefficient and still lack full coverage in relation to accessibility, affordability and acceptability and presently lacking the needed technologies to promote efficiency and coverage in Nigeria (Oyibocho, Irinoye, Sagua, Ogungide-Essien, Edeki & Okome, 2014).

Primary Health Care as part of Nigerian health care system is not devoid of challenges related to accessibility, cultural acceptability and responsiveness within adequate financing details, planning and management (National Primary Health Care Development Agency, NPHCDA, 2007). Lambo (2015) expressed that the tertiary healthcare system should not see more than three (3) percent of the total population in the country; while the secondary health care system and primary health care system should resolve 27% and 70% percent of the community members' health challenges respectively. This arrangement is only possible in a well-defined and adequately implemented PHC programme. However, this is not the case due to emerging and prevalent challenges facing the implementation of PHC in Nigeria (Alenoghena, Aigbiremilen, Abejegah & Eboreime, 2014).

The national guidelines for the implementation of PHC need to be adhered to in order to improve health status of the people nationally. Mohammad (2015) expressed that the formulation of policies guiding PHC in the country is coordinated nationally by the NPHCDA. It was further stressed that the initiative of "Bringing PHC under One Roof" is to enable the roles of multiple MDAs to be streamlined such that ministries of local government and the local government service commission and the office of the executive governor cease to have significant role to play in PHC implementation. However, the responsibility for PHC implementation remains with the local government health authorities (LGHAs). In Nigeria, a lot has been done to improve the health status of the citizens within successive government and partnership with international health agencies; but there is still a wide gap between the Nigeria health condition and the expected health status in relation to the objectives of PHC, objectives of Health For All (HFA) and the standard set by global health initiative (WHO, 2014). The activities of PHC need to be supervised to ensure the programme achieve set objectives. The poor political will, mismanagement of resources and other anti-social activities prevent the effective supervision of the activities of PHC in Nigeria and Edo state in particular.

In Nigeria, community participation was institutionalized in 2003, through the creation of District Committee (DDC) and the Village Development District (VDC) (Abdulraheem, Oladipo, and Amodu, (2012). Ojeifo (2008); Inyang and Doubrapade (2016) carried out a study in Edo and Bayelsa states respectively and reported that in spite of community participation strategic importance to the actualization of the goals of equitable access to, and utilization of PHC services, community mobilization and participation are remarkably low in Edo and Bayelsa states. According to Bamako initiative in 1987, three

committees are relevant which include community/village health management committee, ward health committee and youth/women committee (Marafa, 2005). A study in Edo state reflected that none of the committees was available and functional (Ojeifo, 2008). Funding is part of the national health bill to enhance the implementation of primary health care in Nigeria. Uzochukwu, Ughasoro, Etiaba, Okwuosa, Envulada and Onwuyekwe (2015) expressed that the way a country finances its health care system is a critical determinant for reaching universal health coverage. Obansa and Orimisan (2013) expressed that health care resources allocation in Nigeria is skewed in favour of the secondary and tertiary health care as against the primary health care thereby limiting the fund for implementation of primary health care programmes. Timothy, Irinoye, Yunusa, Dalhatu, Ahmed and Suberu (2014) reported that healthcare financing is worse in developing countries where health services face issue of out-pocket expenditure accounting for over 72 percent of total health expenditure. Facilities are various structures, equipment and other form of logistics needed to function in the health care delivery system. The health facilities include buildings, laboratories, equipment and supplies such as refrigerators, syringes, essentials drugs, and vaccines. A study carried out by Odusanya, Alufohai, Meurice and Ahonhkai (2008) revealed the weak state of primary health care in Nigeria as the survey revealed that minimum equipment package, structure, essential drugs, refrigerators for vaccine preservation, syringes and chairs in the patients' waiting room were grossly lacking. Many researchers like Adewumi, Odaibo, Bakarey and Opaleye (2011) have expressed that the poor supply of energy to preserve the vaccines may result into many of the vaccines losing their potency; hence the vaccines are not effective to eradicate the vaccine preventable diseases like poliomyelitis and measles still found in the communities. It was also reported by Musa and Ejembi (2004) that torch-lights are sometime used to take deliveries due to lack of power supply in the PHC centres. Essential drugs are limited basically because of inequality in distribution of the essential drugs or poor road network to access the primary health care centres. In some cases, there are no laboratory consumables like hand gloves, syringes and other facilities to diagnose ill health

According to Edo State Ministry of Health (2010), infant mortality rate is 100 per 1000 live births, maternal mortality rate is 700 per 100,000; life expectancy for male and female is 50 years and 54 years respectively, routine immunization coverage is less than 72 percent. These data indicate a wide gap between what is on ground and what ought to be in terms of implementation of PHC in Edo state. The rural based challenges has resulted to the high infant mortality rate, maternal mortality rate, crude death rate, prevalence of sexually transmitted diseases, prevalence of chronic diseases such as diabetes and hypertension and low life expectancy of the people in Ovia communities. The following formulated hypotheses were tested for the study;

1. Community involvement will not be considered a significant unmet need in the implementation of primary health care in Ovia communities, Edo state.
4. Inadequate funding will not be considered a significant unmet need in the implementation of primary health care in Ovia communities.
5. Provision of inadequate facilities will not be considered a significant unmet need in the implementation of primary health care in Ovia communities.

Methods and Materials

The study employed the descriptive research design of survey method. It is called descriptive research design because the information about the independent and dependent variables that

are gathered represent the current trend at a particular point in time (Wilford, 2015). The descriptive research design was best in collecting data relating to the variables of interest without the manipulation of the variables as the focus was to describe the variables of interest and make generalizations concerning the unmet needs in the implementation of primary health care in Ovia communities. The population of the study comprised all PHC providers, community heads. The population of the study is 326 (Edo State ministry of Health, 2020). The sample for the study was 180 to allow for manageability of the respondents. The multi-stage sampling technique was used for the sampling approach. In the first stage, the Ovia south and Ovia North East Local government areas were stratified. Each of the LGA has 12 village health districts. Secondly, the simple random sampling was used to select 6 each of the 12 village health districts or committees. Thirdly, from the 12 selected village health committees, 12 PHC stakeholders were purposively selected to make 144 PHC stakeholders. Finally, from different clans in the communities, 18 village heads each from the two LGAs that make Ovia communities were selected to give 36 village heads. Therefore, 144 PHC stakeholders and 36 village heads totaled 180 made up the sample. Data were collected with a researcher developed questionnaire. The questionnaire was a closed-ended of four-options Likert rating scale where the respondents were asked to tick [Ö] one out of the four options of strongly Agree(SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The questionnaire was content validated by three experts in public health and health education. In order to ascertain the reliability of the instrument, the researcher used the test re-test method of reliability. The questionnaires were pilot tested among 16 PHC stakeholders. The questionnaires were re-administered after two weeks interval. The data collected from the two administrations were subjected to the statistic of Pearson Product Moment Correlation (PPMC) and a reliability coefficient (r) of 0.80 was obtained. The instrument was administered by the researcher with the aid of three trained research assistants who were indigenes of the sampled areas. The inferential statistic of Chi-square was used to test the null hypotheses formulated at 0.05alpha level of significance.

Results

Hypothesis One: Community involvement will not be considered a significant unmet need in the implementation of primary health care in Ovia communities, Edo state.

Table 1: Chi-square analysis showing PHC stakeholders responses on community involvement and implementation of PHC Ovia communities, Edo state.

S/N	Items	SA	A	D	SD	Row Total	Df	Cal χ^2	Critical value	Decision
1.	Community members are part of plans for PHC in the community.	10(5.6%)	6(3.3%)	84(46.7%)	80(44.4%)	180				
2.	Community members are part of the plans of supervision of the PHC programmes.	5(2.8%)	5(2.8%)	60(33.3%)	110(61.1%)	180				
3.	Community members have a link with the PHC service providers.	10(5.6%)	6(3.3%)	84(46.7%)	80(44.4%)	180				
4.	The village heads encourage the members to participate in PHC services	16(8.9%)	80(44.4%)	--	84(46.7%)	180	15	144.08	24.99	Ho Rejected
5.	There is a functional ward/village health committee.	10(5.6%)	6(3.3%)	80(44.4%)	84(46.7%)	180				
6.	Community members are given the opportunity to report their health needs.	15(8.3%)	15(8.3%)	120(66.7%)	30(16.7%)	180				

Pr=0.05

The findings from analysis of hypothesis one in table 1 revealed that calculated chi-square of 144.08 is greater than the critical value of 24.99 of degree of freedom 15 at 0.05 level of significance. The null hypothesis stated above was therefore rejected. This implied that lack of community involvement was a significant unmet needs in the implementation of primary health care in Ovia communities, Edo state.

Hypothesis Two: Inadequate funding will not be considered a significant unmet need in the implementation of primary health care in Ovia communities, Edo state.

Table 2: Chi-square analysis showing PHC stakeholders' responses on inadequate funding and implementation of PHC Ovia communities, Edo state.

S/N	Items	SA	A	D	SD	Row Total	Df	Cal χ^2	Critical value	Decision
1.	There is no money to provide alternative power in PHC centres.	120(45.8%)	50(27.7%)	10(5.5%)	10(5.5%)	180	15	163.72	24.99	Ho Rejected
2.	PHC service providers complain of no money to run primary health care programmes.	112(62.2%)	60(33.3%)	4(2.2%)	4(2.2%)	180				
3.	Poor remunerations of PHC workers lower their commitment.	80(44.4%)	82(45.6%)	10(5.6%)	8(4.4%)	180				
4.	PHC service providers complain of overdependence on external donors for funds.	82(45.6%)	80(44.4%)	8(4.4%)	10(5.6%)	180				
5.	Poverty in communities negatively affect PHC services.	50(27.8%)	100(55.6%)	15(8.3%)	15(8.3%)	180				
6.	Report of low immunization coverage is due to poor funding.	80(44.4%)	60(33.3%)	20(11.1%)	20(11.1%)	180				

Pr=0.05

The findings from analysis of hypothesis one in table 2 revealed that calculated chi-square of 163.72 is greater than the critical value of 24.99 of degree of freedom 15 at 0.05 level of significance. The null hypothesis stated above was therefore rejected. This implied that inadequate funding was a significant unmet needs in the implementation of primary health care in Ovia communities, Edo state

Hypothesis Three: Provision of Inadequate facilities will not be considered a significant unmet need in the implementation of primary health care in Ovia communities, Edo state.

Table 3: Chi-square analysis showing PHC stakeholders responses on provision of Inadequate facilities and implementation of PHC Ovia communities, Edo state.

S/N	Items	SA	A	D	SD	Row Total	Df	Cal χ^2	Critical value	Decision
1.	PHC buildings are dilapidated.	70(38.9%)	70(38.9%)	20(11.1%)	20(11.1%)	180	15	156.92	24.99	Ho Rejected
2.	There are no laboratories for blood examination in PHC centres.	80(44.4%)	82(45.6%)	14(7.8%)	4(2.2%)	180				
3.	Provisions of essential drugs are lacking in PHC centres.	82(45.6%)	80(44.4%)	10(5.6%)	8(4.4%)	180				
4.	Refrigerators are not provided in PHC centres.	84(46.7%)	82(45.6%)	12(6.7%)	2(1.1%)	180				
5.	Water supply in PHC centres is not sufficient.	84(46.7%)	82(45.6%)	10(5.6%)	4(2.2%)	180				
6.	Equipment to work with by PHC service providers are available.	12(6.7%)	4(2.2%)	44(24.4%)	120(66.7%)	959				
Column Total		2146	2264	637	707	5754				

Pr=0.05

The table 2 showed that chi-square analysis of formulated hypothesis two. The calculated chi-square value was 156.92 while the critical value at degree of freedom 15 was 24.99. The calculated chi-square value was greater than the critical value at 0.05 alpha level of significance. Therefore, the null hypothesis formulated was rejected. This implied that inadequate health facilities were significant unmet needs in the implementation of primary health care in Ovia communities, Edo state.

Discussion of Findings

The findings of the study revealed that lack of community involvement, inadequate funding and provision of inadequate facilities were unmet needs in the implementation of primary health care in Ovia communities, Edo state. Specifically, the study revealed that community members are not part of the planning, implementation and evaluation of PHC programmes and there is no functional ward/village health committees that see to the development and implementation of PHC programmes. The finding is in corroboration with that of Ojeifo (2008); Inyang and Doubrapade (2016) that revealed that community involvement in the realization of the objectives of PHC is lacking and village health development committees were not functional.

The study also revealed that inadequate funding was unmet needs in the implementation of primary health care in Ovia communities, Edo state. It revealed that funds were low to provide alternative power supply, organize community health programmes, lower workers commitment and lack of health supplies. This finding is in agreement with that of Odusanya, Alufohai, Meurice and Ahonhkai (2008); Adewumi, Odaibo, Bakarey and Opaleye (2011) who found out that many primary health care centres are dilapidated, not adequately funded, lack of health supplies and in some cases torchlight is used to take deliveries.

Finally, the study also revealed that inadequate provision of facilities were unmet needs in the implementation of primary health care in Ovia communities, Edo state. It revealed that primary health care centers were dilapidated, limited supplies of drugs, refrigerators available not working, water supply was a big issue and other equipment to work with were not available or limited. This corroborates with the findings of Musa and Ejembi (2004); Aideyan (2019) who expressed disappointment in the state of primary health care centres, the limited supply of health equipment and the lack of drugs in some centres.

Conclusion

Based on the findings of the study, it was concluded that;

1. lack of community involvement is an unmet need in the implementation of primary health care in Ovia communities, Edo state
2. inadequate funding is an unmet need in the implementation of primary health care in Ovia communities, Edo state
3. provision of inadequate facilities is an unmet need in the implementation of primary health care in Ovia communities, Edo state

Recommendations

From the findings and conclusion of the study, the following recommendations were made;

1. Village/ward health development committees should be reinforced by local government health authorities across various clans of the community to ensure community involvement in the planning, implementation and evaluation of primary health programmes.
2. Government should improve funding allocation on health and great emphasis to primary health care system to ensure health for all at the grass root levels.
3. There should be well defined partnership and collaboration among external donors on the provision of health facilities and government at home should ensure effective monitoring and supervision to ensure facilities are provided and adequately utilized.

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ANALYSES OF THE EFFECTS OF RESISTANCE TRAINING ON IMPROVING RANGE OF MOTION IN PATIENTS WITH KNEE OSTEOARTHRITIS AT FEDERAL MEDICAL CENTRE, YOLA

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Abstract

The purpose of this study was to analyses the effects of resistance training on improving range of motion among patients with knee osteoarthritis at Federal Medical Centre, Yola. Twenty (20) participants undergoing physiotherapy treatment at the physiotherapy department were purposively selected, each participant performed resistance training using resistance machine three (3) times in a week for twelve (12) consecutive weeks. Before the training and after the training flexion/extension was measured using goniometer. The data collected was analyzed using descriptive statistics and the hypothesis was tested using repeated measures one-way analysis of variance (ANOVA) at a significance level of 0.05. The results of the study showed significant improvement in range of motion at eight (8) and twelve (12) weeks respectively, in the goniometry measure of flexion/extension compared to the measure in four (4) weeks. Based on the findings of this study, it was concluded that resistance training can be used to improved range of motion in patients with knee osteoarthritis. It is therefore recommended that hospitals should include resistance training as part of treatment to improve the range of motion in patients with knee osteoarthritis and Physicians can also refer knee osteoarthritis patients to both exercise scientist and physiotherapist.

Keywords: *Range of movement, knee osteoarthritis, and resistance training.*

Introduction

Knee osteoarthritis is the most common degenerative joint disease affecting both men and women over the age of forty (40) years (Srikanth, Fryer, Zhai, Winzenberg, Hosmer, & Jones, 2005). It is a disease of the hyaline cartilage in which the synovial membrane is subjected to a tremendous amount of force throughout human lives (Porter, 2013). In osteoarthritis, the top layer of cartilage breaks down and wears away and this allows bones under the cartilage to rub together; the rubbing causes pain, swelling and loss of motion at the joint. Over time, the joint may lose its normal shape and bone spurs may grow on the edges of the joint (Chamberlain, 2014). Bits of bone or cartilage can break off and float inside the joint space, which precipitate stiffness and decrease the range of movement of a joint (Chamberlain, 2014). Knee osteoarthritis is a leading cause of reduction in range of motion (functional disability) among the human population, especially elderly people. It leads to loss of self-care, independence, reduction in quality of life, loss of employment, and social engagement. It increases health care utilization and cost causes loss of income and escalates dependency.

As a certified community health extension worker, the researcher consulted patients while working with Tulsi Chain-rai Foundation (TCF) a Non-Governmental Organization (NGO) under Primary Health Care (PHC) in Adamawa State in 2015. The organization aimed at rendering free treatment to infant and children of less than two (2) years and elderly people above sixty (60) years, the researcher observed that most of the elderly patients complain were related to pain and difficulty in movement. Knee osteoarthritis is one of the major contributing factors to such problems. Therefore, this study helped in seeking other means of an increased range of motion among knee osteoarthritis patients. It was in view of these the researcher was prompted to assess the effects of resistance training on the improved range of motion among patients with knee osteoarthritis at Federal Medical Centre; a research question was formulated stated that would resistance training reduce the pain in patients with knee osteoarthritis at Federal Medical Centre, Yola? In the same vein, the researchers hypothesized that there is no significant effect of resistance training in improving the range of motion (Stiffness) among patients with knee osteoarthritis attending Federal Medical Center, Yola, Nigeria.

Method and Material

A One-group pretest-posttest research design was used for this study. The participants were subjected to pretest at the beginning of the training and posttest after four (4), eight (8), and twelve (12) weeks of training to observe whether any possible changes in the range of movement have occurred. The participants for this study consist of all knee osteoarthritis patients registered less than four (<4) weeks with the physiotherapy department of Federal Medical Centre, Yola Adamawa State Nigeria. Using the clinic record; 26 participants, 10 males, and 16 females within the age 40-70 years were selected through purposive sampling technique because only new patients who registered for Physiotherapy treatment aside from medication meet the inclusion criteria. 6 participants, 2 males & 4 females were dropped out during the cause of training as a result of inconsistency, therefore only 20 participants, 8 males & 12 females met the required attendance for this research. Functional ability was also measured using a goniometer. The resistance training was carried out for a period of twelve (12) weeks and training was done three (3) times a week for two (2) hour per day; patients were tested before training, four (4) weeks after training eight (8) weeks after training, and twelve (12) weeks after training. The data collected were

statistically analyzed to test the hypothesis of the study. Table 1.0 shows the schedule used for the training.

Table 1.0: Training Schedule

Days	Month	Aerobic warm up time	Load	Stretching training time	Repitations	Ttime	Toad
Tuesday Thursday Saturday	Jul/ Aug 2018	5 minutes	50% - 55%	15 seconds	5 reps	10 minute	5 kg
Tuesday Thursday Saturday	Aug/ Sep 2018	5 minutes	50% - 55%	20 seconds	8 reps	15 Minute	10 kg
Tuesday Thursday Saturday	Sep/ Oct 2018	5 minutes	55%- 69%	30 seconds	10 reps	20 Minute	15 kg

Reps = Repetitions, Tue = Tuesday, Thur = Thursday, Sat = Saturday, Kg = Kilogram

Results

The average stiffness level for each of the participants at 0 weeks, 4 weeks, 8 weeks and 12 weeks were calculated to be 2.894 ± 0.760 , 3.326 ± 0.762 , 2.606 ± 0.609 and 2.241 ± 0.389 respectively.

Table 2.0: Range of Motion (Stiffness) Repeated Measures ANOVA Output

Source		Type III Sum of Squares	DF	Mean Square	F	Sig.
Movability	Sphericity Assumed	12.632	3	4.211	46.521	.000
	Greenhouse-Geisser	12.632	2.490	5.072	46.521	.000
	Huynh-Feldt	12.632	2.896	4.362	46.521	.000
	Lower-bound	12.632	1.000	12.632	46.521	.000
Error (Movability)	Sphericity Assumed	5.159	57	.091		
	Greenhouse-Geisser	5.159	47.319	.109		
	Huynh-Feldt	5.159	55.022	.094		
	Lower-bound	5.159	19.000	.272		

A repeated measure one-way analysis of variance was carried out to test the null hypothesis that there is no significant effect in improving ROM (Stiffness) over the course of the resistance training programme, at a 95% confidence level. The result in table 2.0 shows $F(3, 57) = 46.521$, $p < 0.05$ which revealed that there is a significant effect in improving ROM (Stiffness) of the respondents. The P-value obtained was less than 0.05, this implies that there is a significant effect of resistance training on the average perception of (Stiffness) of the respondent over the course of the training period. In order to identify the time interval pair(s) with stiffness that has significant effects from one another, the Bonferroni pairwise comparison post hoc test was employed. The result revealed that the perceived improving ROM (Stiffness) increased significantly from 2.894 ± 0.760 to 3.326 ± 0.762 ($p < 0.05$) within week 0 to week 4. This then decreased to 2.606 ± 0.609 ($p < 0.05$) between week 4 to week 8 and then further decreased significantly to 2.241 ± 0.389 ($p < 0.05$).

Figure 1 Bonferroni post hoc test result

Based on the research findings, the null hypothesis states that there is no significant effect of resistance training in improving ROM (Stiffness) among patients with knee osteoarthritis attending Federal Medical Center, Yola, Nigeria was rejected and conclude that resistance training does have a significant effect in improving ROM among patients suffering from knee osteoarthritis at Federal Medical Center, Yola, Nigeria.

Discussion

This study was conducted on the assumption that knee osteoarthritis patients usually experience stiffness on the affected joint which limits the range of motion and difficulty in taking part in physical activities of daily living. Based on the above assumption, reduced ROM which is a problem that makes patients seeking medical attention. A similar study by Bennell, Hunt, Wrigley, Hunter, and Hinman (2007) assessing the strength of hip adductors shows reduction in knee pain and range of motion at the joint which supports the outcome of this study which revealed pain reduction, improved function and range of motion after 12 weeks of exercise training. The null hypothesis was rejected by the results of the present study: the resistance training used in this study are found to improve muscle strength and improve range of motion of the affected joint.

This finding was in line with Bardoloi, Bhutia, Bhatia and Paul (2017) found that there is strong evidence for the benefit of isometric and isotonic exercises in relieving stiffness and improving the functional status of patients. The findings of this study also agree with Creamer, Lethbridge, Cejku, & Hochberg, (2000). Disability is a major medical consequence of knee osteoarthritis and impact of such disability is very high, and comorbidity is negativity associated with limitation in moving the affected joint, disability increases in the presence of knee pain and there is a strong correlation between pain severity and reduction in range of motion. Pains lead to avoidance of physical activity which results in inactivity and muscle wasting. The findings of this study also agree with that of Dallari, Stagni, Rani, Sabbioni, Pelotti, Torricelli et al. (2016) who reported that improved range of motion and increased walking distance in six (6) minutes in a control group, which underwent exercise therapy compared to placebo treatment of ultrasound therapy at the sub-therapeutic intensity in the experimental group and the above findings support the finding of the present study. The knees are particularly prone to osteoarthritis which is assumed to be posture-related and obesity has been said to predispose to knee osteoarthritis (Otieno, Moots, Oyoo, Meltzer, Price, Omar et al., 2017) though this study did not involve obese subject but exercise as an intervention earlier can be encouraged in isolation or combination with other treatments. The result shows that exercises when combined maximize clinical outcomes and appears to be a safer intervention with relatively few contraindications.

The findings of this study also agrees with that of Hurley and Scott (1998) who reported that physical exercise can be associated with improvement in joint function with patients reporting a reduction in disability from severe to moderate, and these changes are similar to those reported in drug trials studies which have a significant impact on patients' personal independence and quality of life and can delay or even avoid the need for surgical intervention. According to Creamer et al. (2000) reduction in range of motion is attributed to capsular contracture and muscle spasm which shows significant reduction with exercise training which supported the outcome of this study. He further stated that ROM to be significantly related to disability and disability is secondary to restricted ROM. The majority of patients with knee osteoarthritis were middle age, fifty (50) years and above and this supports the facts that osteoarthritis is regarded as a disease of the middle age and old people (Carneiro, Ribeiro, Nascimento, Gobbo, and Schoenfeld, Junior et al., 2015).

Base on the above discussion, the present study supports the present findings as most of the participants were middle-aged patients, exercise therapy centered on quadriceps muscles which appear not to be the

optimal choice for all patients. Bennell et al. (2007) reported a greater number of women compared to men and the present study is in agreement with the findings. The female to male ratio of 3:1 supports the fact that hospital-based studies of knee osteoarthritis are more common among females and it is a reflection of what is obtained in the overall population which attributes it to women showing greater concern over the men. Therefore, this study showed significant improvement in range of motion after eight (8) weeks and twelve (12) weeks of participating in resistance training three (3) times in a week for twelve (12) weeks. The study is also in support of similar findings by Abbott, Robertson, McKenzie, Baxter, Theis, and Campbell (2009) studied the effect of manual therapy and exercise therapy using WOMAC in managing knee osteoarthritis. The finding of the study was also in agreement with Bennell, Egerton, Martin, Abbott, Metcalf, McManus, et al. (2014) who found a reduction in pain and improvement in range of motion following administration of aerobic and strengthening exercise training. Based on the findings of this study and previous studies, resistance training should be part of the management modalities of knee osteoarthritis patients especially for improvement in range of motion at the affected joints.

Conclusion

Based on the results of the study, the researchers concluded that knee pain is one of the predictors of reduced functional ability causing avoidance of movement and activities of daily living, range of motion, and functional disability are directly related and reflect a more severe form of disease outcome, the burden of knee osteoarthritis is high in Nigeria and resistance training is an effective modality in improving the range of motion, resistance exercise improves the condition of knee osteoarthritis patients if continue for at least 8-12 weeks, finally, the results obtained from this study show that resistance training improves body function by increasing ROM in knee osteoarthritis patients

Recommendation

The researchers, therefore, recommendations that the use of resistance training should be included in the management interject of knee osteoarthritis patients.

Future studies should address contraindications to resistance training and how best to deliver the intervention.

Further research should consider a longer duration of the training and larger sample size.

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ASSESSMENT OF CLINICAL CONSTRAINTS TO ENDING PREVENTABLE DEATHS OF NEWBORNS AS PERCEIVED BY COMMUNITY HEALTH WORKERS IN NORTH EAST ZONE, NIGERIA

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Abstract

The purpose of this study was to assess clinical constraints to ending preventable deaths of newborn as perceived by community health workers in North east zone, Nigeria. An ex-post facto research design was used to study 450 respondents drawn from three states of North east zone, Nigeria. A multistage sampling was used to draw the required sample. A questionnaire titled “questionnaire for community health workers of North east zone, Nigeria” was used to obtain information from the respondents. Data collected for this study were analyzed using SPSS Version 25.0. Descriptive statistics of mean and standard deviation and inferential statistics of t-test and Analysis of Variance (ANOVA) were used for all tests of significance. One research question was asked and one hypothesis was tested at 0.05 level of significance. Findings showed that, Community health workers were of the perception that clinical constraints to ending preventable deaths of newborn in North East Zone, Nigeria are significant ($P=0.00$). It was concluded that the identified clinical constraints to ending preventable deaths of newborn as perceived by community health workers in north east zone, Nigeria are the constraints to face in providing solutions. The researcher recommended that there is need for periodic training and retraining of community health workers to improve their skills in providing technical approaches towards ending preventable deaths of newborns and also implementing strategic solutions by health agencies and the states on clinical constraints to ending preventable deaths of newborn, likewise provision of medical supplies and clinical equipment.

Keywords: constraints, preventable death, community health

Introduction

The Sustainable Development Goals (SDGs) are a collection of 17 global goals set by the United Nations General Assembly in 2015 for the year 2030. The SDGs are part of Resolution 70/1 of the United Nations General Assembly. The goals are broad based and interdependent. The 17 sustainable development goals each has a list of targets that are measured with indicators (United Nations Children's Funds, 2017).

There are 169 targets for the 17 goals. Each target has between one and three indicators used to measure progress toward reaching the targets. The sustainable development goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges faced (UNICEF, 2017)

Sustainable Development Goal 3 (SDG 3) is established to ensure healthy lives and promoting the well-being of all at all ages which is essential to sustainable development in the country. It will be observed that significant strides have been made in increasing life expectancy and reducing some of the common killer diseases associated with child and maternal morbidity and mortality. The target 2 of the goal aims to end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births (United Nations Children's Funds, 2017).

World Health Organization (WHO) (2017), stated that, child mortality is the death of a child before the child's fifth birthday, measured as the under-5 child Mortality Rate (U5MR). W.H.O. (2017) added that, globally, 9.2 million children die each year before their fifth birthday; more than 60% of these deaths are seen as being avoidable with low-cost measures such as continuous breast-feeding, vaccinations and improved nutrition. Therefore, the progress indicators for measuring the achievement of SDG 3 target 2 are: Neonatal mortality rate.

According to Centers for Disease Control (CDC) (2017), premature birth is the biggest contributor to the child mortality rate, other leading causes of infant mortality are birth asphyxia, pneumonia, term birth complications such as abnormal presentation of the fetus, umbilical cord prolapse, or prolonged labor, neonatal infection, diarrhea, malaria, measles and malnutrition. One of the most common preventable causes of infant mortality is smoking during pregnancy (Hall, Venkatesh & Greenberg, 2016). Many factors contribute to infant mortality, such as the mother's level of education, environmental conditions, political and medical infrastructure. Improving sanitation, access to clean drinking water, immunization against infectious diseases, and other public health measures can help reduce high rates of infant mortality (Genowska, Angieszka & Jamiolkowski, 2015).

Causes of infant mortality that are related to medical conditions include: low birth weight, sudden infant death syndrome, malnutrition and infectious diseases, including neglected tropical diseases. MacDorman (2009) stated that low birth weight makes up 60–80% of the infant mortality rate in developing countries. The New England Journal of Medicine (2013) stated that "The lowest mortality rates occur among infants weighing 3,000 to 3,500 g (6.6 to 7.7 lb). For infants born weighing 2,500 g (5.5 lb) or less, the mortality rate rapidly increases with decreasing weight, and most of the infants weighing 1,000 g (2.2 lb) or less die. As compared with normal-birth-weight infants, those with low weight at birth are almost 40 times more likely to die in the neonatal period; for infants with very low

weight at birth the relative risk of neonatal death is almost 200 times greater." Infant mortality due to low birth weight is usually a direct cause stemming from other medical complications such as preterm birth, poor maternal nutritional status, lack of prenatal care, maternal sickness during pregnancy, and unhygienic home environments. Along with birth weight, period of gestation makes up the two most important predictors of an infant's chances of survival and their overall health.

Low birth weight may be the leading cause of infant deaths, and it is greatly preventable. Although it is preventable, the solutions may not be the easiest but effective programmers to help prevent low birth weight are a combination of health care, education, environment, mental modification and public policy, influencing a culture supporting lifestyle (MacDorman, 2009). Preterm birth is the leading cause of newborn deaths worldwide. Reasons for this include teenage pregnancy, increase in pregnant mothers over the age of thirty-five, increase in the use of in-vitro fertilization which increases the risk of multiple births, obesity and diabetes. Also, women who do not have access to health care are less likely to visit a doctor, therefore increasing their risk of delivering prematurely (McNeil, 2012)

According to National Community Health Practitioners Registration Board of Nigeria (NCHPRBN) (2018), Community health workers (CHWs) are frontline public health and clinical workers who have a close understanding of the community they serve. This trusting relationship enables them to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery. Community health workers also build individual and community capacity by increasing health knowledge and self-sufficiency through a range of activities such as outreach services, community education, informal counseling, social support and advocacy. Community health workers are dedicated individuals who are purposely trained to function along a continuum ranging from individual and community development to service delivery and promoting community empowerment and social justice. They often help link people to needed health care information and services.

The North East geopolitical zone being the area of this study is one of the administrative divisions in Nigeria known as the North Eastern State. It was created from the Northern region of Nigeria on the 27th of May 1967. Its capital was Maiduguri. On the 3rd of February 1976, the North Eastern state was divided into three States: Bauchi, Borno, Gongola. These three states were further divided into six States. On the 27th of August 1991, old Borno State was divided into the modern day Borno State and Yobe State. Also, on the same day, the old Gongola State was divided into Adamawa State and Taraba State. Former Bauchi State was divided into the present day Bauchi State and Gombe State in October 1996. Based on the specific purpose of this study, the research answered this questions: What are the perceived clinical constraints of ending preventable deaths of newborns among community health workers in North-east zone of Nigeria? On the basis of the structured research question, the hypothesis was formulated to guide the conduct of this study: Community health workers do not have significant perceived clinical constraints to ending preventable death of newborn in North east zone, Nigeria.

Methods and Materials

An ex-post facto (After the fact) research design was used in this study. It suggests that the information required for this study is already available with the respondents. Ex-post facto research design refers to a

systematic empirical inquiry in which the researcher does not have direct control of the independent variables because their manipulations have already occurred or they are inherently not manipulated (Asika, 2009). Therefore, this design was found suitable for this study

The population of this study comprised 12,897 community health workers in Government owned Primary Health Care Centers across the North east zone States of Nigeria (NCHPRBN, 2018). The total number of states in the zone is six (6) consisting of 114 LGAs in which Adamawa state has 21, Bauchi has 20, Borno has 27, Gombe has 11, Taraba has 17, Yobe has 17 LGAs respectively. The total number of community health workers in North east zone, Nigeria according to National Community Health Practitioners Registration Board (NCHPRBN) (2018). The following is the breakdown for each of the states in North-Central Zone, Nigeria: Bauchi state has a total of 2,502 Community Health Workers; Gombe state has 1,738 Community Health workers; Borno state has 2,208 Community health Workers; Yobe state has 1,041 Community Health Workers; Adamawa state has 3,002 Community Health Workers; while Taraba state has 2,406 Community health Workers. Therefore, the total number of Community Health Workers in North east zone is 12,897 (NCHPRBN, 2018).

The sample size for this study consists of four hundred and fifty (450) community health workers across eighteen (18) local government areas in three (3) selected States out of one hundred and fourteen (114) LGAs. (Gombe, Yobe and Adamawa States) from North east Zone, Nigeria. Denscombe, (2010) postulated that in a population of $\geq 10,000$ a sample size of three hundred and seventy (370) is enough to adequately conduct a research, with sample size confidence level of 95% and 5% marginal error. However, the researcher used four hundred and fifty (450) community health workers as respondents out of the entire population for effective generalization, using multistage sampling technique. Multistage sampling technique refers to sampling plans where the sampling is conducted in stages using smaller and smaller sampling units at each stage (Researchgate, 2015).

The instrument used for data collection is a researcher-developed questionnaire which is in a modified four points likert's scale. The questionnaire is divided in to five (5) sections. Section A contains five (5) items on demographic characteristics of the respondents. Section B contains ten (10) statements on perceived constraints (Clinical) of ending preventable deaths of newborns (pre term birth, sepsis, pneumonia and asphyxia among others) among community health worker in North east zone, Nigeria.

Therefore, mean score of responses was e accepted or said to be positive when it is 2.5 and above. While any mean score of response that goes less than 2.5 was not be accepted or was considered negative.

Results

The total numbers of 450 copies of questionnaire were administered to community health workers of North East Zone of Nigeria towards assessing clinical constraints to ending preventable deaths of newborn. But 434 copies were successfully completed and retrieved for the study amounting to 96.4% of the total copies of questionnaire administered. The data collected were statistically analyzed and presented here

Table 1: Mean scores of responses of the community health workers on clinical constraints to ending preventable deaths of newborns babies.

S/N/Item description	Mean	Std. Dev.
1. Low birth weight of newborn babies	3.0	0.81
2. Sudden infant death syndrome in newborn babies	2.9	0.85
3. The following infectious diseases contact can contribute to preventable deaths of newborn babies, pneumonia, tuberculosis, neonatal tetanus	3.1	0.87
4. Malnutrition in newborn babies	3.0	0.80
5. Diarrhoea in newborn babies as a cause of childhood mortality	3.1	0.72
6. Lack of adequate awareness on safe newborn handling of pregnant mothers during ANC session	3.0	0.78
7. Birth injuries of newborn babies	2.7	0.89
8. Self medications during pregnancy that predispose newborns to preventable deaths	2.9	0.84
9. Septic techniques in hospital deliveries for infections that trigger preventable newborn deaths	3.0	0.85
10. Presence of the following conditions that contribute to deaths of newborns: Intra-pregnancy trauma, pregnancy related infections, maternal malnutrition of newborn babies,	3.0	0.87
Aggregate mean	2.98	0.506

Among the clinical constraints to preventable death among newborn babies as reveals in Table 1 were low birth weights, Sudden infant death syndrome, infectious diseases like pneumonia, tuberculosis, neonatal tetanus among others. Apart from these, the health workers were of the view that Malnutrition, Diarrhoea and lack of adequate awareness on safe handling of pregnant mothers during ANC session along with Birth injuries were some of the constraints to ending preventable deaths of newborns among the community health workers in the zone. Others of equal magnitude were self-medications during pregnancy by prospective mothers, septic techniques in hospital deliveries for infections and intra-pregnancy trauma, pregnancy related infections and maternal malnutrition. The aggregate mean score of 2.98 for the clinical constraints in the table revealed that the community health workers were unanimous in their agreement that the listed items were clinical constraints to ending preventable deaths of newborns among the community health workers in the zone. The less strong item in the table is 2.7 and the strongest item is 3.1 respectively.

Hypothesis: Community health workers do not have significant perceived clinical constraints to ending preventable death of newborns in North east zone, Nigeria

Table 2: One sample t-test analysis on perceived clinical constraints to ending preventable death of newborns babies in North East Zone

Variables	N	Mean	Std. Dev.	Std. Error	t	Df	p-value
Clinical	434	2.98	0.506	0.024	19.634	433	0.000
Test mean	434	2.50	0.000	0.000			

(Critical value of $t=1.96$, $P < 0.05$, H_0 rejected)

The result in the table revealed that the perceptions of community health workers on the clinical constraints to ending preventable deaths of newborns in the zone was significant. The observed t-value for the clinical constraints was 19.634 compared with the critical value of 1.96 indicated at the bottom of the table. The p-value for the test was 0.000 ($P < 0.05$). Therefore, the null hypothesis that Community health workers do not have significant perceived clinical constraints to ending preventable death of newborn in North east zone, Nigeria is thus rejected.

Discussions

This study assessed the perceived constraints to ending preventable deaths of newborns as perceived by community health workers in North East Zone, Nigeria using the perceived clinical constraints to ending preventable deaths of newborns as the indices for the investigation. The solution to the research question was validated with null a hypothesis. The objective and research question assessed the perceived clinical constraints to ending preventable deaths of newborns from the perspective of community health workers in the study zone. The finding revealed among others that the clinical constraints included low birth weight, Sudden infant death syndrome, infectious diseases like pneumonia, tuberculosis, neonatal tetanus among others. Diarrhoea and lack of adequate awareness on safe handling of pregnant mothers during ANC session along with Birth injuries were some of the clinical constraints identified by the respondents.

The finding here agrees with the study on clinical causes of newborn deaths among paramedical school students in India by Larson and Aaron (2014) who stated that, a difficult delivery may lead to bruising, especially on the head and face, from pressure against the mother's pelvis or pressure caused by forceps or a vacuum device used in delivery, Bone fractures can occur during a difficult delivery. Fracture of the clavicle is the most common birth injury. Meconium is a sticky substance that usually makes up the child's first bowel movement. If the fetus is stressed before or during delivery, the meconium may be released and may mix with the amniotic fluid. If it gets into the child's airways or lungs, it can cause meconium aspiration syndrome. Other clinical constraints included self medications during pregnancy, Septic techniques in hospital deliveries for infections and intra-pregnancy trauma, pregnancy related infections and maternal malnutrition. The finding here also agrees with the findings of the study conducted in Nigeria on infant and child mortality among community medical doctors by Adeyele and Ofoegbu (2015) who highlighted that child deaths commonly result from several risk factors and preventable diseases such as Acute Respiratory Infections (ARIs), diarrhea, malaria and chronic malnutrition which contribute largely to disease morbidity and mortality among children.

Conclusion

From the finding of the perceived clinical constraints to ending preventable deaths of newborn as perceived by community health workers in North East Zone, the researcher concludes as follows: The identified clinical constraints to ending preventable deaths of newborns as perceived by community health workers in North East Zone, Nigeria are the constraints to face in ending preventable deaths of newborn.

Recommendations

Based on the conclusion the following recommendations are advanced:
There is a need for periodic training and retraining of community health workers to improve their skills in providing technical approaches towards ending preventable deaths of newborn.
There is a need for periodic implementation of strategic solutions to identified issues by Health Agencies of the state on the clinical constraints to ending preventable deaths of newborns in the zone.

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ASSESSMENT OF KNOWLEDGE OF HYPERTENSION PREVENTION AMONG ACADEMIC STAFF OF FEDERAL UNIVERSITIES IN THE NORTHERN STATES OF NIGERIA

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Abstract

This paper assessed the knowledge of hypertension prevention among academic staff of federal universities in the northern states of Nigeria. One research question and hypothesis was formulated for this study. Ex-post facto research design was used. The population of the study comprised of 20,215 academic staff of the twenty Federal Universities in the Northern Nigeria. The sample for this study comprised of 740 academic staff which was drawn from the population of 20,215 in the 20 Federal Universities of the Northern States of Nigeria. The instrument used for data collection was a researcher-developed close-ended questionnaire. Descriptive statistics of frequency distribution, percentages, mean, standard deviation and inferential statistics of one sample t-test was used. The results revealed that academic Staff of Federal Universities in Northern states of Nigeria are significantly knowledgeable about hypertension prevention. It was concluded that Knowledge of hypertension prevention exists among academic staff of federal universities in Northern states of Nigeria. It was recommended that Health educators should double effort in ensuring that knowledge and attitude of Universities academic staff and the general populace about hypertension prevention is sustained.

Keywords: Knowledge, Hypertension prevention, academic staff, federal universities

Introduction

Hypertension remains a major global public health challenge that has been identified as the leading risk factor for cardiovascular morbidity and mortality. In medical terms, hypertension is a blood pressure of 140/90 mmHg (millimetres of mercury) or more, based on at least two readings on separate occasions (Mlunde, 2017). The term is used to mean the same medical condition with High Blood Pressure (HBP). Distinction is often drawn between primary or essential and secondary hypertension (Mlunde, 2017).

According to Stanler (2014), hypertension is categorized into primary and secondary hypertension. Primary hypertension has an unknown cause and accounts for ninety per cent to ninety five per cent of all hypertension cases (Chris, 2010). This type of hypertension is strongly associated with lifestyle. Usually, the patients do not have many signs and symptoms but may experience frequent headache, tiredness, dizziness or nose bleeds. Although the cause is not known, obesity, smoking, alcohol, diet and heredity play a role in essential or primary hypertension. Secondary hypertension has a known cause and accounts for five per cent to ten per cent of all hypertension cases. Chris (2010) maintained that the most common cause of secondary hypertension is an abnormality in the arteries supplying blood to the kidneys. Other causes include airway obstruction during sleep, stress, diseases and tumors of the adrenal glands, lifestyle, spinal cord injury, hormone abnormalities (oral contraceptive estrogen replacement), thyroid disease, toxemia of pregnancy, renal problems such as vascular lesion of renal arteries, diabetic neuropathy, pains as well as anxiety and hypoglycemia. There are some factors which predispose adults to hypertension.

In Nigeria, hypertension is the commonest non-communicable disease with over 4.3 million Nigerians above the age of fifteen years classified as being hypertensive (Adeloye, Basquill, Aderemi, Thompson & Obi, 2015). Ogedegbe (2014), reported that Northern Nigeria like other sub regions in the country is undergoing a rapid epidemiological transition which has led to the last decade seeing a shift in the major causes of death from solely infectious diseases to a combination of communicable and non-communicable diseases (NCDs). The prevalence of hypertension in Nigeria may form a substantial proportion of the total burden in Africa because of the large population of the country currently estimated to be over 170 million (Adeloye, et al 2015). With an increasing adult population and changing lifestyle of Nigerians, the burden of hypertension may continue to increase as time unfolds (Kayima, Wanyenze, Katamba, Leontsini, Nuwaha, 2013).

Knowledge of hypertension is an important prerequisite for an individual to implement desirable behavioural practices towards its prevention. Boule (2013) stated that patients who are informed about their condition appear to recover earlier than those without knowledge. Slark, Khan, Bentley and Sharma (2014), stated that university lecturers have a poor understanding of Blood Pressure or hypertension in a United Kingdom general public population in London. They added that hypertensive participants in the survey had little knowledge of their own Blood Pressure and were unable to estimate it within acceptable levels. Increasing awareness of hypertension is the main focus of primary prevention of cardiovascular diseases. Akinkugbe (2010), reported that individuals' knowledge on hypertension and its prevention as well as physician counselling on a healthy lifestyle and self-care have an independent effect on compliance with the recommended lifestyle behaviours. Meanwhile, factors associated with poor control of hypertension are modifiable through tailored, culturally appropriate patient education and treatment strategies (Dennison, Peer, Steyn, Levitt & Hill, 2017). Lack of such knowledge will lead to aggravated

health problems. Adults should therefore, possess adequate knowledge of risk factors of hypertension in order to prevent the disease.

It is expected that academic staff of universities should engage in healthy lifestyle practices such as regular exercise, maintaining weight at 15 per cent or less of desirable weight, management of stress, moderation of alcohol consumption, avoid tobacco smoking, increase intake of fruits and vegetables, increase intake of low-fat dairy products and reduction of dietary sodium to prevent hypertension and improve optimum wellbeing. Adults should have basic knowledge of these healthy lifestyle behaviours while growing up through health education to be able to prevent cardiovascular diseases such as hypertension.

Regrettably, the researcher is of the opinion that most academic staff of federal universities due to ignorance of risk factors and preventive measures of hypertension engage in unhealthy lifestyles such as consumption of alcohol, sedentary lifestyle, excess sodium intake, tobacco and cigarette smoking, obesity, reduced intake of fruits and vegetables, stress and consumption of foods high in cholesterol. These unhealthy lifestyle practices could increase the risks of hypertension which culminates into high cases of deaths that cannot be far away from lack of knowledge of predisposing factors such as age, stress, obesity and others and a perceived low level of knowledge, poor attitude towards early reporting of signs and symptoms and poor practice of preventive measures of hypertension. Estimated that about one billion adults had hypertension in the year 2017, the number is expected to rise to 2.5 billion in the year 2025 (WHO, 2017). In Nigeria, hypertension is one of the most common non-communicable diseases with more than 11% of the adult population living with the illness (Kasuma, 2017). In some universities in the Northern states of Nigeria, many academic staff could have lost their lives to hypertension perhaps due to lack of knowledge, poor attitude and bad practices of prevention.

Anowie and Darkwa (2015) reported that high prevalence of hypertension in Ghana with relatively low levels of awareness, drug treatment and blood pressure control. Prevalence of hypertension has been increasing in Ghana from 1977 when the urban and rural prevalence were reported to be 11.3% and 4.5% respectively (Gaziano, Bitton, Anand & Weinstein, 2012). Addo, Smeeth and Leon (2017) reported that knowledge on the causes of the condition was not left out as to whether or not obesity was a cause of hypertension; a significant percentage (45.8%) got it wrong as they responded in the negative. However, the majority had it correct. Similarly, 295 (73.8%) knew that stress could lead to hypertension. About 73% of the participants did not know that lack of physical activity could increase one's risk of acquiring hypertension as well as drinking too much alcohol (67.8%) (Anowie et al.2015).

In addition, only few of the participants (27.5%) knew that cardiovascular diseases could occur as a result of this condition or hypertension for signs and symptoms of hypertension, it was observed that majority of the participants (n=348; 82.1%) mentioned that the condition had no signs and symptoms, while the remaining (n=71; 17.9%) correctly pointed out that hypertension had several signs and symptoms. Some of the signs and symptoms identified included headache and dizziness, fainting and stroke. The main signs and symptoms of the condition specifically mentioned by the participants were headaches or dizziness and stroke while minimal knowledge on the consequences of untreated hypertension was shown (Anowie & Darkwa, 2015).

Purpose of the Study

knowledge of hypertension prevention among academic staff of Federal Universities in Northern states of Nigeria

Research Questions

What is the knowledge of hypertension prevention among academic staff of Federal Universities in Northern states of Nigeria?

Hypothesis

Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention.

Methodology

Ex-post facto research design was used. The population of the study comprised of 20,215 academic staff of the twenty Federal Universities in the Northern Nigeria. All the twenty Federal Universities are; Ahmadu Bello University, Zaria (2,731), Bayero University Kano (1,386), University of Ilorin (1,440), University of Jos (1,083), University of Agriculture Makurdi (1,142), University of Maiduguri (1,725), Usmanu Danfodio University Sokoto (786), Federal University of Technology, Minna (703), University of Abuja (1,129), Abubakar Tafawa Belewa, Bauchi (1,129), Federal University, Lokoja (740), Federal University, Lafia (630), Federal University Of Technology, Yola (795), Federal University, Birnin Kebbi (769), Federal University, Gashua (823), Federal University, Gusau (791), Federal University, Dutsin-Ma (801), Federal University, Dutse (792), Federal University, Wukari (692) and Federal University, Kashere (587).

The sample for this study comprised of 740 academic staff which was drawn from the population of 20,215 in the 20 Federal Universities of the Northern States of Nigeria. Research Advisor (2006) stressed that for a population of more than 20,215, the sample size for the study should be 370 at 0.05 level, 5% margin of error and 95% confidence interval. Multi-stage sampling technique involves more than two sampling techniques which comprises of Stratified sampling technique, Simple random sampling technique and proportionate sampling technique.

The instrument used for data collection was a researcher-developed close-ended questionnaire titled "Assessment of knowledge of hypertension prevention among academic Staff of Federal Universities in Northern states of Nigeria". The questionnaire consist of four sections. Section A consists of four (4) items on demographic characteristics of the respondents. Section B consists of ten (10) items on knowledge of hypertension prevention among academic staff in Northern states of Nigeria.

Descriptive statistics of frequency distribution, percentages, mean and standard deviation was used to describe the demographic information of the respondents and to answer the research questions. Inferential statistics of one sample t-test was used to test the null hypotheses on knowledge of hypertension management among academic staff of Federal Universities in the Northern states of Nigeria.

Results

Research Question 1: What is the knowledge of hypertension prevention among academic staff of Federal Universities in Northern states of Nigeria?

Table 1: Mean Scores of Responses on knowledge of hypertension prevention among academic staff of Federal Universities in Northern states of Nigeria

S/NO	STATEMENT	MEAN	SD
1	I know that job at workplace free from stress predispose me to hypertension	2.80	1.01
2	I am aware that is not healthy to smoking tobacco as it increase the risk of hypertension	2.55	1.05
3	Tobacco smoking increases blood pressure	3.14	0.81
4	I know that hypertension can be controlled through regular blood pressure checks	3.34	0.84
5	The age of an individual can predispose to hypertension	3.02	0.95
6	Early reporting of signs and symptoms can reduce the severity of the disease	2.98	1.07
7	Foods high in fat/sodium diet substance can cause hypertension	3.39	0.81
8	Engaging in exercises regularly can lower blood pressure	2.51	1.18
9	I am aware that reduced intake of fruits and vegetable can increase blood pressure	3.00	1.01
10	I know that obesity can increase the risk of hypertension	3.09	0.95
	Aggregate mean score	2.98	0.97

Table 1 shows that the respondents agreed that they are knowledgeable about hypertension prevention as all of the mean scores of responses were above 2.50. The most desired knowledge about hypertension has to do with preventive method which was influenced by the knowledge of the respondents as reflected in items 1, 4, 5, 6, 8 and 10 in which they are aware by variable free from stress, controlled regular blood pressure, predispose to hypertension, reporting of signs and symptoms, regular exercise, and risk of hypertension respectively. However, the knowledge about hypertension has made the academic staff of Federal Universities in Northern states of Nigeria to highly prevent hypertension against substance intake. This is reflected in items 2, 3, 6, and 9 in which smoking tobacco increase the risk of hypertension, tobacco smoking increases blood pressure, foods high in fat/sodium cause hypertension and reduced intake of fruits and vegetable can increase blood pressure respectively. The aggregate mean score of 2.98 and SD of 0.97 indicates that academic staff of federal universities in Northern states of Nigeria are knowledgeable of hypertension prevention.

Hypothesis 1: Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention.

Table 2: One sample t test on Knowledge of academic staff of federal universities in Northern states of Nigeria about hypertension prevention.

Variable	Mean	Std.	Df	t-value	P-value.
Knowledge	2.982	0.967	9	32.123	0.00

$t(9) = 1.833$. $P < 0.05$

A careful observation of Table 2 revealed that the respondents were knowledgeable about hypertension prevention. This is because the one-sample t-test calculated value is 32.123 greater than the

t-critical is 1.833 at degree of freedom 9 with probability value 0.00 is less than 0.05 level of significance. Thus, this result did not support the sub-hypothesis (null) which states that “Academic Staff of Federal Universities in Northern states of Nigeria are not significantly knowledgeable about hypertension prevention”. The hypothesis is therefore rejected.

Discussion

The primary purpose of this study was to assess the knowledge, attitude and practice of hypertension prevention among academic staff of Federal Universities in the Northern states of Nigeria. To achieve this purpose, it became relevant to first assess the knowledge of hypertension prevention, then attitude towards hypertension prevention and practices of hypertension prevention among academic staff of Federal Universities in the Northern states of Nigeria.

The findings of this study revealed academic staff of federal universities in Northern states of Nigeria are knowledgeable about hypertension prevention with a p-value of 0.00. The finding of this study agree with Anowie and Darkwa (2015), who found that most academic staff in university of Lagos knew that cardiovascular diseases could occur as a result of excess work load in office, it was observed that majority of the participants mentioned that the condition had no signs and symptoms, while the remaining correctly pointed out that hypertension had several signs and symptoms. Some of the signs and symptoms identified included headache and dizziness, fainting and stroke. The main signs and symptoms of the condition specifically mentioned by the participants were headaches or dizziness and stroke while minimal knowledge on the consequences of untreated hypertension was shown (Anowie et al. 2015). Akinkugbe (2010), reported that individuals’ knowledge on hypertension and its prevention as well as physician counselling on a healthy lifestyle and self-care have an independent effect on compliance with the recommended lifestyle behaviours.

Conclusion Based on the finding of the study, it was concluded that academic staff of federal universities in Northern states of Nigeria have knowledge of hypertension prevention.

Recommendations

School authorities, school health personnel and health educators should double effort in ensuring that knowledge of Universities academic staff and the general populace about hypertension prevention is sustained.

Activities that can as well improve people’s practice such as health intervention programmes (in essence; video play, radio jingles and print media intervention) should be made available by Ministry of Health through health education for the citizens (federal universities academic staff) so as to have improved attitude towards hypertension prevention

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INFLUENCE OF MASS MEDIA IN SOLVING NUTRITIONAL PROBLEM AMONG JUNIOR SECONDARY SCHOOL STUDENTS IN ILORIN SOUTH LOCAL GOVERNMENT AREA, KWARA STATE

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Abstract

The study was carried out to examine the influence of mass media in solving nutritional problem among Junior Secondary School Students in Ilorin South Local Government Area of Kwara State. The study aimed to find out whether mass media has played any role in solving nutritional problem. Descriptive survey research design was adopted for the study and two research questions and hypotheses were generated and tested. Two hundred junior secondary school students were randomly selected through the simple random sampling technique. The main research instrument used was structured closed ended questionnaire, the data collected were analyzed using Chi-Square (X^2) analysis was adopted to test the hypothesis at 0.05 alpha level. The findings showed that all the hypotheses tested were all rejected. Based on the findings it was concluded that mass media plays a major role in solving nutritional problem among junior secondary school students in Ilorin south local government area of Kwara State. It was recommended that food and entertainment industries should jointly adopt meaningful, uniform nutrition standards for marketing food and beverages to children, as well as a uniform standard for what constitute marketing to children.

Keywords: Mass media, Nutritional problems, secondary school students

Introduction

Mass media refers to channels of communication that involves transmitting information in some way, shape or form to large numbers of people. (Crosbie, 2002). A means of public communication reaching a large audience. Mass media is a deceptively simple term encompassing array institutions and individuals who differ in purpose, scope, method, and cultural context. It includes all forms of information communicated to large groups of people (Akin, 2005).

Onyehakpo (2003) opined that man must eat to live from the creation of man in the Garden of Eden; nature provided all he required for his nutritional wellbeing. Man devotes much time, thoughts and efforts to food, its production, processing, distribution and serving in an attempt to get what he wants from them because of its natural resources for man's retainance and sustenance. With the development of food science and technology, knowledge of nutrition began to grow and people gradually became aware of what babies require for growth, good health and maintenance. This is made possible since people have very vague knowledge about nutrient, what it means, its significance and applications, until development came. Although man was able to have some ideas on babies nutrition. This paved way for different substances known as nutrients derived from food were then analyzed and studied through the scientific development.

According to World Health Organization (2016), nutrition is the intake of food, considered in relation to the body dietary need. Good nutrition is an adequate well balanced diet combined with regular physical activity which is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. Nutrition is associated with taking in food that the body needs to remain healthy. Basic nutrient includes water, minerals, carbohydrate, fat and protein. It is also the science of food and determining what nutrient is in different product. This science will also determine how your body ingest, digest, absorbs, metabolizes, transport, stores and excrete different food products to determine what overall effect this nutrients have on the body.

Adetayo (2004) opined that nutrition is a result of the food supplied to the body and how the body uses the food supplied. All living things feed and when food is consumed, the various components called food nutrients perform their functions in relation to their needs in the consumer's body. She identified the following function; building up and repairing tissues, supply heat and energy, protecting the body from diseases, helping the elimination of waste product from the system.

Nutritional deficiency can be very significant to the overall health of children because growth and development can be seriously hindered by shortages in essential vitamins or nutrient (Melinda, 2010). According to Awake (2002) malnutrition is triggered by a combination two factors which were insufficient intake of proteins, calories, vitamins and minerals and frequent infection; for example such illnesses like diarrhea, measles, malaria and respiratory diseases tax the body and cause loss of nutrient, they reduce appetite and food intake by children, thereby contributing to malnutrition.

It is important to establish the relationship between the mass media and health of children. Many would agree that the media are the biggest educators in today's society, by age 18 a young person would have seen a lot of commercials and spend more time being entertained by the media than any other activity except sleeping, proper nutrition is especially important for adolescent because of their

accelerated body growth. In addition, their early dietary decision can have lifelong health implications e.g. obesity, poor nutrition, inadequate female reproductive development. Unfortunately, adolescent are susceptible to poor nutritional habit. They often eat with peers rather than family, because they are growing physically they snack a lot but the snacks are usually high in fat and calories, they are very busy and argue they do not have the time to eat properly (Davies 1993).

Mass media campaigns are used to expose high proportions of a population to health promotion messages, using the media as an educational tool. Mass media campaigns are favorable because they are capable of communicating information, increasing awareness, and affecting a large number of people. Mass media interventions can produce positive health changes once grand scale by enforcing positive health behaviors among individuals (Wakefield, 2010). Social media campaign takes a variety of forms in their effort to communicate health messages; these methods include print media, television and radio broadcast. In addition to digital and print media, there are number of other creative avenues for disseminating health information. Life theater dramas and puppetry, for instance, are gaining popularity as ways to deliver health care messages to specific target audiences. Each medium offers advantages and draw backs that must be considered in the context of program goals for improving health education (Austin, 1998).

Media organizations often use radio to broadcast health information because it is capable of reaching many people while maintaining a strong impact. Certain media interventions have been determined to be particularly cost effective, considering the benefit that are associated with expenditure. Radio disseminated health messages have been found to be more effective than television, as radio can reach people in their homes, cars, or at work. Brief educational radio segment can be inserted between programs during prime time hours, when the maximal number of people are tuned in. One American study demonstrated that people who listen to radio have a surprisingly accurate ability to recall details of broadcast from month earlier; in this way, the study findings support the potential of radios to disseminate health messages that significantly affect listeners (Wakefield, 2010).

The use of radio to disseminate health education messages is particularly advantageous because of the wide range of people it can reach. In developing countries, many rural villages do not have access to electricity or television, but battery operated radios are common place. Consequently its ability to reach people in a diverse range of settings has made radio a prime medium on educational initiatives and various health topics has been addressed through radio programming throughout the developing world (Nwaerandu, 2010).

Most food related programs require substantial financial support, research demonstrate that to include nutrition or health related messages in entertainment programs on mass media could be cost effective and promising (Valente, 2010). A study shown that food advertisements watched by children are about fruits and vegetables (Powell, 2010).

Although nutritional problems are harmful throughout a child's life, its effect is more harmful in children, in which case any problem at this stage if not properly cared for can affect the later life of the child and the child is exposed to many diseases such as kwashiorkor, marasmus, whooping cough, measles, rickets, polio etc. (Adams, 2006).

A lot of values are being placed on the role of mass media in solving nutritional problems especially among children. One point is clear, that food is the main source of nutrient which contributes to our physical, mental and emotional health.

The pervasiveness of the mass media creates a seemingly endless flow of information. Contained in the flow are various forms of health information. Consumers of the media are at the mercy of the respective media outlets to provide them with the most current and accurate information possible. Although health community recognizes the power of mass media to disseminate information about health risks and prevention measures, unfortunately, the purposes of the two entities are not the same. As a result, the public is not always informed of possible health risks or preventive measures; not all health messages are easily understood, and some messages contain misleading or false information. This poses a problem for society. Individuals especially students, are viable to distinguish between genuine and questionable message sent by the media (signorielli, 1993).

It is common nowadays seeing advertisement on television on different types of food products without taking the time to investigate how the food is processed and produced. This is caused as a result of the producers urge to sell their goods at all cost, the implication of the information passed through the media on food product may cause a threat to the nutritional status of human being because food product that lack nutrients may be given a good advertisement and this will lure the consumers to purchase the product.

Therefore, the focus of this study is to examine the implication of mass media in solving nutritional problems among junior secondary school students in Ilorin South Local Government Area, Kwara State.

The following questions were formulated for the study;

Will Mass media influence nutritional problem among secondary school student in Ilorin South local government area?

Will Mass media influence nutritional health of secondary school student in Ilorin South local government area?

The following hypotheses were postulated

1. Mass media will no significantly influence nutritional problems among secondary school students in Ilorin south local government area.
2. Mass media will not significantly influence nutritional health of secondary school students in Ilorin South local government area.

Method and Material

The study is embarked upon to elucidate the influence of mass media in solving nutritional problem among junior secondary school in Ilorin South Local Government Area in Kwara State. A descriptive research survey method was used for this study, and for interpreting the data collected, the Chi-Square statistics set at 0.05 alpha level was used to test the hypotheses under the study. The population for the study was all students of Junior Secondary Schools in Ilorin South Local Government Area of Kwara State .The sample for this study are schools within this local government area and three

schools were selected randomly in Ilorin South Local Government Area. The schools were Government Day Junior Secondary School Tanke, Ifedamola High School Tanke, and St Anthony Junior Secondary School Ilorin.

The instrument for this study is a structured close-ended questionnaire. The instrument was validated by both face and content validity. Two hundreds questionnaires were administered to the student in the schools selected for the study. The structured questionnaire was validated by two experts in the department of health promotion and environmental health education to ascertain the validity of instrument to remove the irrelevant ones and retain the relevant ones. The reliability of the instrument was done by administering twenty questionnaires to twenty students that are not part of the study group.

Results

Hypothesis One

Mass media will not significantly influence nutritional problems among secondary school students of Ilorin South Local Government Area of Kwara State.

Items	SA	A	D	SD	Row Total	DFCAL	tabX ²	DEC
Adolescent some times overheat which leads to obesity	75	111	11	3	200			
Adolescent cannot distin- guish between healthy and unhealthy food programs	71	84	35	10	200	9	65.27	16.92 Ho Rejected
Adolescent tends to practice What they see and watch on Mass media	52	92	46	10	200			
Adolescent listen and watch Programs that are unhealthy Which leads to addiction and Influence their eating habit	60	129	9	2	200			
P ≤ 0.05	258	416	101	25	800			

This indicated that the calculated value of 65.27 is greater than the critical value of 16.92. In this case, the null hypotheses mass media will not significantly influence nutritional problems among

adolescent was rejected, this means that mass media will significantly influence nutritional problems among secondary school students in Ilorin South Local Government Area Kwara State.

Hypothesis Two

Items	SA	A	D	SD	Row Total	DF	CAL	tabX ²	DEC
Mass media can help adolescent in dealing with nutritional problems	32	76	80	12	200				
Mass media can help adolescent distinguish between advertisement for healthy and unhealthy foods	46	83	41	30	200				
Nutritional education program can promote positive decision and attitude towards nutritional problem	47	120	30	3	200				
Mass media health topics programs will be an effective tool against nutritional problem	52	118	28	2	200				
P≤0.05	177	397	179	47	800	9	104.31	16.92	Ho Rejected

The table indicated a calculated X² value of 104.31 which is greater than the critical value of 16.92 at 0.05 alpha level of significant with the degree of freedom (DF) of 9. Therefore mass media will significantly influence nutritional health of secondary school student in Ilorin South local Government Area of Kwara State.

Discussion of Findings

For meaningful clarification of the findings the data analyzed revealed the influence of mass media in solving nutritional problem among secondary school students in Ilorin South Local Government area of Kwara State. In item one, 111 respondents agreed, equivalent to (104%) agreed that adolescents

sometimes over eat which lead to obesity, while 11% (25.2%) disagreed that overeating leads to obesity. Item two, 84 agreed that adolescent cannot distinguish between healthy and unhealthy food programs. While 35 respondents strongly disagreed that they can distinguish. Item three, 92 respondents agreed that adolescents tend to practice what they see and watch on mass media while disagreed. Item four, 129 respondents disagreed.

This finding is supported by Kaiser (2004) that adolescents today spend as much as four and half hours each day watching television and are influenced by the programming and advertising they see.

Valente (2010) also opined that the feeling of inadequacy and unrealistic hope to look the same as the models seen in these advertisements can lead to the development of eating disorder such as anorexia and bulimia in both males and females.

Hypothesis two

In Item five, 76 respondents agreed that mass media can help adolescents in dealing with nutritional problems while 80 respondents disagreed. Item six, 83 respondents agreed that mass media can help adolescents distinguish between advertisement for healthy and unhealthy foods while 41 respondents disagreed. Item seven, 120 respondents agreed that nutritional education program can promote positive decision and attitude towards nutritional problems while 30 respondents disagreed. Item eight, 118 respondents agreed that mass media health topics program will be an effective tool in solving nutritional problems while 28 respondents disagreed.

Wakefield (2010) opined that interventions can produce positive health changes one grand scale by enforcing positive health behaviors among individual. Also (Austin, 1998) stated that each medium offers advantages and draw backs that must be considered in the context of program goals for improving health education. Hence, mass media can influence nutritional health of secondary school students in Ilorin South local government area of Kwara State.

Conclusions

Health is of paramount importance to the public, it stands as an essential factor in human welfare, its services should keep pace with rapid increase in human population and demand. If the health services lags behind or such health services provided is not embraced by all, the community will suffer.

The usual cause of nutritional deficiency is a poor diet that lacks essential nutrients. The body stores nutrients, so a deficiency is usually caught after its been without it for some time. From the findings, it was revealed that mass media contribute immensely to the overwhelming nutritional problems in children other minor factors are; insufficient food intake in children, increased birth rate economy of an average home, poverty, custom and taboo, etc.

Media acts as a platform for common people to exchange information, knowledge, and awake to ask health related question in their daily life. In order to have a well-developed child free from diseases a good nutritional status must be ensured through the mass media education programs.

Recommendations

All media and entertainment companies should limit the licensing of their popular characters to food and beverages that are healthy and consistent with nutrition standard.

The food and entertainment industries should jointly adopt meaningful, uniform nutrition standards for marketing food and beverages to children, as well as a uniform standard for what constitute marketing to children.

Industries should provide technology to help consumers distinguish between advertisement for healthy and unhealthy foods and to limit their children exposure to unhealthy food advertisements.

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CHALLENGES OF SOLID WASTE MANAGEMENT IN KWARA STATE, NIGERIA

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Abstract

Solid waste is regarded as unwanted material produced by individuals from various sources including homes, offices, markets among others which the producer has no use for it and wishes to dispose such material. The management of solid waste is an important aspect of our lives which when not properly handled can lead to various health effects and can also lead to a public nuisance or deter the aesthetic of the environment. The study specifically tried to find out what the problems pertaining to the transportation and disposal of solid wastes are in Kwara State. A descriptive research design of the survey type was adopted for the study. Four hundred social workers were systematically selected for this study. A researcher designed questionnaire was used for data collected and was tested for validity and reliability. Frequency counts, percentages and bar charts were used in the presentation of the findings. The study revealed that waste management facilities and equipments that are currently used in managing solid waste are insufficient (96.3%). It was also revealed that dumpsites are poorly managed (94.3%). The study concluded that challenges of solid waste management in Kwara State includes insufficient social workers attached to trucks for collection of waste; waste collection trucks are inadequate and most of the ones available are below standard and faulty most of the time; dumpsites are poorly coordinated and some truck drivers are contributing to the problem on ground. It was therefore recommended that more social workers should be employed; the Government should endeavour to purchase more standard waste collection trucks, dumpsites should be properly monitored and coordinated and truck drivers should be educated and properly directed in the disposal of solid waste at dumpsites.

Keywords: solid waste, challenges, waste managers, facilities, dumpsites

Introduction

Waste generation is as old as humanity itself, and in one way or the other, the everyday activities of human beings create waste. Different sources, including domestic, industrial and hospital may produce waste. Due to the large area of available land, relatively low population size and low level of industrialization, solid waste disposal in the past was not a big problem. Waste is characterized as organic and inorganic materials generated by households, commercial and industrial facilities that are of no economic benefit to the owner (Ezebilo & Animasaun, 2011). This was corroborated by Chukwuemeka, Ugwu and Igbwegbe (2012) who stated that wastes are useless, unwanted and discarded materials. For an individual to be willing to get rid of something such a thing must have no value or he/she no longer wants to own the item. As the population began to increase, humans explored and developed more areas of land to meet their basic needs. The increase in population and the rise in industrialization, in turn, increased the amount of waste generated which has to be disposed off through whatever means necessary. The more the population increases, the more items are consumed and packaging becomes an essential part of the waste stream, whether paper or plastic, commonly referred to as garbage or trash (Vaughn, 2008). Globally, 7-9 billion tons of wastes are produced every year (Wilson & Velis, 2015). Municipal Solid Waste (MSW) is a particular household waste category which, depending on the reporting standard, may include commercial and industrial waste (Wilson & Velis, 2015). Of the total waste generated in 2016, MSW accounted for 2 billion tonnes. However, 70 percent of the world's waste today ends up in dumps and landfills (Kaza, Yao, Bhada-Tata & Van Woerden, 2018). As the most basic solid waste management system, dumps are large-scale storage of waste without any technological management, making them a major source of waste contamination as well. Landfills can require various degrees of technical measures, including impermeable layers and covers, to reduce and recover the quantity of leachate and gases emitted (Manfredi, Tonini, Christensen, & Scharff, 2009). Most advanced countries such as Germany have accomplished much in the way of developing sophisticated management techniques such as Enhanced Resolution and mobile sorting that prove useful in avoiding waste as well as with the creation of a better chance for recycling and re-use. While adequate laws are required to run a waste-free country, by defining organic content requirements, Germany has prohibited MSW land filling.

In developing countries like Nigeria, where solid waste management is a major concern, this issue is even more pronounced. Adeyemi et al. (2001) reported that in most developing countries, solid waste is indeed a major problem. Adeyemi et al. (2001) added that one of the most untenable concerns facing administrators and environmental organizations is waste management. Ogwueleka (2009) stated that the management of solid waste is by far one of the country's biggest problems facing environmental agencies. Adefemi and Awokunmi (2009) identified the breakdown of law and order in relation to waste management as a consequence of management challenges. According to Ohakwe et al. (2011), recent research shows that over 140 million people reside in Nigeria's large population. As for industrialization and the construction of homes and buildings, the lead author's quantification that Nigeria produces and discards over 1 million tons of waste per year lends support to that assertion. These waste products that are thrown away end up in open ditches or buried at poorly-lined (authorized or unauthorized) sites. The disposal at open dumps of these waste materials may lead to the release into the aquifer of a mixture of toxic chemicals. Such hazardous materials may also be washed into surface bodies of water used for domestic purposes by storm runoff. Emissions of hazardous gaseous materials arise from the unregulated open burning of waste materials. The potential threats to human health and the atmosphere are posed by

released particulate matter and the resulting ash and cinder. Apart from posing risks to the atmosphere and human health, this approach to waste management constitute pollution, smoke, insect and pest infestation and disruption to the landscape and the aesthetics of the surrounding area (Ohakwe et al., 2011).

Domestic wastes consist of rotten food and garbage which produces foul stench in the environment and on some occasions, domestic waste is not just about food materials alone but some residents dump feaces alongside the household waste. When these wastes are not collected early after a while, it begins to decompose and most likely attracts and breeds vectors of diseases such as rats and mosquitoes that are responsible for diseases such as Lassa fever and malaria respectively. The burden of waste management is left to waste managers (social workers) who collect waste from various points of collection and dispose off such waste in designated areas. When waste is not collected in time at various points, they are disposed continually at the spot in heaps and the onus of packing such waste is shifted onto social workers who now have to pack and collect the waste from such points. This is done at a period when the odour being emitted from such points are becoming unbearable.

Solid Waste Management (SWM) involves six key components that address the proper methods in which solid waste should be managed. These components include generation, storage, collection, transportation, segregation and disposal of solid waste. Challenges could arise at any given point of these components. Timely collection of waste is a serious challenge that social workers face and which may be due to several reasons. When this is the case, the behaviour of the residents has a role in further worsening the situation. Some people carry their waste to designated points and dispose their waste on the ground when the dumpster in such location is filled to the brim. A commendable attitude would have been to pack the waste in nylon and tie it properly so that the waste does not litter the surrounding. In most cases, people are aware of the proper way to dump their waste but the fact that the disposal point is not their personal space, they tend to display a nonchalant attitude towards their way of disposing the waste. Yukalang et. al. (2017) asserted that lack of staff capacity and staff number is a barrier to municipal solid waste management. In most developing countries such as Nigeria, staff capacity when it comes to the management of solid waste is a problem. The numbers of social workers attached to solid waste collection trucks in some cases are insufficient to handle the amount of waste that is generated. In the opinion of Agunwamba et al. (2014), the challenge to solid waste management has to do with the distance to the approved dumpsites. In small cities where final disposal sites are nearby, the hauling of waste is not a serious problem but when the haul distance is far, this poses a challenge to solid waste management. Some truck drivers who after driving a long distance dispose their waste as they deem fit on getting to the site since most of these sites are not properly monitored. In some cases, some drivers overload their trucks in an attempt to reduce the number of trips to the disposal site (BioEnergy Consult, 2020).

Abdel-Shafy and Mansour (2018) opined that the supply of waste management facilities and equipments have a great impact on the success or failure of the programme. In Nigeria, most solid waste management agencies are facing the challenges relating management facilities and equipments. According to Yukalang et al. (2017), timely disposal of waste is affected by poor condition of waste collection trucks. Most collection trucks being used for the collection of waste in Nigeria are substandard. In most cases, vehicles that are used for the collection and transportation of waste are mostly tipping trucks meant for carrying sand or open non-tipping trucks that are not originally meant for waste collection. Igbinomwanhia, (2011) and Zhu et al. (2008) affirmed that irregular transport of waste in

faulty vehicles significantly affects the management of solid waste in developing countries. Most of the so called converted vehicles for the collection and transportation of solid waste which breaks down frequently reduces the timely collection rate of solid waste management.

Ferronato (2019) opined that in an open dump site, the lack of compaction of waste, outright neglect of technical and hygienic considerations are some of the challenges facing solid waste management. The author further affirmed that landfills are not properly monitored, coordinated and managed and it poses a significant challenge to proper solid waste management and public health. Nwankwoala and Offor (2018) affirmed that most dumpsites are poorly cited, some are full and others are poorly coordinated. Ogundele (2018); Ferronato (2019); McAllister (2015) affirmed that the careful situation of dumpsites is germane in the management of solid waste. It becomes a challenge when dumpsites are situated outskirts of the city while considering community health and at the same time, the site allocated for disposal is also home to a huge number of people. Kyere (2019) opined that a few of the problems associated with municipal solid waste management include proximity to final disposal site at a landfill, improper landfill operation, health deterioration, accidents, floods occurrences and pollution of surface water. Yadav and Kumar (2018) asserted that the various hazards associated with the waste dumpsites such as surface water contamination, bad smell or odour, release of greenhouse gases, accidental hazard caused by fire and so on are the challenges affecting the management of solid waste.

The appropriate procedures in the management of solid wastes start from the point of generation. Solid wastes are meant to be sorted from the point of generation into different containers or bins which clearly shows the categories of waste. After that, wastes are collected by agencies in charge of its management, transported to facilities that take care of segregation or recycling before those that are deemed useless are finally transported to landfills where they are properly compacted and treated. In developed countries, waste generation from source has been strictly minimized to reduce the amount of solid wastes generated from each household. Efficient management of solid waste could be achieved when adequate equipments and facilities such as standard waste collection and evacuation vehicles are in place; strategic public collection points are in place; waste are collected routinely among many others. It is a fact that successive governments in Kwara State have done one thing or the other concerning the proper management of solid waste but there seems to be no significant difference yet. Solid waste when not properly managed and evacuated in time breeds mosquitoes, rats and other vermin, emit foul odour as a result of decaying organic materials, contaminate ground waste, causes typhoid and many other diseases.

Managing solid waste has become a major concern in Nigeria. It is common view today in the nation to see piles of waste dumps in almost every corner of the communities. Many homes, markets, drainages, roads, streets and undeveloped plots of land have been converted into waste dumps. Despite all the efforts of the Government of Kwara State to control and manage waste, there appears to be a losing battle against the harmful consequences of unguided waste and the achievement of a clean and healthy environment in the State. The researcher has observed that heaps of waste lying on road verges, roadsides and designated waste collection points is a common sight in Ilorin. With the efforts of the Government ranging from the declaration of every last Saturdays of the month for environmental sanitation to the enactment of sanitation laws (Local and National) to guide waste disposal and the creation of the Kwara State Environment Protection Agency (KWEPA) which oversees the activities of waste management, one will think that the problems of waste disposal and management should be solved but that is not the case. The Kwara State Environmental Protection Agency, set up by law, appears to be ineffective in controlling

and managing the volume of waste generated in the State, and the Agency faces problems ranging from the behavior of residents in relation to waste disposal to the peculiarity of Nigeria's attitude; "government-does-everything". There is no doubt that there are challenges to the management of solid waste. It is against the background that the researcher has embarked on a study to identify the challenges of solid waste management in Kwara State. On this bases research Questions What are the challenges inherent in the transportation stage of SWM in Kwara State? And What are the challenges inherent in the disposal stage of SWM in Kwara State? Where fomulated.

Methods and Material

The descriptive research design of the survey type was adopted for this study. The population of the study comprised of all the social workers (2,000) under the Kwara State Environmental Protection Agency (KWEPA). Four hundred samples were selected and used for the study. According to Krejcie and Morgan sample size selection table, for a population of two thousand (2000) respondents, a sample of three hundred and twenty two (322) respondents is adequate to represent the population. Based on this assertion, the researcher decided to round up the figures to the nearest hundred thereby arriving at a sample size of four hundred (400) respondents. A systematic sampling technique was adopted in selecting the respondents for the study using an equal interval. This was done by requesting for the register containing the names of the waste managers and randomly selecting a name to start with and subsequently selecting every 5th name after the first name that was randomly selected until the desired number of sample was selected. The selection of respondents was done on the day of the monthly general meeting at the KWEPA office. A researcher designed questionnaire which was validated by three experts in the field of health education was used for data collection. The instrument was tested for reliability by administering it to twenty social workers and subjected to Cronbach Alpha statistics which yielded a coefficient of 0.78r. The instrument was administered to the respondents by the researchers and retrieved immediately. Descriptive statistics of frequency counts and percentages were used to analyze the data collected from the study. Bar charts were used to present the results and an observation schedule was used to ascertain the waste management equipment available for the management of solid waste.

Findings

Research question 1: What are the challenges inherent in the transportation stage of SWM in Kwara State?

Table 1

Challenges inherent in the transportation stage of SWM in Kwara State

S/N	Items	Agree	Disagree
1	Irregularity of waste collection frequency due to faulty vehicles is a problem to waste management	400 (100%)	NIL
2	Distance to approved dumpsites affects the timely collection of waste	400 (100%)	NIL
3	Insufficient number of evacuators per vehicle is a problem to easy collection of waste	379	21

		(94.8%)	(5.3%)
4	Poor conditions of vehicles delay timely disposal of waste	385 (96.3%)	15 (3.8%)
5	Use of old waste evacuation vehicles constitutes a problem to solid waste management.	400 (100%)	NIL

It can be observed from table 1 above that all the respondents agreed that irregularity of waste collection frequency due to faulty vehicles is a challenge to waste management. The table further revealed that all the respondents agreed that the distance to approved dumpsites affects the timely collection of solid waste. A critical observation of the table further revealed that 379 (94.8%) respondents agreed that insufficient number of evacuators per vehicle is a problem to easy collection of waste but 32 (5.3%) respondents disagreed. The table further revealed that 385 (96.3%) respondents agreed that poor condition of vehicles delay timely disposal of solid waste while 15 (3.8%) respondents disagreed. It can also be observed from table 1 above that all the respondents agreed that the use of old waste evacuation vehicles constitute a problem to solid waste management.

Figure 1: Bar chart showing the challenges inherent in the transportation stage of solid waste management in Kwara State

Figure 1 above revealed that all the respondents agreed that the use of faulty vehicles, distance to approved dumpsite and the use of old waste evacuation vehicles are challenges to solid waste management in Kwara State. It can also be observed that 379 respondents agreed that insufficient evacuators per vehicle delay the rate at which waste is collected at various collection points.

Research question 2: What are the challenges inherent in the disposal stage of SWM in Kwara State?

Table 2

Challenges inherent in the disposal stage of SWM in Kwara State

S/N	Items	Agree	Disagree
6.	Poor coordination of dumpsites affect easy disposal of waste	377 (94.3%)	21 (5.3%)
7.	When waste are not compacted at dumpsites it makes easy disposal a problem	373 (93.3%)	27 (6.8%)
8.	Having to go deep inside a disposal site before disposing waste is a problem	379 (94.8%)	21 (5.3%)
9.	The foul stench at the disposal site affect the proper disposal of waste	385	15

		(95.8%)	(3.8%)
10.	Poorly situated disposal site affects waste management	354 (88.5%)	46 (11.5%)

A critical examination of table 2 revealed that 377 (94.3%) respondents agreed that poor coordination of dumpsites affects easy disposal of solid waste while 21 (5.3%) respondents disagreed. The table further revealed that 373 (93.3%) respondents agreed that when wastes are not compacted at dumpsites, it makes easy disposal a problem. A further observation of the table revealed that 379 (94.8%) respondents agreed that having to go deep inside a disposal site before disposing solid waste is a problem. The table also revealed that 385 (95.8%) respondents agreed that the foul stench at the disposal site affect the proper disposal of waste. Finally, it can be observed from the table that 354 (88.5%) respondents agreed that poorly situated disposal sites affects waste management but 46 (11.5%) disagreed.

Figure 2: Bar chart showing the challenges inherent in the transportation stage of solid waste management in Kwara State

It can be observed from figure 2 that almost all the respondents (385) agreed that the foul stench emanating from decomposing waste discourages truck drivers from going deep inside the dumpsite to dispose off their waste. It can also be observed that 379 respondents also believed that having to go deep inside a disposal site before disposing waste is a problem. The chart revealed that the least of all the problems identified was the poor situation of disposal site which 354 respondents agreed that it is a challenge to solid waste management in Kwara State. The observation schedule also reveals that there is only one grader on the disposal site which is meant to be used for grading disposed waste. Based on observation of the disposal site, it can be observed that the disposal site is not properly monitored.

Discussion

What are the challenges inherent in the transportation stage of SWM in Kwara State? The result of the responses obtained indicated that insufficient number of evacuators per vehicle is a challenge to solid waste management ($f = 379$). This finding is in line with the finding of Yukalang et al. (2017) who asserted that lack of staff capacity and staff number is a barrier to municipal solid waste management. It can be observed that some trucks that are used in the collection of waste do not have more than two social workers attached to it. This ultimately reduces the collection rate per day and increases the amount of waste that is piling up in place yet to be evacuated.

Distance to approved dumpsite is a challenge to SWM in Kwara State ($f = 400$). This finding is corroborated by the finding of Agunwamba et al. (2014) in small cities where final disposal sites are nearby, the hauling of waste is not a serious problem but when the haul distance is far, this poses a challenge to solid waste management. This prompts evacuators to mount solid waste in excess in an attempt to reduce the number of times needed to go to the dumpsite. This eventually causes overflowing waste to litter the road while conveying the waste to the disposal site. BioEnergy Consult (2020) views the overloading of collection trucks in an attempt to reduce the number of trips as an unwelcome practice.

Use of old waste evacuation vehicles is a challenge to solid waste management ($f = 400$). This finding is in line with the finding of Abdel-Shafy and Mansour (2018) who opined that the supply of waste management facilities and equipments have a great impact on the success or failure of the programme. This implies that the use of old vehicle which could develop fault at anytime could negatively affect solid waste management. When sub-standard equipments are used in place of standard ones, efficiency is reduced and the desired result may not be easily achieved.

Poor condition of vehicles delays timely disposal of solid waste ($f = 385$). This finding is in line with the finding of Yukalang et al. (2017) who reported that timely disposal of waste is affected by poor condition of waste collection truck. Some waste collection truck break down often when they are fully loaded. In some cases, it takes days before they are fixed and waste continues to rot in the vehicle while uncollected waste at various points continues to pile up.

Irregularity of waste collection frequency due to faulty vehicles is a challenge to solid waste management ($f = 400$). This finding is in line with the finding of Igbinomwanhia, (2011) and Zhu et al. (2008) who affirmed that irregular transport of waste in faulty vehicles significantly affects the management of solid waste in developing countries. Irregular transport of waste in open trucks that develops one fault or the other delays the transportation of waste and encourages the piling up of waste at designated collection points.

What are the challenges inherent in the disposal stage of SWM in Kwara State? The result of the responses obtained indicated that the absence of compaction of waste at disposal site is a challenge inherent in the disposal stage of SWM in Kwara State ($f = 373$). This finding is in line with the finding of Ferronato (2019) who opined that in an open dump site, the lack of compaction of waste, outright neglect of technical and hygienic considerations are some of the challenges facing solid waste management. When wastes are not compacted at dumpsites, land is wasted and the easy movement of trucks is hindered. This encourages truck drivers to dispose their waste uncontrollably.

Poor coordination of dumpsites affects easy disposal of waste ($f = 377$). This finding was corroborated by the finding of Ferronato (2019) who opined that landfills are not properly monitored, coordinated and managed and it poses a significant challenge to proper solid waste management and public health. In the absence of proper monitoring of dumpsites, truck drivers dispose their waste at spots they deem fit or at their convenience.

Poorly cited dumpsites affect solid waste management ($f = 354$). This finding was corroborated by the finding of Nwankwoala and Offor (2018) who affirmed that most dumpsites are poorly cited, some are full and others are poorly coordinated. The finding was also corroborated by the findings of Ogundele (2018); Ferronato (2019); McAllister (2015) who opined that the careful situation of dumpsites is germane in the management of solid waste. It becomes a challenge when dumpsites are situated outskirts of the city while considering community health and at the same time, the site allocated for disposal is also home to a huge number of people.

Distance to final disposal point at a dumpsite is a challenge to SWM ($f = 379$). This finding is in line with the finding of Kyere (2019) who opined that a few of the problems associated with municipal solid waste management include proximity to final disposal site at a landfill, improper landfill operation, health deterioration, accidents, floods occurrences and pollution of surface water. Some landfills cover a

large expanse of land and require one to drive deep into the dumpsite before one can empty the trucks. Such landfills emit foul odours emanating from decamping waste and this could prompt drivers to dispose solid waste carelessly within the site without getting to the proper point to dispose the waste.

The foul stench at disposal site affects waste management (f = 385). This finding is in line with the finding of Yadav and Kumar (2018) who asserted that the various hazards associated with the waste dumpsites such as surface water contamination, bad smell or odour, release of greenhouse gases, accidental hazard caused by fire and so on are the challenges affecting the management of waste at dumpsites.

Conclusion

Based on the findings of this study, it was concluded that challenges of solid waste management in Kwara State includes insufficient social workers attached to trucks for collection of waste; waste collection trucks are inadequate and most of the ones available are below standard and faulty most of the time; dumpsites are poorly coordinated and some truck drivers are contributing to the problem on ground.

Recommendations

Based on the conclusions of the study, it was therefore recommended that more social workers should be employed; the Government should endeavour to purchase more standard waste collection trucks, dumpsites should be properly monitored and coordinated and truck drivers should be educated and properly directed in the disposal of solid waste at dumpsites.

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HEALTHFUL SOCIO-EMOTIONAL ENVIRONMENT AND SPORTS AS CORRELATES FOR IMPROVING SCHOOL ATTENDANCE AMONG PUBLIC SECONDARY SCHOOLS IN OYO TOWN

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Abstract

This study investigated healthful socio-emotional environment and sports as correlates for improving school attendance among public secondary schools in Oyo town. The descriptive survey research design was adopted for this study. The sample size for this study consisted (996) students through multistage sampling procedure. Questionnaire with four scale was used for data collection. The instrument has four scales with reliability values as follows: Healthful Socio-emotional Environment Scale (HSES) = 0.69, Sports Scale= 0.71 and Improving School Attendance Scale (ISAS) = 0.77 through Cronbach's alpha respectively. The demographic data of the respondents were analyzed with frequency counts and percentages while inferential statistic of multiple regressions was used to test the hypotheses at 0.05 alpha level. The finding revealed that healthful socio-emotional environment and sports were relatively and compositely significant for improving school attendance among public secondary schools' students in Oyo town. Based on the findings the following recommendations were made; That Zonal and Local inspectors of education should ensure that every secondary school within their authority have conducive and enabling environment for both academics and sporting activities. That government should provide sports facilities, equipment and supplies for all secondary schools which will attract attention of students to be in school regularly and punctually.

Keywords: Healthful Socio-Emotional Environment, Sports, Improved and School Attendance

Introduction

Getting students regular and punctual in school is more than the function of physical attractiveness of the school alone, other aspects of healthful school living is highly indispensable. Healthful school living is more than the physical being of the school, socio-emotional surrounding is also inclusive. Socio-emotional environment concerns the degree of human relationship which makes the students, teachers, parents and other stakeholders feel connected, recognized and valued, Maek (2014) .

Administrators should spend considerable time planning to ensure that learning environment, both indoor and outdoor, meet the developmental needs of the students. Wolters (2017) claimed that a positive socio-emotional environment is the one that promotes socio-emotional well-being and provide stability for the students according to their individual needs. Sports create an environment where athletes learn to conquer natural “fight or flight” instinct to make consistent and difficult decision under high pressure situations. The ability to function under pressure translates to person who is better at making deadlines and working in stressful situations in the future, (Child Trends data Bank, 2011).

Fadmin (2015) stressed that equal opportunity, true team spirit and spending of time together after play are gained through sports. This enables the students to overcome obstacles and challenges. Sports-wikipedia (2017) indicated that sports enable people to come together in an effort to bring about global peace and to share a desire for self-improvement. Youth can be helped to grow towards positive development and good relationships with others. Positive peer relationships are encouraged through coaching and physical activities. This leads to the youth feeling integrated with other young people. Involvement in sports have been related to one having better cognitive functioning, higher grades and test score, satisfaction in school, engagement in school, aspirations for school and lower dropout rates.

Interpersonal relationship has the most impact on the socio-emotional environment of a school, (Glasser, 2017). Respect for the individual enhances open communication between students and staff while cooperative learning fosters social and emotional growth as students work in team, sharing strengths and weaknesses, (Glasser, 2017). Playing on team sport at school are protective for improving the perceived life satisfactions, (Kadry, 2017). According to (Sanjana, 2017; Ojo, 2017), sport has been shown to serve as a mechanism for the transmission of values, knowledge and norms in creating social harmony, influencing the participants’ emotions and help in coping better with feelings and situations.

Successful schools begin by engaging students and making sure they come to school regularly. Lisa (2017) ascertained that time management and good organisational skill developed in sports can help in achieving both athletics and academic successes. Swiss Academy for Development (2017) stressed that sports has an impact on character building in an individual and it is highly dependent on the context of the programme, the values promoted and developed. It is added that a well organized and supervised school-based sport with varieties of sporting activities is expected to be capable of stimulating students’ interest towards participation. Engaging students in amateurism focussed sports, where every individual play a leadership and followership roles, makes someone feels connected, recognized and valued. This research focuses the extent to which amateurism sports culture can be used to bring positive outcomes related to students’ integration, connection and value under appropriate leadership, climate and experience.

Truancy, as observed by the researchers has become rampant among public secondary school students in Oyo Town. This is evident in the ways students are found at every nook and cranny, when they suppose to be in their different schools. The impact of truancy on school attendance is highly significant on academic performance of students. However, truants outside the school are always occupied with sporting activities such as footballing, table tennis, snocker, running, table tennis and dancing. The question is why ? If the fear for being truants is on the academic problem(s), the students

involved should have gone home straight. Hardly could one see the prefects playing truant behaviour or staff's children being involved because they felt connected to the school and being individually valued. Research has shown that students are more likely to attend classes when they feel connected to the school and where every individual is valued. It is said that sports has the potential to develop leadership and followership skills, break down all barriers and to help the individual and the community reaching their goals. Success of sport according to different researchers depends on the programme and attached values. Since sports is seen as a powerful tool that breaks all barriers, this research investigated the degree to which healthful socio-emotional environment and sports could be used to improve school attendance. This will enable these researchers to make recommendations towards improving school attendance through school-based sports among public secondary schools in Oyo Town.

This study intends to establish the degree to which healthful socio-emotional environment and sports be correlate for improving school attendance among public secondary schools in Oyo Town.

The following hypotheses were tested:

Healthful socio-emotional environment and sports will not relatively be correlate for improving school attendance among public secondary schools in Oyo Town.

Healthful socio-emotional environment and sports will not compositely be correlate for improving school attendance among public secondary schools in Oyo Town.

Method and Materials

The descriptive survey research design was adopted for this study. Population for this study comprised of all public secondary school students in Oyo Town. The sample size for this study consisted of 996 students through multistage sampling techniques. In the first stage, purposive was used to ensure that the similar number of schools were chosen from each of the local government without considering the population. In the second stage, simple random sampling technique (without replacement) was used to select two schools from each of the stratified Atiba, Oyo East and Oyo West that constituted Oyo town so as to ensure that every school has equal chance to be selected. In the third stage, stratified sampling technique was further used to select and stratified students into junior and senior secondary school two classes from the sampled schools. Finally, random sampling technique was used to select 83 students each from both junior and senior schools selected to make sure that every student has equal opportunity to participate. The instrument used for data collection was questionnaire which was in two sections (Section A and B). Section A based on demographic data of the respondents, while section B was structured in line with the independent variables of healthful socio-emotional environment and sports as well as dependent variable of improving school attendance with the modified Likert scale of summative rating to show the extent of agreement or disagreement viz: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with 4, 3, 2 and 1 values respectively. The instrument has four scales with reliability values as follows: Healthful Socio-emotional Environment Scale (HSES) = 0.69, Sports Scale = 0.71 and Improving School Attendance Scale (ISAS) = 0.77 through Cronbach's alpha respectively. The demographic data of the respondents were analyzed with frequency counts and percentages while inferential statistic of multiple regressions was used to test the hypotheses at 0.05 alpha level.

Results**Demographic Variables of the Respondents**

Variables	Frequency	Percentage
SEX		
Male	392	40.58
Female	574	59.42
Total	966	100.00
AGE		
10 – 14	449	46.48
15 – 19	507	52.48
20 – 24	10	1.04
Total	966	100.00
LEVEL		
Junior Secondary School	517	53.52
Senior Secondary School	449	46.48
Total	966	100.00

The above table showed that 392 participants (40.58%) were male while 574 participants (59.42%) were females. It further showed that 449 participants (46.48%) fall between ages 10 – 14, 507 (52.48%) were between 15 – 19 years, 10 (1.04%) were between ages 20 - 24 years. The table finally revealed that 517 participants (53.52%) were in junior secondary school, while 449 participants (46.48%) were in senior secondary school.

Hypotheses Testing:

H₀₁: Healthful socio-emotional environment and sports will not relatively be correlate for improving school attendance among public secondary schools in Oyo Town.

Table 4: Shown relative contribution of the Healthful socio-emotional environment and sports as correlate for improving school attendance among public secondary schools in Oyo Town.

Independent Variables	B	Standard error B	Beta B	T	Sig	Remark
Healthful socio-emotional environment	.993	.408	.429	5.941	.001	Sig
Sports	.947	.234	.414	4.829	.000	Sig

Table 4 showed the unstandardized and standardized regression weight of the , the standard error of Beta (β), the Beta (β), the value of t for the regression of independent variables of Healthful socio-emotional environment and sports on dependent variable for improving school attendance and significant P value. Table 4 revealed that the B-value of Healthful socio-emotional environment and sports were (.993) and (.947) respectively. These showed the level of contribution of Healthful socio-emotional environment and sports as correlates for improving school attendance among public secondary schools in Oyo Town. Their standardized regression weight Beta (β) were Healthful socio-emotional environment (.429) and sports (.414) which showed relationship between healthful socio-emotional environment, sports and improving school attendance among public secondary schools in Oyo. Their t-values were Healthful socio-emotional environment (5.941) and Sports (4.829) at significant levels of Healthful socio-emotional environment (.000), and Sports (.000) respectively. The table 4 showed that the obtained value was statistically significant. The null hypothesis was therefore rejected. Precisely, the result showed that Healthful socio-emotional environment and sports are correlates for improving school attendance among public secondary schools in Oyo Town.

H₀₂: Healthful socio-emotional environment and sports will not compositely be correlate for improving school attendance among public secondary schools in Oyo Town.

Table 5: Shown composite contribution of the Healthful socio-emotional environment and sports as correlate for improving school attendance among public secondary schools in Oyo Town.

Model	Sum of Squares	DF	Mean Square	F	Sig	Remark
Regression	21.230	2	47.912	10.101	.000	Sig.
Residual	327.643	993	1.674			
Total	348.873	995				

R= .421

R Square = .292

Adjusted R Square = .357

The table 5 above showed significant composite contributions of Healthful socio-emotional environment and sports as correlate for improving school attendance among public secondary schools in Oyo Town. It could be observed that the correlation was (R = .421). The adjusted R-square indicated that 35.7% of the variance accounted for Healthful socio-emotional environment and sports as correlate for improving school attendance among public secondary schools in Oyo Town.

Also, the table showed the effectiveness of the prediction with the F-ratio 10.101 and significant alpha (.000).

Discussion

Based on the above finding, the result was in line with the opinion of Wolters (2017) who claimed that a positive socio-emotional environment is the one that promotes socio-emotional well-being and provide stability for the children according to their individual needs. Sports create an environment where athletes learn to conquer natural “fight or flight” instinct to make consistent and difficult decision under high pressure situations. Similarly, Sport has been shown to serve as a mechanism for the transmission of values and norms in creating social harmony. Sports are influencers to the participants’ emotions. It can help coping better with feelings and situations, (Sanjana, 2017).

Successful schools begin by engaging students and making sure they come to school regularly. Lisa (2017) ascertained that time management and good organisational skill developed in sports can help in achieving both athletics and academic successes. Wikipedia (2017) Engaging students in amateurism focussed sports, where every individual play leadership and followership roles, makes someone feels connected, recognized and valued.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

That Healthful socio-emotional environment and sports relatively made contributions to improve school attendance among public secondary schools in Oyo Town and when combined they also had composite contributions to improve school attendance among public secondary schools in Oyo Town.

Recommendations

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

That Zonal and Local inspectors of education should ensure that every secondary school within their authority have conducive and enabling environment for both academics and sporting activities

That Zonal and Local inspectors of education should ensure that every secondary schools within their authority give priority to intramural sports for all students irrespective of their status and background.

That government should provide sports facilities, equipment and supplies for all secondary schools which will attract attention of students to be in school regularly and punctually.

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ASSESSMENT OF THE EFFECT OF RESISTANCE TRAINING ON PAIN THRESHOLD OF YOUNG ADULTS WITH LOW BACK PAIN IN SAMARU ZARIA, KADUNA

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Abstract

Resistance training is one of the management strategies that are widely used in low back pain in the developed nations. It encompasses a heterogeneous group of interventions ranging from general physical fitness or aerobic exercise to muscle strengthening and various types of flexibility or stretching exercises. The purpose of this study was to “Assess the effect of resistance training on pain threshold of young adults with low back pain in Samaru Zaria, Kaduna State. Twenty-five (25) young male adults met the inclusion criteria for the study. Only one group was used as experimental and control group. Each participant participated in a structured training programme, 3 sessions a week for period of eight (8) weeks with each session lasting for maximum of 60 minutes with rest intervals. Data was collected at baseline, at 4th and 8th week into the training programme for all participants, pain perception was measured using Visual Analogue Scale (VAS), Physical characteristics measurement of age, weight, height and body mass index were taken before administering exercise training using International Society for Advancement of Kinanthropometry (ISAK) protocols. Out of twenty five (25) participants that started the training programme, only twenty two (22) participants completed the training and therefore, only their data were analyzed using repeated measure ANOVA. The results showed that, the eight (8) weeks training programme had a significant effect on pain reduction ($F(2, 42) = 81.467, P=0.000$), of the participants. On the basis of the results of this study, it was recommended that resistance training should be incorporated in the treatment of adults with low back pain and physicians can refer their patients to exercise scientist for proper management.

Keywords: Resistance, Training, Lowback, Pain, Flexibility

Introduction

Resistance training is one of the management strategies that are widely used in low back pain in the developed nations. It encompasses a heterogeneous group of interventions ranging from general physical fitness or aerobic exercise to muscle strengthening and various types of flexibility or stretching exercises (Allegri, Montella, Salici, Valente, Marchesini, Compagnone, Baciarello, Manferdini, & Fanelli, 2016).

Exercise is safe for individuals with back pain, because it does not increase the risk of future back injuries or work absence. Substantial evidence exists supporting the use of exercise as a therapeutic tool to improve impairments in back flexibility and strength. Most studies have observed improvements in global pain ratings after exercise programs, and many have observed that exercise can lessen the behavioral, cognitive, affect and disability aspects of back pain syndromes ((Koldaş Doğan, Ay, & Evcik, 2017).

Results from several randomized, controlled studies using a variety of exercise have demonstrated a positive effect on pain. ((MacKelvie, Seenan, & Ryan, 2016), note that an active exercise programme consisting of eight sessions over 4 weeks was found to be superior to unsupervised home exercise instruction for pain reduction (38% in the exercise versus 13% in the home group). (Lawford, Walters, & Ferrar, 2016). Compared an active graded exercise programme consisting of three weekly sessions for 12 weeks with conventional physical therapy and unsupervised walking programme. They observed a 30% pain reduction in the active exercise group versus 23% pain reduction in the physical therapy group and 9% pain reduction in walking group at the end of the treatment. ((Pike, Hearn, & de C Williams, 2016), randomized 378 patients with back pain for less than six months and substantial work absences into 3-week functional restoration programme consisting of intensive exercise with educational and behavioural support or a control group that received passive physical therapy and low intensity exercise. The intensive exercise group reported greater pain reduction at follow up compared with control group (30% versus 20%). (Andersen, Lahav, Ellegaard, and Manniche (2017), randomized patients into various intensities back extension strengthening (50 repetitions versus 15 repetitions versus controls). He found that the most intensively exercised group had a significantly greater reduction in pain symptoms.

Exercise therapy appears to be the most often-used physical therapy intervention in treating people with back pain (Hartzell, Liegey-Dougall, Kishino, & Gatchel, 2016). It aims at abolishing pain, restoring and maintaining full range of motion, improving the strength and endurance of lumbar and abdominal muscles, thereby contributing to early restoration of normal function (Tak, Langhout, Bertrand, Barendrecht, Stubbe, Kerkhoffs, & Weir, 2018)

Low back pain (LBP) can be seen as pain limited to the region between the lower margins of the rib cage and the gluteal creases (Edomwonyi & Ogbue, 2017). Low back pain is one of the major health problems during life time with a prevalence of 80%, which causes functional loss and reduced productivity ((Burström, Nilsson, & Wahlström, 2015; Shiri, Coggon, & Falah-Hassani, 2018). In 85% of patients with low back pain, the symptoms and signs are non-specific without a clear diagnosis, prognosis, or treatment protocol ((Tajerian & Clark, 2017; Vibe Fersum, Smith, Kvåle, Skouen, & O'Sullivan, 2019). Low back pain is regarded as one of the most common musculoskeletal complaints, with many people experiencing back pain during their lifetime (((Walker, 2012).

(Venkateswarlu (2011), opined that low back pain is the most frequently reported disability next to arthritis almost everyone experiences low back pain every now and then whether mild or severe, short time or long time, low back pain can greatly affect an individual's daily life.

LBP has resulted in a substantial personal and economic burden among many families and workers in this country. Currently it is a leading contributor to work absenteeism. It should be noted that even though, long absence from work is more dependent on socio-economic and job related influence and not physical severity (Liddle, Baxter, & Gracey, 2004) globally, it is the leading cause of disability in adults aged less than 40 years, And second to arthritis in people aged 45-65 years (Payan-Carreira, Dominguez, Monteiro, & da Conceição Rainho, 2016).

However, low back pain is one of the health problems in Samaru Zaria, where young adults who are mostly self-employ, farmers and students often complaint of pain, tiredness, discomfort, difficulty in bending, carrying, standing and walking. It is of this view that the researcher conducted a study on assessment of the effect of resistance training on low back pain of young adults in Samaru Zaria, Kaduna State. The purpose of this study was to assess the effect of resistance training on pain threshold of adults with low back pain. The researcher however hypothesized that there is no significant effect of resistance training on pain threshold of adults with low back pain in Samaru Zaria, Kaduna state.

Method and Materials

Repeated measures research design as suggested by (Chalikias & Kounias, 2017). There were five thousand young male adults between the ages of 20-35 years in Samaru Zaria, Kaduna State. Simple random sampling techniques of dip and pick was used to select three (3) quarters; purposive sampling technique was further used to select 25 young male adults who were identified with low back and met the inclusion criteria for this study, were used as sample size for the study. And the measurement of pain was taken by Visual Analogue Scale (VAS).

Training Procedure

The training programme was conducted three times a week at Ahmadu Bello University gymnasium Zaria on alternate days (Tuesdays, Thursdays and Saturdays) for duration of 8 weeks. According to (Boucher, Preuss, Henry, Dumas, and Larivière (2016), stated that both short-term and long-term exercises, offers a numerous health benefits, after one session, an individual may notice some physical and psychological changes within four weeks.

The exercise instructor demonstrated the exercises to the subjects on their first day while they watched and joined later. The exercises were carried out in groups to make it more interesting. Each exercise session began with 10 minutes warm up comprising of brisk walking and jogging. The main exercise workout includes exercise to the back muscles, muscles of the lower extremities and abdominal muscles. Stretches to exercised muscles were done as warm down exercises. Each exercise session lasted for 60 minutes with 5 minutes rest after every 20 minutes of workout.

Warm-up Exercise

Each participant, participated in warm-up for 5 to 10 minutes, using brisk walking, jogging, single knee pull, double knee pull and seated pike stretch with a training intensity of 50% – 60% low maximum heart rate determine by placing hand on radial artery and will be taken for sixty (60) seconds using manual or direct method. The aim was to prepare the subjects physically for the main exercises and allow blood to pump to all the muscles needed for the main workout. The intensity will gradually increase to 50% - 60% from week 5 ((Heyward & Gibson, 2012).

Resistance Training

The training make used of body weight for stretching and strengthening of the muscles of the spine (erector spinea) and abdomen (rectus abdominis, oblique absominiis, transverse abdominis) including the hip extensors (gluteal maximus) and flesors (Iliopsoas), and the quadriceps femoris. These exercises included prone trunk raises, prone alternate arm/leg lift, double knee pull and seated pike stretch.

Data Analysis

The data collected for this research was analysed using Statistical Package for Social Science (SPSS) version 21. The descriptive statistics of mean, standard deviation and range of scores were used to calculate average range of pain for each participant. A repeated measure analysis of variance (ANOVA) was used to evaluate whether a significant change occurred between pre-test, 4th week and 8th week on pain of the participants.

Results

Twenty two (22) young male adults participated in the study. Physical characteristics (anthropometric) measurement (age, weight, height and body mass index) of the participants were taken before administering exercise using International Society for Advancement of Kinanthropometry (ISAK) standard protocol (steward,2011).

Table 1: Demographic Information of Participants

Demography	Frequency	Percentage (%)	Mean	Std. Dev.
Age			28.9	3.8
20 - 25 years	4	18.2		
26 - 30 years	10	45.5		
31 - 35 years	8	36.4		
Occupation			NA	NA
Farmer	8	36.4		
Self-employed	14	63.6		
Weight			49.16	4.71
40 - 45kg	5	22.7		
46 - 50kg	9	40.9		
51 - 55kg	6	27.3		
56 - 60kg	2	9.1		
Height			1.64	0.08
1.50 - 1.60m	7	31.8		
1.61 - 1.70m	10	45.5		
1.71 - 1.80m	5	22.7		
BMI			26.79	4.30
<18.5 BMI	2	9.1		
18.5 - 24.9 BMI	2	9.1		
25.0 - 29.9 BMI	15	68.2		
30.0 - 34.9 BMI	3	13.6		
Total	22	100.0	NA	NA

Key: Std. Dev. = Standard Deviation, NA = Not Applicable

Table 1 showed demographic characteristics of the participants. The demographic information collected from the participants included: age, occupation, height, weight, and body mass index of the participants.

Table 2 Mean and Standard deviation of Average Weekly Perception of Pain of Participants

Perception of pain	Mean	Std. Deviation
Week 0	3.55	0.858
Week 4	2.95	0.785
Week 8	1.91	0.750

The variables were tested for all participants at baseline, at 4th week and 8th week of the exercise programme. The results of the tests were analysed using descriptive statistics of mean and standard deviation. The descriptive statistics of the variable was presented in table 2.

while the average perception of pain of the participants at week 8 was 1.91 ± 0.750 .

Figure 1: Average perception of pain of participants**Table 3: ANOVA table for participants' perception to pain**

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.
Pain	Sphericity Assumed	30.212	2	15.106	81.467	0.000
	Greenhouse-Geisser	30.212	1.944	15.540	81.467	0.000
	Huynh-Feldt	30.212	2.000	15.106	81.467	0.000
	Lower-bound	30.212	1.000	30.212	81.467	0.000
Error(Pain)	Sphericity Assumed	7.788	42	0.185		
	Greenhouse-Geisser	7.788	40.827	0.191		
	Huynh-Feldt	7.788	42.000	0.185		
	Lower-bound	7.788	21.000	0.371		

A repeated measures analysis of variance (ANOVA) was carried out to test the null hypothesis which states that resistance training has no significant effect on the perception of pain of the participants. The results of the analyses are presented in Table 1. The results $F(2, 42) = 81.467$, $p < 0.001$ revealed that there is a significant difference in the average perception of pain of the participants across the eight week period, table 3.

A Bonferroni post hoc test was carried out to identify the average perception of pain that was different from the other(s). The result revealed that there was significant difference in average perception of pain at baseline and 4 weeks ($p = 0.001$) and between 4 and 8 weeks. ($p = 0.001$), table 4.

Table 4 Bonferroni post hoc pairwise comparisons test for perception to pain

(I) Pain	(J) Pain	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
Week 0	Week 4	0.591*	0.126	0.000	0.264	0.918
	Week 8	1.636*	0.140	0.000	1.271	2.001
Week 4	Week 0	-0.591*	0.126	0.000	-0.918	-0.264
	Week 8	1.045*	0.123	0.000	0.726	1.365
Week 8	Week 0	-1.636*	0.140	0.000	-2.001	-1.271
	Week 4	-1.045*	0.123	0.000	-1.365	-0.726

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Discussion

The most obvious benefit of exercise is its ability to improve or maintain musculoskeletal and cardiovascular function; exercise may be useful for improving back function for patients with low back pain. With this goal in mind, exercise-based spine rehabilitation programmes are typically designed around the goals of strengthening the back, increasing back flexibility and improving cardiovascular fitness (Vanderhoydonck & Vrolix, 2018).

The results of this study showed that, eight (8) weeks resistance training had a significant effect on pain of young adults with low back pain in samara Zaria, Kaduna state. Visual analogue scale (VAS) was used in measuring the perception of pain of the participants at baseline, at 4th and 8th weeks. The result revealed that there is a significant reduction in pain perception of the participants ($F(2, 42) = 81.467, P = 0.000$).

Results from several randomized, controlled studies using a variety of exercise including resistance exercise have demonstrated a positive effect on pain. Pike et al (2016), Compared an active graded resistance exercise programme consisting of three weekly sessions for 8 weeks with conventional physical therapy and unsupervised walking programme. They observed a 30% pain reduction in the active resistance exercise group versus 23% pain reduction in the physical therapy group and 9% pain reduction in walking group at the end of the treatment.

According to Koldaş Doğan et al (2017) Exercise is safe for individuals with back pain, because it does not increase the risk of future back injuries or work absence. Substantial evidence exists supporting the use of exercise as a therapeutic tool to improve impairments in back flexibility and strength. Most studies have observed improvements in global pain ratings after resistance exercise programs, and many have observed that exercise can lessen the behavioral, cognitive, affect and disability aspects of back pain syndromes.

Conclusion

It was observed from the result recorded in this study, using visual analogue scale that eight (8) weeks resistance training had a significant effect on pain reduction of young adults with low back pain.

Recommendations

The following recommendations were made:

Resistance training should be incorporated in the treatment of low back pain and physicians can refer patients with low back pain to exercise scientist for proper management.

The residence of Samaru Zaria, should actively engage in stretching and resistance training in order to reduce pain threshold and prevent the prevalence of low back pain among young adults.

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COMPARISON OF SELECTED ANTHROPOMETRIC INDICES FOR CRITERION-CATEGORISATION OF RURAL PRIMARY SCHOOL PUPILS IN ZARIA, NIGERIA

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Abstract

The study aimed at using anthropometric indices (BMI and %BF) to compare the criterion-categorisation for under-weight, normal-weight, overweight and obese among rural boys. And, if, criterion-categorisation would classify participants in similar criteria. A cross-sectional study design with stratified random sampling was employed. Two hundred and eighty-eight rural primary school boys aged 7 to 11 years served as exemplars. The study determined %BF criteria-categorisation and BMI, while, peak height velocity (PHV) and Maturity Age (MA) were subtly determined. Descriptive (mean ± SD), Pearson product relationship (r), McNemar's and Kappa agreement tests were statistically employed, $p \leq 0.05$ was used for all level of significance. The 8 years old had the lowest (16 ± 1.3) BMI value and third-lowest (9.6 ± 2.2) in %BF. The 7 and 9 years old had lower (9.4 ± 2.6 and 9.5 ± 4.2) %BF. The 11 years old had the highest BMI (17.2 ± 1.9) and %BF (11.3 ± 4.7), and the lowest MA (3.2 ± 0.4). BMI classified all participants as normal-weight in the categorisation-criteria, while, %BF revealed ³ 50% occurrences among the LA groups for 7 to 10 years old, and the NA category for 11 years old. Thinness and normal-weight categories at the BMI, and the LA and NA at the %BF category. Apart from 8 years old, all other age groups presented significant and high positive relationships ($r \geq .50$; $p \leq .05$) in the BMI and %BF. The BMI and MA offered negative significantly low ($r = -0.25$), medium ($r = -0.46$) relationships for 7 to 9 years old. The 10 and 11 years old offered a significant high negative relationship ($r = -0.53$; $r = -0.54$ respectively). The relationship between %BF and MA, BMI and MA offered similar propensities. The possible agreement between the categorisation-criteria for %BF and BMI revealed poor ($\kappa = -0.24$), none to slight ($\kappa = 0.14 - \kappa = 0.19$) and moderate ($\kappa = 0.59$) measure of agreement for 7, 9 – 11 and 8 years old, respectively. Body mass and body stature increasingly vary with age. Therefore, the two procedures used for the categorisation criteria does not categorise the same population most especially incomparable nutritional categorisations. Adiposity that includes fat-free mass in the assessment protocol should be utilised instead of BMI for more accurate categorisations.

Keywords: body mass index, criterion-categorisation, maturity age, percent body fat,

Introduction

A developing country like Nigeria must tackle issues regarding malnourishment, which usually incorporates the afflictions of both undernourishment and overweight (OW)/obesity (OB) among its populace (Awuchi, Igwe, & Amagwula, 2020). Undernourishment is undeniably linked with lower socio-economic in rural areas (Samuel, Otitoju, & Okekunle, 2020). Several studies (Capanzana, Aguila, Gironella, & Montecillo, 2018; Khan, Zaheer, & Safdar, 2019) reported occurrences of malnourishment, wasting, and stunting amongst children in rural areas, and it is also more prevalent among boys. Studies (Ayogu, Afiayeni, Madukwe, & Udentia, 2018; Nwachukwu, Ulasi, Okoronkwo, & Okereke, 2018) that investigated rural boys in Nigeria have stated an upsurge in the occurrences of OW and OB in some localities. Some studies (Gottschall et al., 2019; Maeda, Ishida, Nonogaki, & Mori, 2020; Ng, Collins, Hickling, & Bell, 2019) supported the usage of body mass index (BMI) in determining malnourishment in children.

Despite the inherent precincts of BMI to characterise among fat-free mass and fat mass, in which they directly add to BMI values (Adom, De Villiers, Puoane, & Kengne, 2019; Adom, Kengne, De Villiers, Boatun, & Puoane, 2020), it has been conventionally utilised in epidemiological analyses as a substitute for adiposity for its comparative easiness and cost-efficient (Adom et al., 2020). Nevertheless, BMI is an ingenious measure of excess-mass rather than excess body-fat that variations may occur with varied age, gender and maturation in children and adolescents (Srđić, Obradović, Dimitrić, Stokić, & Babović, 2012), which are not usually revealed in the categorisation-criterion. Also, early sexual maturation (SM) is correlated with the incidence of OW/OB while expending BMI-based assessment method (Benedet, da Silva Lopes, Adami, de Fragas Hinnig, & de Vasconcelos, 2014). A diverse BMI-based criterion has been advanced for the categorisation of mass status (Adom et al., 2020). They include The Centers for Disease Control and Prevention (CDC), which is established on the BMI-for-age percentile procedure; The World Health Organization (WHO) criterion reference (categorisation-criterion), which is a derivative of z-score from the mean of BMI-for-age with regards to processing standard deviations, among others (Adom et al., 2020). Similarly, there are other techniques to measure body-fatness which include; total body potassium, skinfold-calliper measurements, dual-energy X-ray absorptiometry (DEXA), BMI, near-infrared reactance (NIR), Magnetic-Resonance-Imaging (MRI), Waist-Circumference (WC), Bioelectrical Impedance Analysis (BIA), Waist-to-Hip Ratio (WHR), air displacement plethysmography, underwater-weighting (densitometry) and isotope dilution method (Adom et al., 2020; Muthuri et al., 2014). Most of the techniques apply only to laboratory sets, they are expensive and may be inappropriate for children (Adom et al., 2020; Akindele, Phillips, & Igumbor, 2016).

Early SM is correlated with the incidence of OW/OB while expending the BMI-based assessment method (Benedet et al., 2014). Disparities in body composition may occur among dissimilar ethnic clusters in the same populace, and it could be because of SM and the broad inconsistency in the commencement of maturation in form of the growth spurt (Eyre, Duncan, & Nevill, 2017; House, Shearrer, Boisseau, Bray, & Davis, 2018; Wells, 2017). In support to these, Kaczmarek, Stawińska-Witoszyńska, Krzyżaniak, Krzywińska-Wiewiorowska, and Siwińska (2015); Villamor and Jansen (2016) disclosed SM as a possibility factor related with OB among boys, whilst Benedet et al. (2014) revealed lesser occurrence of OB in late maturing males. Nonetheless, considering divisions and sub-groups based on SM instead of

just age only, which may likely provide more relevant information, but, ethical considerations may prevent this test of pubertal stages (Ramuth et al., 2020). Perse, it might be acclaimed that at the commencement of growth spurt (maturity), and the wide variance between distinctive ethnical-clusters, may impact nutritional-categorisation while exploiting BMI-based method.

Based on these backgrounds, maturity may be an element that might stimulate the categorisation-criterion process used while classifying OB. The question here is, would primary school-aged boys living in rural areas of Zaria depict the same result? As some studies (Benedet et al., 2014; Li et al., 2017; Reinehr & Roth, 2019; Shalitin & Kiess, 2017) suggested that children that mature later, show a lesser tendency of becoming obese. But, the studies of Akindele et al. (2016); Lopes et al. (2013) has confirmed that relationships exist between %BF and other anthropometric indices, and it is dependent upon age, ethnicity, and gender.

Muthuri et al. (2014) revealed that in several studies conducted on children and adolescents in Africa to estimate OW and OB, BMI-based criteria were utilised. Nevertheless, in Africa, the diagnostic accurateness of the available BMI-based criterion-categorisation that can be expended to identify excess body fat in children and adolescents is generally unspecified. Therefore, only a few works of literature exist that have equated the BMI-based criteria and any of the body-fat criterion measures (Craig, Reilly, & Bland, 2013; Diouf et al., 2018). Thus, the study aimed at anthropometrically assessing the BMI and %BF and comparing them based on criterion-categorisations of underweight, normal weight, overweight and obese in rural boys (aged 7 to 11), living and attending primary schools in rural areas of Zaria Local Government Area (LGA) of Kaduna State, Nigeria.

Methods and Materials

A descriptive and cross-sectional study design was carried out among purposively selected rural primary school pupils in Dutsen-Abba, Wucicciri and Dembo communities in Zaria LGA of Kaduna state. The choice of the respective communities was a result of being in a remote and rural location within Zaria LGA.

The participants are 288 boys (aged 7 to 11 years) from the primary schools. Lists of all the schools per community were obtained from the Office of the Zonal Education Secretary of Zaria LG, Kaduna state. The stratified random sampling technique was adopted in the selection of the schools per community, and to ascertain suitable representation among the schools at 95% confidence level, with a 5% error margin. Within the twelve (12) selected schools, stratified sampling was applied by class and gender to determine the pupils that participated in the study, via class attendance register (as obtained through the respective schools Head-masters). The First 4 male pupils in each class, who consented and endorsed by the headmaster for the study were selected. The final participants consisted of 52, 56, 61, 50 and 69 boys, totalling 288 participants (aged 7 to 11 years old, respectively). And, this provided the researchers with a margin error of 2.41% at the confidence level of 95%.

The International Society for the Advancement of Kinanthropometry (ISAK) protocols were used for all anthropometric measurements (Stewart, Marfell-Jones, Olds, & de Ridder, 2011). Throughout measurements, shoes were off, and negligible clothing allowed. Sitting height was determined as the vertical height between the transverse planes of the Vertex and the lower aspects of the buttocks while

seated, to the nearest 0.1 cm. Body-mass was determined with SECA 213 portable stadiometer (Chino, USA) to the nearest 0.1 kg. The horizontal height between the transverse planes of the Vertex and the lower aspect of the feet to 0.1 cm was taken as body stature. While, arm-span was determined as the vertical distance between the dactylia of the right and left arms, with the arms stretched out vertically to the nearest 0.1 cm. Innovare skinfold-calliper (Cescorf, Brazil) was used for the skinfolds measurements at triceps and calf and noted to the closest 0.5 mm. while the triceps thickness was measured parallel to the long axis of the arm at the posterior surface of the arm, at the midline level of the Midacromiale-radiale landmark (triceps measurement site), similarly, the medial-calf thickness was taken vertically at the point on the furthest medial part of the calf via the maximum girth level (medial calf-skinfold site).

All anthropometric measurements were measured twice, if a disparity of > 0.5 cm/kg (in stature and body mass) and 0.5 mm (for all skinfolds) exists, the instantly third measure will be taken. As the average of the first and second measure was noted when no disparity exists. The median value was taken at the instance of the third measurement. The skinfolds (triceps and calf) sums were used for the determination of %BF using the methods and charts for boys as recommended by Slaughter et al. (1988), similarly, BMI was computed by dividing body mass (kg) with the stature (m^2) (Grgic et al., 2020).

Maturity Age (MA) is expressed by the period at which adolescents' cyphers of maturity (growth spurt) appeared. Age at peak height velocity (a-PHV), the PHV was calculated for each of the participants. The equation of Mirwald, Baxter-Jones, Bailey, and Beunen (2002) was used in the estimation of the a-PHV, and PHV in which MA is determined by deducting the a-PHV from chronological age (CA) immediately when the measurement was taken. The study participants who mature early were categorised with MA of < 0.50 , however, those who fell amongst 0.48 to 0.49 were categorised as those that matured normally, while the boys with MA of > 0.49 were categorised as those who matured late. Similarly, CA was determined by deducting the actual Date-Of-Birth (DOB) from the day of the measurement and categorised at a range of a year intervals, i.e. 7 years old boys were in the range of 6.5 to 7.49 years. As indicated in the first table (Table 1), the total number per group based on ranges for age. MA as expressed by the scheduling of the adolescent appearance of maturity (growth spurt).

The descriptive statistics (mean \pm SD) as depicted in Table 1 were analysed. Frequencies were determined for the establishment of percentage categorisation in the %BF and BMI group criterions. BMI values were further categorised based on International cut-off points for OB, OW, and thinness based on age (7 to 11 years) and gender (male) as used in the studies of Craig et al. (2013); Ramuth et al. (2020). The BMI categorisation for OB, OW, and thinness for 7 years old boys (≤ 20.63 ; 17.92; 14.04), 8 years old boys (≤ 21.60 ; 18.44; 14.15), 9 years old boys (≤ 22.77 ; 19.10; 14.35), 10 years old boys (≤ 24.00 ; 19.84; 14.64), 11 years old boys (≤ 25.10 ; 20.55; 14.97) for OB, OW and thinness respectively. Similarly, %BF criteria-categorisation was determined for the low-adiposity (LA) as ≤ 10 mm, normal-adiposity (NA) as 11 to 25 mm, while, high-adiposity (HA) as ≥ 26 mm (Slaughter et al., 1988). The BMI values attained that is not among the mentioned categorisation cut-off point values were categorised as normal.

To determine the relationships between %BF, BMI, and MA, Pearson's product correlation was used. The relationship values were categorised as $r = 0.1$ (low), $r = 0.3$ (medium) and $r = 0.5$ (high) (Lund_Research_Ltd, 2020). Subsequently, the methods of agreement between the %BF and BMI categorisation was calculated statistically via the Kappa agreement test (Song, Li, Gasevic, Flores, & Yu,

2016; Viera & Garrett, 2005). As suggested by Cohen, the Kappa scores be interpreted as: values ≤ 0 (no agreement), 0.01 to 0.20 (none to slight), 0.21 to 0.40 (fair), 0.41 to 0.60 (moderate), 0.61 to 0.80 (substantial), and 0.81 to 1.00 (almost perfect) agreements (McHugh, 2012; Song et al., 2016). While, the assessment for the determined significance of differences among the associated quantities were determined through the McNemar (1947) test, based on the %BF and BMI categorisations. The IBM-SPSS statistical package, version 26 was used for all statistical analyses, while, $p \leq 0.05$ was used for all statistical significance.

Results

Table 1 exemplifies the descriptive statistics (mean \pm SD) of the participants (7 to 11 years old boys).

Table 1: The descriptive (mean \pm SD) for anthropometrical measurements of 7 to 11 years old rural boys

Anthropometric measures	7 years old (N = 52)	8 years old (N = 56)	9 years old (N = 61)	10 years old (N = 50)	11 years old (N = 69)
A-PHV (years)	12.4 \pm 0.3	12.9 \pm 0.2	13.4 \pm 0.3	13.8 \pm 0.4	14.3 \pm 0.4
BMI (kg/m ²)	16.1 \pm 1.3	16.0 \pm 1.3	16.2 \pm 2.1	16.6 \pm 2.0	17.2 \pm 1.9
Body mass (kg)	22.9 \pm 2.5	24.7 \pm 2.7	27.0 \pm 4.8	29.5 \pm 5.2	32.9 \pm 4.9
Body stature (cm)	119.3 \pm 4.3	124.3 \pm 4.7	129.0 \pm 6.0	132.9 \pm 5.8	138.3 \pm 5.8
Calf sf (mm)	6.9 \pm 2.5	7.3 \pm 2.3	7.2 \pm 4.1	8.1 \pm 4.0	9.0 \pm 4.6
Chr. age (years)	7.1 \pm 0.3	8.1 \pm 0.3	9.0 \pm 0.3	10.0 \pm 0.3	11.1 \pm 0.3
Fat (%)	9.4 \pm 2.6	9.6 \pm 2.2	9.5 \pm 4.2	10.4 \pm 3.9	11.3 \pm 4.7
MA (years)	5.4 \pm 0.3	4.9 \pm 0.3	4.3 \pm 0.3	3.8 \pm 0.4	3.2 \pm 0.4
Sum of sf (mm)	13.7 \pm 4.3	14.1 \pm 3.5	13.9 \pm 6.9	15.4 \pm 6.4	16.9 \pm 7.7
Triceps sf (mm)	6.8 \pm 2.3	6.8 \pm 1.7	6.6 \pm 3.0	7.3 \pm 2.9	7.9 \pm 3.6

Chr. age = Chronological age; PHV = Peak height velocity; sf = Skinfold

As depicted in table 1, body mass and body stature increasingly vary with age accordingly. The lowest in the BMI value was realised among 8 years old boys (16.0 \pm 1.3) and the group offered the third lowest in terms of %BF (9.6 \pm 2.2). However, the 7 years old (9.4 \pm 2.6) and 9 years old (9.5 \pm 4.2) had lower %BF. The 11 years old boys offered the uppermost BMI values (17.2 \pm 1.9), the uppermost %BF (11.3 \pm 4.7) and the lowermost MA (3.2 \pm 0.4), this implies that they were the closest to the attainment of PHV. The MA exhibited to be uppermost for the 7 years old (5.4 \pm 0.3), as they were the farthestmost away from PHV. It is also well-defined as indicated in the table, that all study participants proved to be late developers in the attainment of SM.

In table 2, the percentages occurrences into each criterion for BMI and %BF into the categorisations were presented.

Table 2: The occurrences in percentage of the BMI and %BF categorisation-criteria of 7 to 11 years old rural boys

Age groups	BMI			%BF		
	T (%)	NW (%)	OO (%)	LA (%)	NA (%)	HA (%)
7 years old	6.5	87.7	5.8	59.1	39.9	0.1
8 years old	7.0	88.0	5.0	58.4	41.4	0.2
9 years old	10.6	86.1	3.3	65.5	31.6	2.9
10 years old	6.9	90.0	3.1	51	45.7	3.2
11 years old	3.9	93.0	3.1	43.5	53.6	2.8

HA = High-adiposity; LA = Low-adiposity; NA = Normal-adiposity; NW = Normal-weight; OO = Overweight/Obese; T = Thinness;

Table 2 disclosed the values of BMI into the categorisation-criteria in percentages, it is existent in the normal-weight category in all the respective age groups, with very high percentages (86.1 to 93.0%). However, while using %BF as categorisation-criteria, the highest (³ 50%) occurrences were depicted among the LA groups for 7 to 10 years old, and at the NA category for 11 years old. It is as well worth noting that, no incidence (£ 0.3%) was obvious in the HA category for 7 and 8 years old, whereas 5.8 - 5.0% was obtained in the same group for OW/OB category. The obvious existence of HA categorisation and OW/OB categorisation are nearly identical for 9 to 11 years. The percentage of existence, in the LA category, ranged from 43.5 to 59.1% for all the participants, whereas, the percentage of existence in the thinness category (ranging from 3.9 to 10.6%) is considerably low. Thinness and normal-weight categories at the BMI, and the LA and NA at the %BF category, were the most obvious differences that existed between the two criteria for categorisation.

The third table presents the relationship between BMI, %BF and MA of the participants

Table 3: Relationship between BMI, %BF and MA among the participants (data was controlled for MA)

Age groups	BMI and %BF (Controlling for MA)		BMI and MA	
	<i>r</i> -value	<i>p</i> -value	<i>r</i> -value	<i>p</i> -value
7 years old	0.71†	0.01*	-0.25	0.00*
8 years old	0.49†	0.02*	-0.38	0.00*
9 years old	0.74†	0.00*	-0.46	0.00*
10 years old	0.77†	0.00*	-0.53†	0.00*
11 years old	0.76†	0.00*	-0.54†	0.00*

* = statistical significance at $p \leq .05$; high $r = 0.5†$; Low $r = 0.1$; medium $r = 0.3$;

In table 3 as shown above, revealed the correlational analysis between BMI and %BF, the researchers statistically controlled for MA to disregard the variable at the correlation. Apart from 8 years old, all other age groups presented significant and high positive relationships ($r \geq .50$; $p \leq .05$) among the BMI and %BF. While the relationship between BMI and MA offered negative significantly low ($r = -0.25$), medium ($r = -0.46$) relationships, the negative relationships for 7 to 9 years old were depicted accordingly. However, significant-high negative relationships were discovered for 10 and 11 years old ($r = -0.53$; $r = -0.54$ respectively). The relationship between %BF and MA offered similar propensities as were observed between BMI and MA. This appears to imply that the relationships that existed among MA and %BF were less, compared to MA and BMI.

Table 4: Measure of agreement (Kappa and McNemar) between BMI and %BF categorised for 7 to 11 years old rural boys

Age groups	Kappa measure of agreement		Test for significance (McNemar)
	Kappa (κ)	SoA	
7 years old	-0.24	NA	0.00*
8 years old	0.59	MA	0.00*
9 years old	0.16	SA	0.00*
10 years old	0.19	SA	0.00*
11 years old	0.14	SA	0.00*

SoA = Strength of agreement; NA = No agreement (≤ 0); MA = Moderate agreement (0.41 – 0.60); SA = None to slight agreement (0.01 – 0.20); * = $p \leq 0.05$.

The Kappa in Viera and Garrett (2005) and McNemar (1947) evaluation was replicated to examine the possible agreement (if any) between the categorisation-criteria for %BF and BMI as offered in the result

(Table 4). The 7 - year old boys revealed poor ($\kappa = -0.24$) measure of agreement, unlike the 9 to 11 years old which obtained a none to slight ($\kappa = 0.14 - \kappa = 0.19$) measures of agreement. The uppermost ($\kappa = 0.59$) measure was established for 8 years old. The McNemar (1947) analysis to establish the differences among the paired-proportion of BMI and %BF categories showed significant differences among the two categorisation methods among the participants as categorised according to the respective categories.

Discussion

The study aimed at using anthropometric indices as they relate to BMI and %BF, and compare the criteria-categorisations for under-weight, normal-weight, overweight and obese among the rural boys, aged 7 to 11 years, living and attending primary schools in areas of Zaria Local Government Area of Kaduna state, Nigeria. To achieve these, the major weakness of this study was that MA was indirectly estimated, and hence, scanty literature was available that applied the same method. The study outcomes revealed that 7 to 11 years old boys were maturing late, the outcome is valid following the findings of Grgic et al. (2020) who also established that African boys usually verge to later puberty, when equated with other ethnicity-groups. The probable justification for this finding could be as a result that the participants came from an underprivileged environment, where nutritive-insufficiencies are common. It has been well established that nutritive status is recognised to affect maturation (puberty) (Benedet et al., 2014; Kyweluk, Georgiev, Borja, Gettler, & Kuzawa, 2018; Ramuth et al., 2020; Villamor & Jansen, 2016), and this could clarify the boys being categorised as maturing late. Another obvious limitation to this study was that the gold-standard technique for the assessment of body composition was not used. Consequently, the study therefore cannot be able to determine the exact techniques applied that is more fitting for the used population. Nonetheless, the findings provided some relationships between BMI, %BF and MA as well as a comparison of BMI and %BF categorisation-criteria.

The OW and OB occurrence indices among the participants were negligible in comparison with other studies. Similarly, the study of Benedet et al. (2014) identified none to slight incidences of OW and obesity with late maturing boys. Based on Benedet et al. (2014) study, we can deduce that early maturing boys can be categorised as those having high incidences of OW and OB. Besides, there are no single participants in this study that presented serious thinness, yet, trivial proportions of thinness were obvious among some participants.

The current study establishes a highly significant relationship between %BF and BMI among all age groups studied, and this finding was supported by previous studies (Akindele et al., 2016; Grgic et al., 2020; Srdić et al., 2012). Similarly, it was recognised that greater relationships were established between MA and BMI in most of the age groups when compared to relationships between %BF and MA. This is a clear indication that MA possesses a greater relationship with BMI when compared to %BF, this could perhaps impact the categorisation-criteria. The study of Benedet et al. (2014) was in support of the realised relationships between OB and sexual maturation, though not applying the indirect technique, as BMI was expended in the study as a categorisation-criteria.

To the researchers' knowledge, only a few studies could be established that utilises the indirect technique of examining the maturity age and comparing it to indices of body composition. In support of this study findings, Armstrong and Van Mechelen (2017); Frysz, Gregory, Aspden, Paternoster, and Tobias (2020); McCormack et al. (2017) revealed that late-maturing adolescent boys have more bone-mineral density, more lean-mass, and as well were taller at the stage of PHV when compared with adolescents that mature

early. Considering that all the participants were late maturing boys, this might serve as a clarification for the observed high negative relationships in the BMI and MA. Similarly, the greater lean mass could perhaps impact the categorization-criteria conferring to BMI, as documented in a preceding study of Srdić et al. (2012) in which they have highlighted this as a potential weakness of BMI. Regrettably, to the researcher's knowledge, there seems to be no single study that described any linkage between %BF and SM and using the same skinfold technique.

Conclusion

It is worth noting that disparities exist in the categorisation-criteria of BMI and %BF among 7 to 11 years old boys. Similarly, the observed strength of agreement among BMI and %BF categorisation-criteria obtained is poor to moderate, signifying that the two procedures used for the categorisation-criteria do not categorise the same population as incomparable nutritional categorisations. Though the most appropriate categorisation-criteria in the study cannot be pinpointed as the most appropriate for this kind of participants, it warrants further exploration of the techniques. Even though the application of BMI as a technique is recognised as the cheapest and requires little skills to administer, consequently, the constraint that it measures heaviness rather than fatness cannot be overlooked. Hence, other techniques should be developed which will lay more emphasis on adiposity whilst consecutively reflecting the influence of maturity (Ramuth et al., 2020). Several studies (Jansen, Harris, Mallan, Daniels, & Thorpe, 2018; Karatela, Ward, Zeng, & Paterson, 2018; Keefer, Caputo, & Tseh, 2013; Rad, Sabzevary, & Dehnavi, 2018; Woolcott & Bergman, 2018) have explored height-to-waist ratios as potential nutritional categorisation-index, nonetheless, there exist only little studies that included rural populace. Therefore, upcoming studies should explore more using a higher number of participants, in a longitudinal study, determine the influence of maturity using direct-measures on different body composition components among diverse rural populations.

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INFLUENCE OF KNOWLEDGE ON PREGNANT WOMEN ATTITUDE TOWARDS MALARIA PREVENTION STRATEGIES IN NORTH-EAST ZONE, NIGERIA

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Abstract

This study investigated the influence of knowledge on pregnant women attitude towards malaria prevention strategies in North-east zone, Nigeria, using ex-post facto research design. Multistage sampling technique consisting of simple random, stratified, proportionate and systematic sampling techniques were used to draw a sample from a population of 503,661 antenatal care (ANC) registered pregnant women from six (6) states in North-east zone, Nigeria. Thus, a total of 1,200 pregnant women attending ANC formed the respondents. The instrument for data collection was a researcher-developed validated close-ended questionnaire. The instrument was tested using Cronbach Alpha and a reliability index of 0.80 was obtained from the pilot study result. The data collected was analysed using International Business Machine (IBM) Statistical Package of Social Science (SPSS) version 25.0. The descriptive statistics of mean scores and standard deviations were used to answer the research question. Inferential statistics of Pearson Product Moment Correlation Coefficient (PPMC) was used to test formulated null hypothesis. The finding of the study revealed that; pregnant women in North-East zone have positive attitude towards malaria prevention strategies ($p=0.000$; $p < 0.05$). The conclusion drawn was that the pregnant women have positive attitude to the adoption and use of malaria prevention strategies. Based on conclusion, it was recommended that, public enlightenment campaigns concerning malaria prevention strategies should be intensified to increase the awareness and positive attitude of malaria prevention among the non-ANC registered pregnant women.

Keywords: Influence, knowledge, attitude, malaria, prevention, strategies, pregnant women.

Introduction

Malaria is a major public health problem affecting humanity. Despite its preventability through various government programmes to reduce its menace, malaria is still challenging in sub-Saharan Africa, particularly in some parts of Nigeria (Nigeria Malaria Fact Sheet, 2011). According to Aguzie (2018); World Health Organisation (WHO, 2012) in sub-Saharan Africa region, despite malaria is curable and preventable, Malaria in Pregnancy [MiP] constitutes 90% of pregnant women deaths. Pregnant women, their foetus and infants are at risk of malaria infection by *Plasmodium falciparum* which significantly affects their wellbeing; causes serious harmful effects to a woman and her foetus such as maternal anaemia, spontaneous abortion, intrauterine growth retardation (IUGR), premature delivery and low birth weight [LBW] with an increased risk of neonatal death (Desail, *et al.* 2007).

In sub-Saharan region, the latest report by WHO-World Malaria Report [WMR] (2018) showed there were 219 million malaria cases in 2017 in comparison with 217 million as reported in 2016 and 239 million in 2010. Also, it was estimated that 445,000 malaria deaths occurred in 2016 (WHO-WMR, 2017). These high epidemic rates of malaria showed no reduction in the malaria burden when compared to previous years. Majority of malaria burden are borne in Africa among pregnant women, their foetus and children under five years of age (WHO-WMR, 2017; RBM, 2015). Most prevalent malaria parasite is *P. falciparum* in African Region accounting for 99.75% of estimated malaria cases in 2017 alone (WHO-WMR, 2018). In sub-Saharan Africa and India, fifteen countries bear almost 80% of the world malaria burden. Nearly half of all world malaria cases occurred in five countries: Nigeria (25%), Democratic Republic of Congo (11%), Mozambique (5%), Uganda (4%) and India (4%) (WHO-WMR, 2018).

In Nigeria, malaria is endemic with all year round transmission throughout the country making 76 per cent of the population living in high transmission areas and 24 per cent in low transmission areas. This means that 97% of the population are at risk while only 3% live in the malaria free highlands mountains such as southern Jos in Plateau State at an altitude ranging from 1,200 to 1,400 meters (WHO-WMR, 2018). According to a malaria indicator survey conducted by the Nigerian National Malaria Programme in 2015, ownership of LLINs was 69 percent, of which 37 percent of the household slept under an LLIN the night before the survey. The survey results in addition showed that among women who attended ANC for their most recent pregnancies, only 37 percent received two or more doses of SP (National Malaria Control Programme [NMCP], 2016; National Population Commission, 2014; National Bureau of Statistics [NBS], 2012).

The pregnant women knowledge about malaria infection risk and treatment options affects their willingness and ability to utilise the available malaria prevention and treatment methods (Tobin-West & Asuquo, 2013). The combination of the effects of knowledge about malaria and pregnant women attitude towards protecting themselves against malaria is expected to provide the necessary consciousness-raising, concern-arousing, action-stimulating impetus to appropriately engage in preventive health practices (Atulomah & Atulomah, 2012). Lack of awareness of the nature of the health risks individuals are exposed to and what to do about it can significantly limit preventive actions. Health Literacy acquired through appropriate health education experience operates to establish this mind set and skills in people (Atulomah & Atulomah, 2012). Minnesota Health Improvement Partnership Social Conditions and Health Action Team, states that the fundamental foundation of social and economic advancement is good health.

According to Oladimeji *et al.* (2018), barriers to effective utilisation of malaria prevention interventions are beliefs, fear of side effects from current malaria preventive measures, corruption by workers and cost of nets, and poor environmental hygiene. Vital community-level interventions for

improving home management of malaria includes provision of access to prompt treatments; that is now promoted in the rural areas of Nigeria. Correct knowledge, good attitudes and better practices of malaria prevention is one of the most appropriate ways of maintaining pregnant women healthy. Misconceptions about the disease and the health-seeking behaviour of individuals can enhance or interfere with the effectiveness of malaria prevention measures.

Various government programmes on malaria prevention have been employed to reduce its menace in Nigeria; but it is expected many pregnant women are still not utilising the interventions in order to reduce maternal and child mortality from malaria infection.

It has been observed that pregnant women are frequently reporting to hospitals and clinics with complains of fever, headache, vomiting, abdominal discomfort and many more. In some instances, they are diagnosed with MiP. Consequently, many usually developed anaemia, LBW, spontaneous abortion and still birth delivery. Against this backdrop of persistent high maternal morbidity, pregnancy-related complications in Nigeria and consequential development attentions by Governments and International Non-Governmental Organisations in North-East zone, it is imperative that a study is carried out to determine influence of knowledge on the attitude of pregnant women towards malaria prevention strategies in North-east zone, Nigeria. The purpose of the study is to assess whether the knowledge of malaria prevention strategies influences attitude towards malaria prevention strategies among pregnant women in North-East zone of Nigeria.

Method and Materials

This study assessed the influence of knowledge on attitude of pregnant women towards malaria prevention strategies in North-East zone of Nigeria. One thousand two hundred (1,200) copies of questionnaire were administered out of which one thousand one hundred (1,100) copies (110;91.7%), were found to be valid for the analysis. The IBM SPSS Version 25.0 was used to analysed the data obtained from the respondents. Descriptive statistics of mean and standard deviations were used and answered the research question while inferential statistics of PPMC was used and tested hypothesis postulated for the study.

Results

Answer to Research Question

Research Question: Does knowledge of malaria prevention strategies influence attitude towards malaria prevention strategies among pregnant women in North-East zone of Nigeria?

Table 1: Mean Scores and Standard Deviations of responses on the influence of Knowledge on Attitude of Malaria Prevention strategies among Pregnant Women in North-east Zone, Nigeria

Variable	N	Mean	Std. Dev	Mean Difference
Knowledge	1100	3.13	0.633	0.33
Attitude	1100	2.80	0.863	

Decision mean = 2.50

Table 1 shows the mean score of the influence of knowledge of malaria prevention strategies on the attitude of pregnant women to malaria prevention strategies in North-East zone of Nigeria. The table reveals that the mean score for the attitude of the pregnant women is 2.80 with a standard deviation of 0.863, while the mean score of knowledge is 3.13 with a standard deviation of 0.633. The mean difference was 0.33 implying that knowledge positively influences malaria prevention attitude. It could therefore be concluded that knowledge influences the attitude of the pregnant women towards malaria prevention strategies in North-East zone of Nigeria.

Hypothesis: There is no significant influence of knowledge on attitude towards malaria prevention strategies among pregnant women in North-East zone of Nigeria.

Table 2: Correlation between knowledge and attitude of pregnant women towards malaria prevention strategies

Variables	N	Mean	Std. Dev.	Std. Error	r-calc.	Df	p-value
Knowledge	1100	3.13	0.633	0.019	0.135	1098	0.000
Attitude	1100	2.80	0.863	0.026			

(r-critical = 0.062, $p < 0.05$)

Table 2 indicates the influence of knowledge is positively and significantly correlated with the attitude of the pregnant women towards malaria prevention strategies. The observed correlation coefficient (r-calc.) obtained at 1098 df for the test is 0.135. The critical value for the corresponding df is 0.062 at the fixed p-value of 0.05. The observed p-value for the test is 0.000 ($p < 0.05$). These observations provided sufficient evidence for rejecting the null hypothesis. The null hypothesis which states that there is no significant influence of knowledge on attitude towards malaria prevention strategies among pregnant women was therefore rejected.

Discussion of Finding

The finding from this study is that the knowledge of malaria prevention strategies influenced the attitude of the pregnant women in North-East zone of Nigeria. This finding is in line with Fuge *et al.* (2015) study in Ethiopia which reported that mothers who obtained information about malaria and ITNs had significant frequency of positive attitude (52.2 %) than those who did not (21.4 %) ($p = 0.02$). In a related study by Titiloye *et al.* (2017), it was found that two hundred and ninety-one (72.7%) of the respondents agreed that taking the IPTp-SP drug to prevent MiP was necessary while 17 (4.3%) disagreed. Again, 52.5% of the respondents had positive attitude while the remaining 47.5% had negative attitude to malaria preventives during pregnancy. One hundred and twenty-seven that is, (31.8%) had taken IPTp-SP while more than half which is (50.8%) of the respondents had never taken SP for malaria; and 70 (17.5%) are not aware about IPTp-SP before the study was conducted. Similarly, in a study by Centre for Disease Control and the United States Agency for International Development [USAID] in 2014 in Liberia; the final report showed that majority of the pregnant women (91%) reportedly took medicine to prevent malaria. Almost all of these women reported that they took at least one dose of SP. Uptake of at least two doses of IPTp-SP2+ was widespread with 75 percent of nursing women (with children ages two years old or younger) reporting that they took two or more doses of the medication in their last pregnancy. Overall, 58 percent of the respondents had a favourable or positive attitude toward bed net use. Grossly, more than three-quarters (76%) of the respondents had positive attitudes towards ANC and IPTp-SP.

This finding is not in agreement with studies carried out in Anambra State by Ukibe *et al.* (2014); Akinleye and Ajayi (2011). This studies recorded negative attitude and poor self-practice among pregnant women. The findings, however, differed from a study carried out in Lagos where the researchers reported positive attitude towards malaria prevention and control (Iriemenam *et al.*, 2011). More so, Isedeh (2011) studied knowledge, attitude and the use of ITNs among pregnant women found and that the use of ITNs was due to unfavourable experience during hot weather. This study finding is in contrast to Atenchong and Ozims (2016); Oo, Soe and Shwe (2013) which identified a poor attitude to ITNs among pregnant women mainly because of lack of awareness. Also, Sabin *et al.* (2010) assessed attitudes, knowledge and practices regarding malaria prevention and treatment among pregnant women and reported that majority of the respondents has negative attitude toward malaria prevention as a result of misconceptions and use of unproven prevention and treatment methods.

Conclusion

On the basis of the findings of this study it is concluded that knowledge of the malaria prevention strategies influences women attitude positively during pregnancy.

Recommendation

Public enlightenment campaigns concerning malaria prevention strategies should be intensified to increase the awareness and positive attitude of malaria prevention among the non-ANC registered pregnant women.

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KNOWLEDGE OF PREVENTION AND CONTROL MEASURES OF CORONAVIRUS AMONG RESIDENTS OF BAUCHI STATE, NIGERIA

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Abstract

The study investigated knowledge of prevention and control measures of COVID-19 infection among residents of Bauchi state, Nigeria. A descriptive survey research design was adopted for the study. The population of the study comprised the entire residents of Bauchi state. Multi-stage sampling technique of cluster, simple random, proportionate and systematic sampling techniques were used to select one thousand one hundred and forty-four (1144) respondents from twelve selected political wards of six selected local government areas of Bauchi state. Four research questions were answered and four null hypotheses were tested. Researchers' developed questionnaire named Knowledge of prevention and control measures of COVID-19 infection among residents Questionnaire (KPCMCQ) was used as an instrument for data collection which was validated by three experts in the field of Health Education and reliability index of 0.80 was obtained. Instrument was administered by the researcher and four (4) trained research assistants. Descriptive statistics of frequency count was used to describe and analyze demographic data while Chi-square statistics were used to test the null hypotheses in the study. The findings of the study revealed that Residents of Bauchi state significantly have knowledge of prevention and control measures of COVID-19; all the calculated Chi-square values were greater than critical value (2036, 481, 1298 & 1951 > critical value 5.991). The study concluded that people of Bauchi state have significant knowledge of prevention and control of COVID-19 infection. It was therefore recommended among others that government should intensify effort in ensuring that the knowledge of social distancing and covering one's mouth when sneezing or coughing as prevention and control measure of covid-19 is sustained through continuous public health enlightenment.

Keywords: Knowledge, prevention, control measures, Coronavirus and residents

Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. COVID-19 is defined as illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the World Health Organization (WHO) on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency (World Health Organization [WHO], 2021). COVID-19 is one of the main reasons for cardiovascular disease which can cause myocarditis, heart failure, pericarditis and cardiac conduction defects. Furthermore, in patients with a history of cardiovascular diseases, COVID-19 can cause a change in the progress of the underlying disease and rising mortality. Therefore, increase in blood glucose levels can lead to the destruction of immune systems of individuals

and results in a decrease of abilities to fight different types of infections, such as COVID-19 (BioWord, 2020).

People who fall sick with COVID-19 will experience mild to moderate symptoms. The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes or exhales (Su, Wong & Shi, 2016). According to John (2020), most common symptoms of COVID-19 are: fever, dry cough, tiredness, aches and pains, sore throat, diarrhoea, conjunctivitis, headache, loss of taste or smell, a rash on skin or discolouration of fingers or toes. Thus, to minimize the risk of transmission, communities are required to follow accepted infection control practices such as frequent hand washing using soap, hand rubbing with an alcohol-based sanitizer, social distancing, awareness of the symptom frequently, wearing the face mask in the community, and practicing respiratory hygiene.

Masud et al. (2020) reported that 68.6% of the respondents knew that maintaining physical distancing and avoiding mass gatherings were measures of prevention of COVID-19 while 67.2% of them knew that washing hands with soap could prevent COVID-19 disease, but contrarily, the highest 72.5% did not know that avoidance of touching mouth, nose, and eyes without washing hands was a preventive measure. Matuschek and Haussmann (2020) pointed out that wearing a face mask is an efficient hygienic tool to prevent the spread of a viral infection. Siddiqui et al. (2020) reported that 356 respondents (84%) knew they had to wash their hands for 20 seconds and did this as well to prevent spread of COVID-19, 303 respondents (75%) while (79%) knew that they had to maintain a safe distance of at least one meter and kept this distance. Jeremy, Austin and Zdimal (2021) reported that knowledge of mask wearing among health workers reduces transmissibility per contact by reducing transmission of infected respiratory particles in both laboratory and clinical contexts.

The burden of COVID-19 has increased worldwide in terms of morbidity, mortality and economic crisis. Globally, as of 27 July 2020, over 16,249,165 confirmed cases of COVID-19 and 649,208 deaths were reported and it has been alarmingly increased in Africa (Olum, et al., 2020). The situation might be serious in Sub-Saharan Africa due to high co morbidities (HIV, TB and malaria), poverty, and poor healthcare service quality and access to health facilities. As of 27 July 2020, 847,628 confirmed cases and 17,759 deaths were reported from Africa (Osseni, 2020). The situation has no exception in Nigeria, where the burden of COVID-19 has increased the number of new confirmed cases to 1,843 from 1,029 in 05th December, 2020. These were reported in 22 states (Nigeria Centre for Disease and Control [NCDC], 2020).

The researcher observed that despite the implementation of national measures to combat the pandemic, such as traffic restriction, closing manufacturing industries, closing schools and even locking down cities, the success or failure of these efforts is largely dependent on public behaviours, but it was observed that residence of Bauchi state are not complying with the recommended national measures to combat the pandemic, further it was observed that the security officers in the schools and hospital are always battling and forcing people to wear face mask when entering the schools or hospital premises. It is against this background that the researcher investigates the knowledge of prevention and control measures of covid-19 infection among residents of Bauchi state, Nigeria. This study is expected to answer the following questions by testing the formulated null-hypotheses

Do residents of Bauchi state have knowledge of social distancing for prevention and control measure of covid-19?

Do residents of Bauchi state have knowledge of wearing face mask in public for prevent and control measure of covid-19?

Do residents of Bauchi state have knowledge of hand washing as prevention and control measure of covid-19?

Do residents of Bauchi state have knowledge of covering one's mouth when sneezing or coughing as prevention and control measure of covid-19?

The following null hypotheses were formulated to guide the study:

Residents of Bauchi state will not have significant knowledge of social distancing as a prevention and control measure of covid-19

Residents of Bauchi state will not have significant knowledge wearing face mask in public as a prevention and control measure of covid-19

Residents of Bauchi state will not have significant knowledge of hand washing as a prevention and control measure of covid-19

Residents of Bauchi state will not have significant knowledge of covering one's mouth when sneezing or coughing as a prevention and control measure of covid-19

Method and Materials

Research design method was adopted for this study. Abiola, (2007) stated that survey research involves a clear definition of the problem, collection of relevant and adequate data, careful analysis and interpretation of the data and skillful or professional reporting of findings.

Population

The population of this study comprised all residents of Bauchi State in Nigeria. The population of the study area is approximately 4, 389,328 (NPC, 2006). The target population however comprised of all residents from the twelve selected political wards, totalling 9,650.

The samples for this study were selected among the residents (household) of Bauchi state Nigeria. The sampling techniques for this study consist of multi-stage sampling techniques which include: clustered into three senatorial districts, local government councils and their population; simple random sampling technique was used to select representative of local government areas (LGAs) and proportionate sampling technique was used to select representative political wards, proportionate sampling technique also was used to select 11.85 percent of respondents as sample size while systematic sampling technique was used to select respondents in each village under each ward.

A researcher's designed structured questionnaire titled "knowledge of prevention and control measures of covid-19 infection among residents of Bauchi state, Nigeria" (KPCMCQ) was used as instrument for data collection. The questionnaire was made up of two sections; section "A" is made up of five (2) Items which sought information on demographic information of the respondents, section "B" sought information on knowledge of social distancing as a prevention and control measure of covid-19, section "C" sought information on knowledge of wearing face mask as a prevention and control measure of covid-19, section "D" sought information on knowledge of hand washing as a prevention and control

measure of covid-19 while section “E” sought information on knowledge of covering one's mouth when sneezing or coughing as a prevention and control measure of covid-19.

For the instrument to be valid, three copies of the instruments were given to three experts in the field of Health Education. A reliability coefficient of 0.80 was obtained using test and re-test method from 30 residents in Dukku L.G.A, Gombe state and the result of the first administration was compared with the result of the second administration using Pearson’s Product Moment Correlation Statistics.

A total number of one thousand one hundred and forty-three (1143) questionnaire forms were administered to the selected respondents from the six Local Government Areas of Bauchi state with the help of four (4) research assistants which were fully briefed on how to administer and collect the questionnaire from the respondents.

The completed copies of questionnaire were collected, sorted, edited and coded. Data was processed and analyzed. The descriptive statistic of frequency counts and percentage was used to analysed demographic data obtained while an inferential statistic of Chi-square was used to analyzed null hypotheses 1,2,3 and 4. Alpha level of 0.05 was used as criterions to either retained or reject the null hypotheses.

Result

Hypothesis 1: Residents of Bauchi state will not have significant knowledge of social distancing as a prevention and control measure of covid-19.

Table 1: Inferential Statistics of Chi-square on Knowledge of Social Distancing as a Prevention and Control Measure of covid-19 of Bauchi State.

S/N	Items	YES (%)	NO (%)	Df	Cal x ² value	Critical value	Decision
1	Social distancing can prevent covid-19	1062 (92.9%)	81 (7.1%)	2	2036	5.991	Ho Rejected
2	Social distancing is mostly used in the schools to prevent covid-19	1041 (91.1%)	102 (8.9%)				
3	Social distancing can be apply in the market to prevent covid-19	990 (86.6%)	153 (13.4%)				
	Total	3093(270.6%)	336(29.4%)				

0.05 alpha level

The finding from the analysis of hypothesis 1 showed the calculated Chi-square value of 2036 against the critical value of 5.991 with degree of freedom of 2 at 0.05 alpha level. Since the calculated chi-square value was greater than the critical x^2 value, the null hypothesis was rejected, which means that, residents of Bauchi state significantly have the knowledge of social distancing as prevention and control measure of covid-19 as prevention and control measure of covid-19.

Hypothesis 2: Residents of Bauchi state will not have significant knowledge of wearing face mask in public as prevent and control measure of covid-19.

Table 2: Inferential Statistics of Chi-square on Knowledge of Wearing Face Mask in Public as Prevent and Control Measure of covid-19

S/N	Items	YES (%)	NO (%)	Df	Cal χ^2 value	Critical value	Decision
4	Wearing face mask in public involves prevent and control of covid-19	784 (68.6%)	359 (31.4%)	2	481	5.991	Ho Rejected
5	Wearing face mask is commonly used among residence in Bauchi state to prevent and control of covid-19	762 (66.7%)	381 (33.3%)				
6	Wearing face mask in public cost little and it is effective	789 (69.0%)	354 (31.0%)				
	Total	2335(204.3%)	1094(95.7%)				

0.05 alpha level

The analysis of the hypothesis 2 showed the calculated Chi-square value of 481 against the critical value of 5.991 with degree of freedom of 2 at 0.05 alpha level. Since the calculated chi-square value was greater than the critical χ^2 value, the null hypothesis was rejected, which means that, residents of Bauchi state have significant knowledge of wearing face mask in public as prevent and control measure of covid-19.

Hypothesis 3: Residents of Bauchi state will not have significant knowledge of hand washing as prevention and control measure of covid-19.

Table 3: Inferential Statistics of Chi-square on Knowledge of Hand washing as Prevention and Control of covid-19 among Residents of Bauchi State

S/N	Items	YES (%)	NO (%)	df	Cal x ² value	Critical value	Decision
7	Hand washing can prevent spread of covid-19	938 (82.2%)	205 (17.9%)	2	1298	5.991	Ho Rejected
8	Hand washing should be use to prevent and control of covid-19 among residence in Bauchi state	957 (83.7%)	186 (16.3%)				
9	Hand washing should be apply frequently when entry public place	975 (85.3%)	168 (14.7%)				
	Total	2870 (251.2)	559 (48.9%)				

0.05 alpha level

The finding from the analysis of hypothesis 3 showed the calculated Chi-square value of 1298 against the critical value of 5.991 with degree of freedom of 2 at 0.05 alpha level. Since the calculated chi-square value was greater than the critical x^2 value, the null hypothesis was rejected, which means that, residents of Bauchi state have significant knowledge of hand washing as prevention and control measure of covid-19.

Hypothesis 4: Residents of Bauchi state will not have significant knowledge of covering one's mouth when sneezing or coughing as prevention and control measure of covid-19.

Table 4: Inferential Statistics of Chi-square on the Knowledge of Covering one's mouth when sneezing or coughing as a Prevention and Control of covid-19 among Residents of Bauchi State

S/N	Items	YES (%)	NO (%)	df	Cal χ^2 value	Critical value	Decision
10	Covering one's mouth when sneezing or coughing is a prevention of covid-19	1092 (95.5%)	51 (4.5%)	2	1951	5.991	Ho Rejected
11	Covering one's mouth when sneezing or coughing can minimize the spread of covid-19 infection	1083 (94.8%)	60 (5.2%)				
12	Covering one's mouth when sneezing or coughing reduce the risk of covid-19 among residence in Bauchi state	977 (85.5%)	166 (14.5%)				
Total		3152(275.8%)	277(24.2%)				

0.05 alpha level

The finding from the analysis of hypothesis 4 showed the calculated Chi-square value of 1951 against the critical value of 5.991 with degree of freedom of 2 at 0.05 alpha level. Since the calculated chi-square value was greater than the critical χ^2 value, the null hypothesis was rejected, which means that, residents of Bauchi state have significant knowledge of covering one's mouth when sneezing or coughing as prevention and control measure of covid-19.

Discussion

The result was aimed at finding out the knowledge of prevention and control measures of covid-19 infection among residents of Bauchi state, Nigeria. The finding of this study revealed that residents of Bauchi state significantly have knowledge of social distancing as prevention and control measure of covid-19 as prevention and control measure of covid-19. This finding is in line with Masud *et al.* (2020) who carried out a study on knowledge of prevention of COVID-19 among the general people in Bangladesh which reported that 68.6% of the respondents knew that maintaining physical distancing and avoiding mass gatherings were measures of prevention of COVID-19. The finding of this study also is consistent with Siddiqui *et al.* (2020) who conducted a study on knowledge and practice regarding prevention of COVID-19 among the Saudi Arabian which reported that population the 357 respondents (82%) knew that COVID-19 can be transferred by shaking hands and avoided this, 333 respondents (79%) knew that they had to maintain a safe distance of at least one meter and kept this distance

The outcome of the study revealed that residents of Bauchi state have significant knowledge of wearing face mask in public as prevent and control measure of covid-19. This finding in line with Matuschek and Hausmann (2020) who pointed out that knowledge of wearing a face mask is an efficient hygienic tool to prevent the spread of a viral infection. Jeremy, Austin and Zdimal (2021) reported that knowledge of mask wearing among health workers reduces transmissibility per contact by reducing transmission of infected respiratory particles in both laboratory and clinical contexts

The findings of the study revealed residents of Bauchi state have significant knowledge of hand washing as prevention and control measure of covid-19. This finding is also aligned with Siddiqui, et al (2020) who conducted a study on knowledge and practice regarding prevention of COVID-19 among the Saudi Arabian and the result shows that out of the 443 respondents, 356 respondents (84%) knew they had to wash their hands for 20 seconds and did this as well to prevent spread of COVID-19. The findings of this study is in line with Richardson *et al.* (2020) who reported that the representative sample of 40,157 caregivers of eligible children aged 3–59 months, of which 36,914 (91.92%) reported that COVID-19 can be prevented through frequent hand washing.

The finding of this study revealed residents of Bauchi state have significant knowledge of covering one's mouth when sneezing or coughing as prevention and control measure of covid-19. This finding is corroborate with the report of Kupferschmidt and Cohen (2020) that covering one's mouth when sneezing or coughing is one recommended prevention measures of COVID-19. The finding in line with Siddiqui et al. (2020) who conducted a study on knowledge and practice regarding prevention of COVID-19 among the Saudi Arabian and the result also shows that 303 respondents (75%) knew that sneezing or coughing into the arm/elbow can prevent the spread of COVID-19 and were doing this as well.

Conclusion

Based on the findings of this study, the following conclusions were drawn:

Residents of Bauchi state significantly have knowledge of social distancing as prevention and control measure of covid-19.

Residents of Bauchi state have significant knowledge of wearing face mask in public as prevent and control measure of covid-19

Residents of Bauchi state have significant knowledge of hand washing as prevention and control measure of covid-19.

Residents of Bauchi state have significant knowledge of covering one's mouth when sneezing or coughing as prevention and control measure of covid-19

Recommendations

Based on the findings the following recommendations were made:

Government should intensify effort in ensuring that the knowledge of social distancing and covering one's mouth when sneezing or coughing as prevention and control measure of covid-19 is sustained through continuous public health enlightenment

Government should enforce law regarding the covid-19 protocol such as wearing face mask and using hand sanitizer.

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ASSESSING THE PRACTICE OF EXCLUSIVE BREASTFEEDING AMONG WORKING MOTHERS IN KOGI CENTRAL SENATORIAL DISTRICT, KOGI STATE

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Abstract

The focus of this study was on the assessment of the practice of exclusive breastfeeding among working mothers in Kogi Central Senatorial Zone, Kogi State. Cross-sectional survey design was used for this study. The population of this study is 11,700 working mothers in Kogi central senatorial zone. The sample size for this study is 1000. To achieve the stated objectives, a researcher developed questionnaire in a closed ended form was used for data collection. Multi-stage sampling technique was used for this study. The instrument was validated by jurors in the department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria. The data collected were analyzed using descriptive statistics, simple percentages and frequency table. The results of this study shows that working mothers in Kogi Central Zone, Kogi state were not exclusively breastfeed their babies and also, full time employment status and family members influence undermine the practice of exclusive breastfeeding. Therefore, on the basis of the above findings, the study recommended that government must guarantee workplace is free of harassment and discrimination against women who prefers to breastfeed their babies through appropriate mechanisms.

Keywords: Exclusive breastfeeding, infant nutrition, breast milk, working mother

Introduction

Over the last two decades, there has been a growing attention in the endorsement of exclusive breastfeeding as the recommended feeding practice for newborns. This, to a great degree, has been encouraged by increasing scientific substantiation on the significance of exclusive breastfeeding in reducing infant morbidity and mortality. Exclusive breastfeeding is the most efficient type of infant feeding for the first six months of life. The United States Breastfeeding Committee (USBC) and the American Academy of Pediatrics (AAP) declare that breastfeeding is the physiologically normal form of infant and child feeding (Labbok & Taylor, 2008; AAP, 2012).

As such, breastfeeding should be fostered and encouraged by health care professionals and public health campaigns in order to normalize it within our culture. Numerous organisations endorse breast milk as the optimal source of nutrition for infants (American Academy of Family Physicians [AAFP], 2008; AAP, 2012; USBC, 2009; United States Department of Health and Human Services [USDHHS], 2011; World Health Organization [WHO], 2001). These organisations support exclusive breastfeeding for the first six months of an infant's life for multiple reasons.

In resource inadequate settings where deprived and sub-optimal breastfeeding practices regularly result to child undernourishment which is a key cause of more than half of all child deaths (Sokol et al. 2007), exclusive breastfeeding is regarded as crucial for infants' continued existence. Undeniably, of the

6.9 million under five children who were reported dead globally in 2011, an estimated 1 million lives could have been saved by undemanding and accessible practices such as exclusive breastfeeding (WHO, 2012). Subsequently, the WHO and UNICEF (2020) have recommended exclusive breastfeeding for six months, followed by beginning of complementary foods and sustained breastfeeding for 24 months or more.

The practice of not giving breast milk has been connected with unexpected infant death syndrome and other neonatal morbidity and mortality. Breastfeeding can save premature infants from life intimidating gastro-intestinal diseases such as necrotizing enterocolitis. It lessens the occurrence of otitis media, severe bacterial infections such as meningitis, bacteremia, lower respiratory infections and botulism (Feldman, 2018).

In developing countries, there is a tendency to extend breastfeeding for longer periods in time. In Nigeria, women breastfeed for a median duration of 22 months with 53.4% of women breastfeeding their young babies. Regrettably, the rates of exclusive breastfeeding are less than overall breast feeding rates due to the practice of giving complementary feedings. The addition of additional foods and liquids causes higher rates of diarrheal illness and higher mortality rates (Aidam, Perez-Escamilla & Lartey, 2015). Infants and children in developing countries are inexplicably affected by life threatening diseases, poor health care, and lack of potable water, malnutrition, poverty, and war. In an endeavour to give these children a chance at survival, it is imperative that breastfeeding be promoted and supported by government organizations and the medical establishment.

The benefits of exclusive breastfeeding for both mother and child are universally acknowledged by health providers, global health agencies, and lay people. In Nigeria, an estimated 84% of children younger than 2 months are being exclusively breastfed. By age 4 to 5 months, nevertheless, only 49% continue to receive exclusive breastfeeding. Many attempts and hard work to promote exclusive breastfeeding have achieved less than desired outcomes and in order to comprehend and appreciate the dynamics of the practice, a number of studies have been conducted in Nigeria and in many parts of the world. Much of these studies have focused on factors and barriers to exclusive breastfeeding (Aidam et al. 2005; Otoo et al. 2009; Senarath et al. 2010). Several studies have looked at the health outcomes of exclusive and non exclusive breastfeeding (Duncan et al. 1993; Coutsooudis et al.1999; Kramer, 2003); whereas others have also considered the prospective position of husbands in breastfeeding decisions (Arora et al.2000; Susin, et al. 2008). Much less attempts however, have been made at examining the practice of exclusive breastfeeding among professional working mothers particularly in sub Saharan Africa. This research is therefore an undertaking to realise the present knowledge gaps.

The main objective of the study was to examine the practice of exclusive breastfeeding among professional working mothers in Kogi Central Senatorial District of Nigeria. The specific objectives of the study were the following:

1. To examine the sources and knowledge of exclusive breastfeeding information among professional working mothers Kogi Central Senatorial District.
2. To determine if professional working mothers know the benefits of exclusive breastfeeding practice.
3. To assess if employment status affect exclusive breastfeeding practice among professional working mothers.
4. To identify the extent of exclusive breastfeeding practice among professional working mothers.

The main research question for the study was what is the rate of practice of exclusive breastfeeding among professional working mothers in Kogi Central Senatorial District of Nigeria?

Specific questions were the following:

1. What are the sources and knowledge of exclusive breastfeeding information among professional working mothers in Kogi Central Senatorial District?
2. Do professional working mothers know the benefits of exclusive breastfeeding practice?
3. Does employment status affect exclusive breastfeeding practice among professional working mothers?
4. What is the extent of exclusive breastfeeding practice among professional working mothers?

Method and Materials

In this study, the design used was cross-sectional, with data collected at a single point in time. Cross-sectional study is straightforward in design and is designed at finding out the prevalence of a phenomenon, problem, attitude or issue by taking a picture or cross section of the population.

The population for this study consisted of (11,700) professional working mothers, aged 40 or younger, who were in full-time employment and working in Kogi Central Senatorial District of Nigeria.

The sample size for this study is 1000 which was purposively sample. Purposive sampling was used to select the professional working mothers in Kogi Central Senatorial District. The objective is to choose a group of participants who possess the characteristics of the population of interest so that the study results can be generalized. Random sampling was used in this study to increase the reliability of the survey estimates for obtaining samples that are unbiased and representative of the target population. Sample size of 1000 was used in this study. The instrument was validated by three (3) experts in the department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria, their correction was incorporated. Inclusion and Exclusion Criteria: In order to examine exclusive breastfeeding practice the study only integrated mothers with infants over 6 months postpartum and mothers with infants under 24 months when maternal recall exclusive breastfeeding practice is to be expected to be reliable and valid. Mothers of preterm children, and children with multiple gestations, birth defect or chronic disease were not involved in the study.

A questionnaire was used in this study because it could be administered to larger numbers of respondents concurrently, with uniform instructions and explanations. The respondents were able to complete the questionnaire in a confidential setting, therefore diminishing possible bias connected to researcher presence, and devoid of instant time constraints.

Results and Discussion

Age of Respondents

One thousand professional working mothers (N= 1000) completed the questionnaire and Participants ranged in age from 20 to 40 years (see Table 1). Respondents within the ages of 31 - 35 constituted 40.6 %, and those between the ages of 26 - 30 were 30.4% and professional working mothers within the ages of 36 - 40 represented 22.5%. Professional working mothers within the ages of 26 - 35 constituted the majority of the respondents representing 71%.

Table 1: Age of Respondents

Responses	Frequency [F]	Percentage %
20-25	65	6.5
26-30	304	30.4
31-35	406	40.6
36-40	225	22.5
Total	1000	100

Source: Field Survey, 2021

Educational Qualification of Respondents

From table 2, respondents sampled for the study, 37% of them have possessed bachelor's degree, 32% of the respondents had various Diplomas, and 18.5% had certificates for various professional requirements and masters qualifications and above were 12.5%. It is assumed respondents' educational status would provide in-depth information regarding the practice of exclusive breastfeeding among professional working mothers.

Table 2: Educational Background of Respondents

Responses	Frequency (F)	Percentage %
Certificate	185	18.5
Diploma	320	32
1st Degree	370	37
Master's and above	125	12.5
Total	1000	100

Source: Field Survey, 2021

Categories of Respondents' Occupation

Various categories of professional working mothers were selected to be part of this study and answer the questionnaire. According to the results, almost all the various occupations that can be found in Kogi Central Senatorial District both public and private were involved in the study.

Table 3: Categories of Respondents' Occupation

Response	Frequency	Percentage
Education	130	13
Health	120	12

Banking, Finance and Insurance	115	11.5
Telecommunication	55	5.5
Media/ Information	85	8.5
Civil Societies	90	9
NGO's	70	7
Ministries	170	17
Security Agencies	85	8.5
Others	80	8
Total	1000	100

Source: Field survey, 2021

Respondents' knowledge on Exclusive Breastfeeding

All the professional working mothers (100%) in the study were found to be well knowledgeable on exclusive breastfeeding practice and were able to defined exclusive breastfeeding according to the WHO definition as 'that the infant receives only breast milk. No other liquids or solids are given - not even water - with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines'.

Sources of Exclusive Breastfeeding Information

All the respondents said that the main source of exclusive breastfeeding information originated from health care professionals when they visit clinics, health centres and hospitals. To a great extent of the sources of exclusive breastfeeding information from health care professional is targeted at nursing mothers particularly during postpartum. Apart from the health care professionals, the respondents said they learnt exclusive breastfeeding from reading, mass media, and through school, friends and other relatives.

Benefits of Exclusive Breastfeeding

From the analysis of the data, all the respondents were able to state three or more benefits of exclusive breastfeeding. They said exclusive breastfeeding practice protects against common and widespread childhood diseases such as diarrhoea and pneumonia, reduces infant mortality and may also have longer-term benefits such as lowering mean blood pressure and cholesterol, and reducing the prevalence of obesity and type-2 diabetes. Again, others stated that exclusive breastfeeding contributes to the health and well-being of mothers owing to the fact it supports to space children, decreases the risk of ovarian cancer and breast cancer, and maintains family' income.

Barriers to exclusive breastfeeding among professional working mothers.

Respondents were asked to state the barriers that undermine them in terms of practicing exclusive breastfeeding. From table 4, it can be found 90.5% of the respondents said that the main challenge that hinders exclusive breastfeeding practice is their working status and 7.5% stated family members influence them to follow the old practice of breastfeeding with water and other food supplements.

In this study, work status and family members' influence on exclusive breastfeeding negatively affect the efforts and decisions for professional working mothers to exclusively breastfeed their babies in spite of the adequate information on exclusive breastfeeding feeding and its benefits for the babies and mothers themselves.

Table 4: Barriers to Exclusive Breastfeeding Working Mothers

Responses	Frequency	Percentage
Work status	905	90.5
Family influence	75	7.5
Mother's health	15	1.5
Others	5	0.5
Total	1000	100

Source: Field Survey, 2021

Challenges Working Mothers Face at Workplaces

Professional working mothers are supposed to return to work after they have exhausted their three months maternity leave. From Table five, more than half of the respondents (51%) said they leave their children at home to their families due to work pressure and go to breastfeed their children when they have break or family members regularly bring the children to the Work places for them to breastfeed their babies. Furthermore, 30.5% of the respondents said they do not have adequate time to breastfeeding their children and 17.5 % said there are no proper place for them to breastfeed their children at their various work places.

Table 5: Challenges Working Mothers at Workplaces

Responses	Frequency	Percentage
Inadequate time at work to breastfeed	305	30.5
No proper place to breastfeed	175	17.5
Child at home due to work pressure	510	51
Others	10	1
Total	1000	100

Source: Field Survey, 2021

Exclusive Breastfeeding practice among Professional Working Mothers

In line with the main objective of the study, respondents were asked to state if they were able to practice the recommended exclusive breastfeeding according to the World Health Organisation standard with their current breastfeeding babies and with their various professional works. From Table 6, 48% of professional working mothers were able to practice exclusive breastfeeding and 52% could not practice exclusive breastfeeding according to WHO recommended practice of exclusive breastfeeding. Even though it is time and again thought that a breastfeeding woman with sufficient information on exclusive breastfeeding and its rewards for the children and breastfeeding mothers will be more right to practice it than their counterparts with less information. This study confirms earlier research findings that type of work and hours of work have shown to influence breastfeeding (Visness & Kennedy, 2020).

Table 6 Exclusive Breastfeeding Practice

Response	Frequency	Percentage
Yes	480	48
No	520	52
Total	1000	100

Source: Field survey, 2021

Conclusion

This study was to examine the practice of exclusive breastfeeding among professional working mothers in Nigeria. From this study, it can be concluded professional working mothers find it extremely difficult to exclusively breastfeed their babies according to the recommendation of World Health Organisation. Professional working mothers are well knowledgeable on exclusive breastfeeding practice with its benefits but their full time employment status and family members' influence undermine and impede the practice of exclusive breastfeeding. Even though initial breastfeeding is fairly common in developing worlds, exclusive breastfeeding for 6 months is regularly not the normal practice.

Suggestion for further Studies

Future research ought to investigate the effect of policies ensuring and guaranteeing breaks from work for professional working mothers to breastfeeding babies particularly the time frame for exclusive breastfeeding.

Recommendations

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

1. The government must guarantee that workplace is free of harassment and discrimination against women who prefer to breastfeed their babies through appropriate mechanisms.
2. Ministry of Employment must address women's right to breastfeed in the workplace as an unambiguous constituent of workplace training and ethics.
3. Employers must be legally fulfil to provide breastfeeding and expressing facilities at the work place to be used by breastfeeding employees and these facilities have to be hygienic, comfortable and private and include hand washing and milk storage facilities.
4. Professional working mothers must initiate and arrange childcare for the infant close to the mother's workplace to enable their babies to be brought to the workplace or breastfeeding mothers to go to the childcare facility at breastfeeding period.
5. Healthcare providers should continue to embark on educating general populace regarding the significance of exclusive breastfeeding to remove family negative influence particularly women in their prenatal period.
6. In order for mothers to exclusively breastfeed their babies, mothers require to appreciate the reasons that exclusive breastfeeding is best and they require to get positive messages about exclusive breastfeeding from friends and family members.

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CAUSES OF WATER-BORNE DISEASES AMONG INTERNALLY DISPLACED PERSONS IN ADAMAWA STATE, NIGERIA

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Abstract

The study examined the causes of water-borne diseases among internally displaced persons in Adamawa State, Nigeria. The purpose of the study was to examine the difference in the causes of water-borne diseases based on camp location. A descriptive research design of survey type was adopted. The population for the study comprised all adult IDPs in State, Nigeria. A sample of three hundred and twenty-nine (329) respondents selected using multi-stage sampling was used for the study. A researcher developed questionnaire, validated and tested for reliability was used for data collection. Data was analysed using frequency counts and percentages to answer the research questions while, t-test was used to test the hypothesis for the study at 0.05 alpha level of significance. Results show that; there is no significant difference in the causes of water borne disease based on camp location (Cal. T value = 31.69 > p.value=0.05 @ df=1.96) in IDPs camps in Adamawa State, Nigeria. Findings revealed that that shortage of water for drinking, poor hygienic living condition, inadequate toilet facilities and lack of waste disposal are the common causes of water-borne diseases in IDPs camps in Adamawa State. The researchers recommended that, health education on the importance of maintaining personal and environmental hygiene should be emphasised by health workers and health educators working in the various camps. This will go a long way in curtailing water-borne diseases in the camps.

Key words: Water-Borne Diseases, Insurgencies, Internally Displaced Persons, Personal hygiene, Portable Water

Introduction

Peace and security are unarguably part of the essential ingredients needed for growth and development of any nation, without which there can be no meaningful development. Hence, hindrances to peace and security such as terrorism, communal clashes, religious crises and ethnic clashes invariably affect the achievement of sustainable development of a nation. There is no doubt that terrorism is the biggest threat to global peace and sustainability in recent times. The incidence of terrorism has been on a steady rise since October 2010. Few years back, terrorism seemed to be restricted to few regions such as Northern Ireland, Spain and some other areas of the Middle East. However, since September 11, 2001, with the destruction of Twin Towers in New York, it has escalated into global phenomenon (Global Report on Internal Displacement, 2016). This has led to incessant insurgencies all over the world, especially in Africa and Middle-East.

The world is witnessing constant mass movement and migration of people either from one country to another as refugees or from one location to another in the same country as Internally Displaced Persons (IDPs). Often times, such movement is brought about by unfavourable environmental conditions such as conflict, terrorism or violent attacks, insurgencies, political unrest or persecution. Globally, 27.8 million people were internally displaced, in 2015, translating to 66,000 people per day (Global Report on Internal Displacement, 2016).

Peter (2012) described insurgency as a rebellion against constituted authority, when those taking part in the rebellion are not recognised as belligerents (lawful combatants). An insurgency can be fought via counter-insurgency warfare. It may also be opposed by measures to protect the population, and by political and economic actions of various kinds aimed at undermining the insurgents' claims against the incumbent regime (Peter, 2014).

The Internal Displacement Monitoring Centre (2018) defined internal displacement as the forced movement of people within the country. According to Ladan, (2012) internal displacement is the greatest tragedy of our time. The internally displaced persons are among the most vulnerable people in the world because of the unfavorable conditions they are usually exposed to. The Internally Displaced Monitoring Centre estimated that there were two million, one hundred and fifty-two thousand (2,152,000) IDPs in Nigeria as at 31st December, 2015 due to insurgency. These IDPs notably found across 13 states of the country, cover about 27 Local Government Areas. This estimate does not include the increasing cases of IDPs due to communal clashes and the incessant clashes between herdsmen and farmers in several Nigerian towns and villages (Nigeria Internally Displacement figures, 2016). It is so unfortunate that, apart from challenges of poverty, sectarian, economic recession, political crisis and Niger-Delta Militancy, Nigeria is currently facing a deeper and serious challenge of terrorism, particularly in the North Eastern region of the country (Felix, Okonette, & Angela, 2014).

Water-borne diseases are among one of the major public health problems in developing countries, they are the leading cause of morbidity and mortality in all age groups particularly in children under 5 years. Water associated diseases are a significant cause of morbidity and mortality worldwide and are a barrier to sustainable development in many developing countries. The situation is particularly serious in many war affected areas, such as internally displaced persons (IDPs) and refugee camps, (Demena, Workie, Tadesse, Mohammed & Gebru, 2003).

Water diseases are caused by a variety of microorganisms, such as bacteria, protozoa, viruses and fungi and others. Examples are Diarrhea, dysentery, cholera, typhoid fever, infectious hepatitis etc. Water-borne diseases are also caused by pathogenic microorganisms that most commonly are transmitted in contaminated fresh water. Infection commonly results during bathing, washing, drinking, in the preparation of food, or the consumption of food thus infected (Adam, Bodunrin, Jammal & Afrah, 2017).

There are various forms of water-borne diseases. Diarrhoea is the most prominent example, and affects mainly children in developing countries. According to the World Health Organisation (2015), such diseases account for an estimated 4.1% of the total DALY global burden of diseases, and cause about 1.8 million human deaths annually. The mortality rate associated with water-borne diseases was more than 5 million people in a year. Annually, about 1.6 million children, less than 5 years old, die due to water-borne diseases of which 84% live in rural area.

From November 2017 to mid-August 2018 Borno and Adamawa States had seen the movement of nearly 190,000 individuals. This exacerbates a situation that is responsible for the spread of water-borne diseases (Agusiegbe, 2019). Similarly, lack of water for washing also put peoples' lives at risk of water-borne by faecal-oral route. Faecal-oral diseases can proliferate rapidly sometimes to epidemic proportions when people in crowded conditions lack clean water for hygiene and sanitation (Nicole, 2015). Poor water, hygiene and sanitation conditions in internally displaced persons camps are responsible for outbreak of water-borne diseases such as cholera, diarrhoea, typhoid fever and dysentery (World Health Organisation, 2013). It was also revealed that more than 5.6 are at risk of contracting water-borne diseases such as cholera and diarrhoea infections, as the rainy season begins in the conflict affected area, around Lake Chad (United National International Children Emergency Fund, 2017).

In North-East Nigeria, 5,365 people were affected by cholera, with 61 deaths in 2017, while 12,643 were affected in 2018 with 175 deaths (UNICEF, 2019). In the same vein, children living in countries affected by conflict are, on the average, almost three times more likely to die from diarrhoeal diseases caused by lack of safe water, sanitation and hygiene due to violence, (UNICEF, 2019). UNICEF (2019) further pointed out that more people die due to water-borne and related diseases than bullet. Without water, people are at risk of malnutrition, typhoid fever, cholera and poliomyelitis (UNICEF, 2019).

The researchers observed that the possibility of government, Non-Governmental Organizations (NGOs) and philanthropists to cater for the total needs of all IDPs is doubtful in view of the economic recession the country is passing through currently. The United Nations Office for Humanitarian Affairs 2015 estimated the number of IDPs in North-East Nigeria to be 98,416. Therefore, a lot of resources are needed from the government to cater for the needs of these people. It is not an exaggeration to say that, most IDPs needs are neither assessed nor addressed by government or international bodies. Those who live in camps receive relief materials mostly from NGOs and international donors. However, they often lack access to quality food and water, essential household items and health care facilities. The researcher's interaction with the IDPs revealed that many of them seem to suffer from water-borne diseases such as diarrhoea, cholera and typhoid due to inadequate potable water supply.

In order to expose the health problems and bring into limelight, possible solutions for the purpose of intervention, the study examined the causes of water-borne diseases among IDPs in Adamawa State, Nigeria. The study examined the causes of water-borne diseases among Internally Displaced

Persons in Adamawa State, Nigeria with a view to expose the health problems and bring into limelight, possible solutions for the purpose of intervention.

Method and Materials

A descriptive research design of survey type was adopted for this study. The population for this study comprised all registered IDPs in government owned camps in Adamawa State with a population of 2298, from the two existing camps in the State, Malkoli IDP camp with a population of 1025 and Guril IDP camp with a population of 1273. Only adults IDPs of age 18 years and above were purposively selected. This category of respondents was used because they are old enough to respond to the items of the questionnaire and will be able to relate their health issues to the researcher. The samples were selected through multi-stage sampling procedure of purposive, proportionate and systematic sampling techniques as follows:

Stage 1: Purposive sampling technique was used to select the only two government approved IDPs camps in Adamawa State.

Stage 2: Proportionate sampling technique was used to select 329 IDPs in the selected camps. According to Research Advisor (2014), when the population of the study is 2,298, the sample should not be less than 329. Therefore, 329 IDPs were deemed appropriate for the study, this amounting to 14% of the IDPs.

Stage 3: Systematic sampling technique was used to select every third person on the row during the health talk at the clinic.

A researcher structured questionnaire was used to obtain quantitative data for the study. The instrument was tagged "Causes and Prevalence of Water-borne Diseases among IDPs (CPWDIDPs)". The instrument was divided into two sections; A & B. Section A elicited information on demographic data of the respondents; while section B consisted of items in relation to water-borne diseases. A four point modified Likert rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) was adopted to indicate the degree of agreement or disagreement of the respondents to all the items generated in the questionnaire. The instrument was constructed in both English and Hausa languages, in order to afford the non-literate respondents the opportunity to understand its content. The instrument was validated by three experts in related fields. Their suggestions and corrections were incorporated into the final draft of the instrument. The reliability of the instrument was ascertained using a split-half method. Thirty-three copies of the instrument were administered to thirty-three (33) respondents in Wassala IDPs camp, Abuja, which was not part of the study area. The items were split into equal halves. That is, even and odd numbers. Pearson Product Moment Correlation was used to compare the two results. The results showed a correlation coefficient of 0.73r, which clearly showed that the instrument was reliable enough to be used for the study.

Data was collected by the researcher with the help of two (2) trained research assistants. Ethical approval for the study was obtained from the National Emergency Management Agency. Permission was equally obtained from the officer in-charge of the clinic to carry out the study. The consent of respondents was obtained and the researcher, in company of the two (2) trained research assistants administered the instrument on the selected respondents.

The completed copies of the questionnaire were collected, collated, coded and analysed. Descriptive statistics of frequency counts and percentage, Freedman Mean Rank Order and test of statistics were used to test the postulated null hypotheses at 0.05 alpha level of significance.

Results

The results presented was based on the data collected from the respondents, and are presented as follows:

Table 1: Summary of Frequency and Percentage of Response on the causes of water-borne diseases in IDPs camps in Adamawa State, Nigeria

S/N	Question Items	SA	A	D	SD
	There is shortage of water for drinking and other daily activities in the camp which favours the spread of water-borne disease	164 (49.8%)	98 (29.8%)	43 (13.1%)	24 (7.3%)
	There are poor hygienic living conditions in the camps which can favour the spread of water-borne diseases	112 (34.0%)	109 (33.1%)	80 (24.3%)	28 (8.5%)
	There are no adequate toilet facilities in the camps, therefore, people result to open defecation	83 (25.2%)	131 (39.8%)	83 (25.2%)	32 (9.7%)
	No proper handling of food by food handlers in the camps	164 (49.8%)	98 (29.8%)	43 (13.1%)	24 (7.3%)
	There are no improved waste disposal facilities in the camps	91 (27.7%)	106 (32.2%)	106 (32.2%)	26 (7.9%)
	Average Score	231(70.2%)		97.8 (29.7%)	

Table 1 revealed that 262 (79.6%) respondents agreed that shortage of water for drinking in the camps favour the spread of water-borne diseases. The table also revealed that 221 (67.1%) respondents agreed that poor hygiene living conditions favours the spread of water-borne diseases. A critical examination of the table also shows that 214 (65.0%) respondents agreed that inadequate toilet facilities in the camps, which resulted into open defecation is also a cause of water-borne disease, a total of 262 respondents (79.6%) agreed that improper handling of food by food handlers results into water-borne diseases in the camps. Majority of the respondents 197 (59.9%) also submitted that improper disposal of waste (human and other wastes) is responsible for cases of water-borne disease in camps.

Hypotheses Testing

H₀2: There is no significant difference in causes of water-borne diseases among IDPs camps in Adamawa State, Nigeria based on camp location.

Table 2: t-test Analysis showing the difference in the causes of water-borne diseases in IDPs camps in Adamawa State

Camps	N	Mean	Standard deviation	df	t-val	Sig (P)
Guril IDPs camp	180	5.51	.988	327	31.69	0.91
Malkoli IDPs camps	149	9.12	1.071			

(table value=1.96, p-value<0.05)

Table 2 revealed the summary of t-test analysis on the difference in causes of water-borne disease among IDPs in Adamawa State based on camp location, the table revealed that the calculated p-value of 0.91 is greater than 0.05 alpha level of significance, while the cal. t value is 31.69 >1.97. The hypothesis which stated that there is no no significant difference in causes of water-borne diseases among IDPs camps in Adamawa State, Nigeria based on camp location is therefore retained. This implies that the causes of waterborne diseases in IDPs camp in Adamawa State are similar.

Discussion

Findings from the hypothesis revealed that, there is no significant difference in the causes of water-borne diseases among IDPs camps in Adamawa State, Nigeria based on camp location. The finding is similar to that of Agusiegbe (2019) who revealed that from November, 2017 to mid-August, 2018, Borno and Adamawa States had seen the movement of nearly 190,000 individuals. This exacerbated a situation that is responsible for the spread of water-borne diseases. Similarly, Nicole (2015) observed that, lack of water for washing also put peoples' lives at risk of water-borne by faecal-oral route. Faecal-oral diseases can proliferate rapidly sometimes to epidemic proportions when people in crowded conditions lack clean water for hygiene and sanitation. Furthermore, WHO (2013) reported that poor water, hygiene and sanitation conditions in internally displaced persons camps are responsible for outbreak of water-borne diseases such as cholera, diarrhoea, typhoid fever and dysentery . The result was further supported by the report of UNICEF (2017) who revealed that more than 5.6 people are at risk of contacting water-borne diseases such as cholera and diarrheal infections as the rainy season begins in conflict affected areas.

Conclusion

Based on the finding of the study, it was concluded that, shortage of water, poor hygienic condition, inadequate toilet facilities are the causes of water-borne diseases in IDPs camps in Adamawa State, Nigeria.

Recommendations

Based on the conclusion drawn, the following recommendations were made:

Health education on the importance of keeping personal and environmental hygiene among IDPs should be emphasised by health workers and health educators working in the camps. This will go a long way in curtailing water-borne diseases in the camps.

Awareness should be created by health workers on the ways to avoid attitude and practice that will favour the spread of water-borne diseases among IDPs in the camps.

Provision of adequate water supply to meet the demand of the IDPs by government and non governmental organisations.

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DETERMINANTS AND UTILISATION OF MATERNAL AND CHILD HEALTH (MCH) CARE SERVICES AMONG WOMEN OF CHILD BEARING AGE

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Abstract

This study examined the determinants and utilisation of maternal and child health (MCH) care services among women of child bearing age. The determinants were maternal age, maternal educational background and residential location in the utilisation of available MCH care services comprising of blood test, urine analyses, routine immunisation, personal hygiene and exercise during antenatal visits in pregnancy and postnatal visits after birth. It was concluded that antenatal visits during pregnancy should be encouraged to help detect when pregnancy is at risk. It was also concluded that Health care providers should emphasize the need to take babies for post-natal immunisation, as babies from 0-5 years needs to be immunised at regular intervals before reaching their fifth birthday and it is necessary to discourage the use of non-prescribed drugs on children when they are ill, rather they should be taken to health facility for proper diagnosis. It was recommended among others that women should be enlightened on care of pregnancy and safety measures that ensures safe delivery.

Keywords: maternal health, child health, determinants, utilization, care services, women of child bearing age

Introduction

The concept of family health encompasses maternal and child health, family planning, nutrition and health education had gained wide acceptance. Family health was considered an ‘approach whereby an effort is made to improve the health of the various individual in the family through multidisciplinary services and thus influence society as a whole’ (WHO, 2014). Maternal and Child Health (MCH) was one of the priority programmes established by the World Health Assembly in its first convention held in 1947. Maternal and Child Health services were almost entirely limited to emergency curative treatment and did not include preventive care. However, Sacksena and Sheldon (2012) observed that MCH should not be considered as a specialized, separately administrative service, but as an integral part of the total health. This is especially true where such hazards exist as poor sanitation, malnutrition and communicable diseases. These underline many of the conditions dealt with when individual care is given to a mother or infant.

Abdallah (2010) reiterated the need for appropriate health care services that will enable women to go safely through pregnancy and childbirth and produce a healthy infant. Maternal care includes care during pregnancy and should begin from the early stages of pregnancy. Women can get antenatal care services either by visiting a health centre where such services are available or from health workers during their domiciliary visits. The former gives an idea about the voluntary utilization of the services by women while the latter is related to the quality aspect of the services. One of the most important components of

antenatal care is to offer information and advice to Women about pregnancy related complications and possible curative measures for the early detection and management of complications. Health problems confronting the world today are caused by the actions and inactions of the people. In the developing or less developed countries, communicable diseases, high rate of infant and maternal mortality are largely due to the inactions of people to get themselves good housing, good supply of drinking water, not utilizing available health services, for example, pregnant women not utilizing antenatal care services, this is an integrated and multidisciplinary services formally adopted as a strategy in 1978 during the Declaration of Alma Ata. The declaration made Primary Health Care the major strategy for achieving Health for All by the year 2000 and beyond (WHO, 2000).

In September 2000, the largest-ever gathering of Heads of States ushered in the new millennium by adopting the millennium Declaration. The Declaration, endorsed by 189 countries, was then translated into a roadmap, setting out goals to be reached by 2015 thus,

- i. Eradicating extreme poverty and hunger
- ii. Achieve universal primary education
- iii. Promote gender equality and empower women
- iv. Reduce child mortality
- v. Improve maternal health
- vi. Combat HIV/AIDS, malaria and other diseases
- vii. Ensure environmental sustainability
- viii. Develop a global Partnership for development

Also the Alma Ate declaration of Primary Health Care integrated seven (7) Basic components, namely;

- Education on prevailing health problems and the methods of Preventing and controlling them;
- Promotion of food supply and proper nutrition;
- Adequate supply of safe water and basic sanitation;
- Maternal and child care, including family planning;
- Immunisation against the major infectious diseases;
- Appropriate treatment of common diseases and injuries; and
- Provision of essential drugs (WHO 1994).

Attempt by humans to preserve and nurture the human race is as old as the history of human existence. One of such attempts is the provision of mother and child health care following the 1978 Alma-Ata Declaration by World Health Organization. WHO (1994) identified Maternal and Child Health (MCH) as promotive and preventive health care specifically designed for mothers and children. In most developing

countries, mothers and children constitute up to two-thirds of the population of an average district, they also constitute the biological vulnerable groups (WHO, 1994). Hence, mother and child health services constitute an important area of health care. Further services may be added to the concept of MCH activities depending upon local needs. For example, nutrition rehabilitation centers, mother craft classes and demonstration, vegetable gardens and adult literacy, especially, female literacy has an important bearing on the health of the family and several countries like Uganda, Kenya, and Malaysia have integrated programmes of adult literacy with MCH services.

Maternal and Child Health services according to WHO (2000) are aspects of modern health care specifically designed for the health promotion of the mother and child. These services involve promotive, preventive, curative and rehabilitative health care for mothers and children. The benefits of these services to the nation, community and individuals are enormous. According to Loudon (2000), Women were most commonly in their mid-twenties when they married, and could expect the birth of their first child twelve to thirteen months later. Motherhood was considered the highest calling for a married woman, but the unmarried mother was subject to moral, economic, and social censure. Poor, unmarried mothers were on occasion driven to commit infanticide, but the harsh penalties for such a crime were not always invoked. Howell, Egorova, Janevic, Balbierz, Zeitlin, Hebert (2017) in addition to this stated that, MCH services is a channel of taking health care to a greater proportion of the population. According to Howel et al (2017), women and children constitute 68 percent of the population in any developing country including Nigeria. Maternal Child Health services thus guarantee healthy citizens. Chandra, Copen and Stephen (2013) also claim that MCH services help to reduce Ante-natal deaths and disabilities which add to the global burden of pregnancy and pregnancy related diseases. According to him, infants do not die for most parts from diseases of childhood which are preventable but in most cases because of conditions arising while they were still in their mother's womb. This can be prevented by simple intervention during pregnancy, delivery and immediately after birth.

For benefits of MCH services to accrue to the nation and community and individuals, it requires that the services must be utilised in full.

Available MCH Care Services

Antenatal

1. Pregnancy examination
2. Blood test
3. Urine analyses
4. Routine immunization
5. Antenatal medication
6. Nutritional advices
7. Dressing codes
8. Personal hygiene
9. Exercises

Post natal

1. Routine immunization at birth
2. Routine immunization at 6 weeks
3. Routine immunization at 10 weeks
4. Routine immunization at 14 weeks
5. Routine immunization at 9 months

Many people are reluctant to make use of medical services, largely due to ignorance or cultural beliefs, but other factors play a part too. For example, health centers and sub-centers stand out as different from other constructions and dwellings in rural areas. Their style of construction, roofing and the finish are different and most are fenced in. The health workers inside them are in uniforms and usually are people who were born in some other parts of the country. They have a different life style and rarely participate in the social and cultural life of the village. Naturally the villagers are reluctant to interact with them, this and many other factors have for long militated against the utilization of MCH in many localities (Howel et al, 2017).

The National Health Policy has as its goal to provide a level of health care that will enable Nigerians achieve socially and economically productive lives through a system of care — Federal Ministry of Health has PHC as parts of its components — Maternal and Child Health (MCH) care and family planning. The policy pointed out that since health development contributes to and result from socio-economic development, it should be seen as an essential component of the total package of social and economic development and as an instrument of social justice and national security (Chandra et al 2013). Only recently has this policy been linked to mother and child health status and behaviour. The health status of mother and child and the behaviour of mother have been acclaimed to be directly related to societal progress (WHO, 2000).

Healthy Families America (2013) observed that relatively little is known however, about the concept of MCH as the key to progress in reproductive health. The concept addresses the mother's ability to manage the many competing demands on her as she appreciate the value accrue in using health care services during pregnancy, understands the virtue of safe motherhood and prepare the stage for safe delivery. Several studies outside Nigeria including WHO (2000) in studies conducted on Trends in Reproductive and Family Health in the Western Pacific have shown how MCH services utilisation pattern can influence evaluation in health care provision and utilisation; and how socio-demographic factors such as age, education, residential location and so on, can influence utilisation of MCH services. Even though several studies have been conducted on reproductive health, there is paucity of data on MCH care services as influenced by socio-demographic factors as the basis for decision-making guiding health policies in Nigeria. Little attention has been given to practices of women in the community as they prepare to bear children and provide care for the child.

Maternal age

Womens' health literature is filled with observations about "adolescents" and "young adults". Their vulnerability caused by young age and their lack of access to health services put young adults at higher risk. The WHO (2000) defined adolescents as- the period from 10-15 years, and complement that broad category with term that extend the age range-"youth" 15-20 years, "young people," 10-20 years, and children," 0-18 years "young adults" has recently emerged as the preferred term but adolescents still remain widely used. In practice, these terms are often used with considerable variability and overlap. Harrison and Kobilnsky (2003) remarked in a study conducted in Bangladesh on the factor of age in reproductive health that in 1994 young people (10-24 years) were estimated at almost 1.5 billion or approximately one third of the world's population. The global teenage population (15-19 years) was estimated at 513 million, out of which 23 percent or 118 million are women. Over half the world's population is under age 25 and more than 80 per cent of the world's youth live in developing countries.

Harrison and Kobilnsky (2003) reported further that, in poorer countries more women bear children during their teenage years. For example, in Bangladesh, nearly two-thirds of women bear children by age 18 and one-fifth before age 15. While having a child immediately following marriage is a tradition in many societies meaning teen marriage and pregnancy may not only be highly desirable but even a societal necessity, the high number of teen-age pregnancies-wanted or unwanted is a major issue for all regions.

Several pre-1997 studies in the USA concluded that the adverse health consequences associated with child bearing were greater for younger women than for older women. However, Gerd, Ophelia, and Margareta (2000) observed that these studies did not control for socio-economic status and other related factors. He pointed out that studies, which find age differences, tend to find them in measures that are sensitive to socio-economic factors, rather than in biological constrained outcomes of labour and delivery.

Gerd, et al (2000) reported that the risk associated with pregnancy and childbirth among the 15-19 years age group was contrasted with those among the older women. Teenagers had a higher incidence of anaemia, but had higher incidence of hypertension, disorder or hospital admissions, and they were as likely as older women to have had a formal delivery. On the issue of healthcare use, studies reported by

Gerd, et al (2000) showed that adolescents with adequate prenatal care have outcomes as good or better than their older counterparts. But many adolescent women do not get adequate prenatal care. In the United State, 45, percent of young pregnant women do not consult their doctors until they are more than 3 months pregnant. In Britain the figure is 27 percent. The study in the United States of America revealed that 5.6 per cent of pregnant women under the age of 15 received no antenatal care compared with 1.5 per cent of women age 20-24 years. Nearly half of the under group began prenatal care in the 4-6 month period. The study showed that younger mothers in the United States are much less likely to receive prenatal care in the first trimester and much more likely to receive little or no care.

It is however, discernible that a minimum of data available on maternal age in association with - obstetrical complication and maternal death from - developing countries. The reason for the paucity of data is obvious. According to Gabrysch (2009), with over 60 per cent of pregnant women in developing countries delivering in their home, most complications including death related to childbirth go unreported.

United Nations (1994) reported that in Africa, marriage and first births occur in the teenage years in much of sub-Saharan Africa, and the relative risk of death before age five is about 46 per cent higher for children with mothers under 18 years. In urban areas, particularly, teenage pregnancy rates are likely to

rise in the near future due to the weakening of traditional society due to rural-urban drift. This position was re-echoed by Gabrysch (2009) who asserted that in the urban areas, development will bring about falling ages at menarche, rising women's age at marriage and a progressing emergence of adolescence.

Gabrysch (2009), also reported that young maternal age was found to have a strong negative effect on birth. However, the authors stressed that the entire effect of maternal age cannot be attributed to these mechanisms, because prenatal health care and perhaps other behavioural differences also play a role. It can be reasoned that distinguishing between the alternative explanations for the link between maternal age and MCH is crucial for the design of effective health intervention.

Maternal education

Formal education is of great importance for development of people (Child Health Dialogue, 1997). Education gives people skills and confidence, and makes them aware of the choices they can make in their lives. According to Octavio and Jose (2001) educated women are more likely to marry later, have their first pregnancy later and have fewer children. In addition, they are more likely to know about contraception, start to use it earlier and rely on modern rather than traditional methods. Educated women are more likely to attend antenatal care during pregnancy. It has been generally acclaimed that the condition of a woman's life affects her health and that of her children. Conversely, lack of access to education has been identified as a key barrier to women's advancement in society (Octavio and Jose 2001). He revealed that, an overview of demographic data across Africa revealed that female illiteracy rates were over 60 per cent in 1996, compared to 40 per cent for men. Certain countries have extremely high rates. Burkina Faso at 91.1 per cent, Sierra Leone at 88.7 percent, Chad at 82.1 percent and Guinea at 86.6 per cent.

Despite this, parents in these regions seem to still prefer to send boys to school, seeing little needs for education of girls. Takyiwaa (1998) further lamented that the few girls that ever made it to school hardly go beyond primary education. This trend has serious implication for health of the woman in her daily home business. Again, Takyiwaa (1998) reported that women's education beyond primary education is a reliable route to economic empowerment and long-term change in the status quo, as well as a determinant of family's health and nutrition, Takyiwa (1998) further stressed that education beyond ten or more years of school is a reliable predictor of lower fertility, improved infant survival, reduced maternal mortality, and enhanced levels of infant and child development and educational attainment. In the same vein, Stuart, LeVine, and Rowe (2009) posited that maternal literacy and schooling have been associated with a more efficient management of limited household resources, greater utilisation of available health care services, better MCH, lower fertility, and more child-centered caring behaviour. They maintained that maternal education raises awareness of the means to overcome problems and generates effective political demand.

In general, education has both a direct and indirect effect on health. The indirect effect is because increased education and literacy has a multiplying effect on development and income, which in turn contributes to improved health. The direct effect relates to the common observation that maternal education and literacy is associated with better utilisation of household resources and improved nutrition and health of children and other household members (Stuart, Howitz and John, 1999). Horwitz (2002) reported that those countries that have promoted education generally have a relatively better nutrition and health situation. He noted that primary and secondary education, especially of women, were found to be

important factors contributing significantly to the effectiveness and efficiency of the health care system in Chile, Costa Rica, and Cuba.

Residential location

Rural and urban residencies are also known for their varying characteristics and a corresponding impact on the health and living conditions of people. People living in the same place have the tendency to experience similar problems. In a related development Gerd, et al (2000) conducted a study on the accessibility to healthcare delivery in Indonesia and noted that the potentialities for women to manage or overcome these problems might vary according to location.

These differences do not only concern their access to resources, education and employment, but also access to a social network, which is important with respect to achieving health and self-reliance. Many of these differences reflect the variations in the living situation between the poor, mostly rural and uneducated, and the well to do, mostly urban and educated women. Milwood and Gezelius (2001) expressed that most rural settings are characterized by lack of infrastructure and services such as schools, electricity, health care facilities, water, markets, environmental sanitation, road and transport services.

These conditions have implications for living condition of the people. Lack of access to appropriate health care services caused by difficulties involving distance, transportation problems, cost, and poor quality of available care will exert strong impact on MCH relating to choice of treatment avenue (USAID, 2015). The effects of circumstances causing available care are especially striking, USAID, (2015) established that inadequate health care facilities, lack of essential resources, unskilled personnel, absence of an effective referral systems, and insensitive of health care providers are some of the many difficulties women in rural areas face when they look for institutional care. If health actions will need to be strongly supported, it would be logical to reason and understand that, where the resources are not available, the individual's perceived health behaviour patterns, whether good or bad are upheld and adopted to suit the prevailing circumstances. Reflecting an African setting, Takyiwaa (1998) pointed out that many African rural households usually impose individual responsibilities on women to meet their personal and often collective family needs. In such situations, women are expected to actively generate the means to meet the daily needs for themselves and their children. This has increased household pressure on rural women, raising the numbers of households in the poorest health categories.

The way forward

1. Regular antenatal visits during pregnancy should be encouraged as much as possible. This will help to detect when pregnancy is at risk so that necessary measures can be taken before any complications.
2. Pregnant women should also be enlightened on care of pregnancy safety measures that ensures safe delivery.
3. Pregnant women should be encouraged to go to the clinic when unusual signs and symptoms are felt or seen as the case may be.
4. Health care providers should emphasize the need to take babies for post-natal immunisation, as babies from 0-5 years needs to be immunised at regular intervals before reaching their fifth birthday.

5. It is also necessary to discourage the use of non-prescribed drugs on children when they are ill, rather for proper diagnosis.

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**ASSESSMENT OF KNOWLEDGE AND PRACTICE OF FAMILY PLANNING AMONG
WOMEN AT RURAL DWELLERS IN KOGI STATE, NIGERIA**

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Abstract

The focus of this study was on the assessment of Knowledge and practice of family planning among rural dwellers in Kogi State, Nigeria. Ex-post factor research design was considered adequate for this study. The sample size for this study is 384 according to Krejcie and Morgan table, a population of 72,844, a sample of 384 is considered adequate for the study. To achieve this stated objective, a closed ended researcher developed questionnaire was used for data collection. The population of this study is 72,844 rural dwellers women of child-bearing age (15-49) years old. 6 awards were sampled randomly and were analysed using statistical package for social sciences (SPSS) version 17 with a statistical tool of one-sample t-test results shows that rural women in Kogi State have significance knowledge of family planning. Also, the study revealed that rural women of reproductive age have poor practice despite their vast knowledge of family planning. Therefore, the study recommended that enlighten campaign through community mobilization should be carried-out by the state ministry of health in collaboration with local government health unit in changing their poor practice despite their knowledge.

Keywords: Knowledge, Practice, Family Planning, Rural Women Birth

Introduction

The act of giving birth is the most serious labour in the world, (Ademowore, 2011). The explosive increase in the nation's population emanating from indiscriminate of child-bearing, each pregnancy and health remains a risk fatal experience for hundreds of millions of women worldwide. Family planning is a means by which individuals or couples space the process of conception, pregnancy and childbirth in intervals, mutually determined by both husband and wife in order to have a desired number of children that they can conveniently cater for their needs (Delano, 2010).

According to Ahmed (2014), family planning is the factors that may be considered by a couple in a committed relationship and each individual involved in deciding if and when to have children, though rarely articulated.

World Health Organisation (WHO) (2012), estimates that 287,000 maternal deaths occurred in 2010, sub Sahara Africa (56%) and Southern Asia (29%) accounted for the global burden of maternal deaths. National Demographic Health Survey (NDHS) (2012), reported in Nigeria on maternal mortality rate, revealed that, 600,000 women died in agony every year. Also 585,000 women die during pregnancy and child births which is considerably higher in rural areas than the urban setting.

Orbete (2010), figure out an enduring positive association between family size and poverty incidence and security. It show how a large family size creates the conditions leading to greater poverty through its negative impact on household saving, labour force participation. It is stated that uncontrolled population growth is recognized as the single most important implementation to national development. Although, population growth is not the only problem dividing rich and poor countries. It is one important variable that has widened the gaps in growth in per capital income between developed and developing nations.

Knowledge is facts, information and skills acquires through experiences, and knowledge of family planning consisted of information of modern contraceptives, source of information about family planning, sex education in schools.

Odimegbu (2014), carried out a study on the knowledge and attitude among women of reproductive age in Surere LGA of Lagos state, A sample of 1830 pregnant women was drawn from none communities. It was discovered that 45% pregnant women were not aware of family planning methods, thereby do not practice. This suggests that, there is need to increase the dissemination of information on the issue of family planning in the rural setting in our country.

Practice are extent of utilization of the health information. Practice shows the level of adherence to healthful practice. Family planning tends to protect the family from health and economic challenges when it is been utilize by the spouses (Avang, 2018).

A survey of 600 Atyap (Kalaf) women aged between 15 - 49yrs by Avong (2012) in the study on perception and attitude towards Nigeria population policy. On family planning programme in Kaduna state. The study reveals that (98%) know about one form of modern methods of family planning or the other but they do not practice these modern methods of family planning due to fear of risk factors such as cancer, sterility, high blood pressure, weight increase or weight loss. This study suggest that, there is need to carried-out enlighten campaigns on bridging the gap between knowledge and practice of family planning methods among women of child-bearing age. Family planning is the act of making decision between couples on how many children to be borne and when to bare them. There is no doubt that Nigeria is the most populous country in Africa. The problem of many children per family has contributes to pervasive poverty, under-fed, and ill- educated. The frequent birth by mothers have been observed as an indicator of birth complications and accounted for thousands of death of women. National Demographic Health Survey (NDHS, 2012), estimate that 600,000 women died in agony monthly, while 585,000 women accounted for thousands of maternal deaths in the country, specifically higher in the rural areas. The following specific objectives were stated to guide the study: To assess the knowledge of family among rural women in Kogi state, Nigeria, To assess the practices towards family planning among rural women in Kogi state.

Methods and Material

Ex-post-facto research design was considered suitable for this study, since there will be no manipulation of information from the respondents by the researcher, hence the information needed is already in existence (Ademuwagun, 2012). The population of this study consist of 72,844 rural women of reproductive age (15- 49 years) in Kogi state. Nigeria based on data reveals by World Population Women data sheet (2016).

Sampling procedure adopted for this study was multi stage sampling technique. Simple random sampling technique was used to sample the required number of respondents, proportionate sampling technique was used to sample the respondents per sample areas; while purposive sampling technique was used to sample the respondents that met the criteria for the study. The instrument was validated by three (3) jurors from the department of Human Kinetics and Health Education, Ahmadu Bello University, Zaria. The instrument is reliable because the pilot study conducted showed the reliability coefficient of 0.978 which is close to 1. The instrument was administered by the researcher and his research assistance through the use of systematic sampling technique of even numbers for instance 2,4,6,8,10,12 and so on. This process continues until the required number of respondents were attained. The instrument used for this study was self developed in a closed ended questionnaire and it was structured in four (4) point likert scale. Meant to determine respondents view on family planning. The scale range from strongly agreed (4), agree (3), Disagreed (2), Strongly Disagreed (1).

Results:

Table 1: Distribution of the respondents Age range

Age range	Frequency	Percentage (%)
15-22	56	14.8%
23-28	95	25.1%
29-39	105	27.7%
40-49	79	20.8%
50 years and above	44	11.6%
Total	379	100%

A careful look at table 1 above shows that most of the rural women who responded (105, 27.7% were in the range of 29-39 years.

Answering research question one: what is the knowledge of rural women about family planning in Kogi state. The result revealed an aggregate score of 3.1841, which was found to be greater than the fixed mean 2.5. which shows that rural women in Kogi state are knowledgeable about family planning.

Answering the research question two: What is the attitude of rural women towards family planning in Kogi state. The result showed an aggregate mean of 2.4241 which was found to be less than the fixed mean (2.5). this indicated that rural women in Kogi State, Nigeria have negative attitude towards family planning.

Hypotheses One: Rural women in Kogi state, Nigeria do not have significant knowledge of family planning.

Table 2: One sample t-test analysis on Knowledge of Family Planning among Rural Women.

	Mean	Std. deviation	t-value	Df	p-value
Actual mean	31.1841	1.2577	3.201	378	0.021
Constant mean	2.50	0.00			

T (378) = 1.972, $P < 0.05$ concerning the knowledge of family planning rural women, Table 2 above showed that the respondents have positive knowledge as indicated by P-value of 0.021 and t-value of

3.201 respectively. Therefore, the formulated hypothesis which was stated that indicating that the rural women in Kogi State are knowledgeable about Family planning. Therefore, this hypotheses was rejected

Table 3: One Sample t-test analysis practice of Rural Women towards Family Planning

	Mean	Std. deviation	t-value	Df	p-value
Actual mean	2.4241	.8762	1.291	378	0.18
Constant mean	2.50	0.00			

$t(378) + 1.972$, $P \leq 0.05$ concerning the practices of rural women towards family planning, Table 3, reveals that the respondents have poor practice as shown by a p-value of 0.18 and t-value of 1.291. Therefore, the formulated hypotheses was retained, which stated that the rural women in Kogi State, Nigeria do not have significant practice towards family planning.

Discussion

The study sought to find out assessment of knowledge and practice of family planning among rural women in Kogi State, Nigeria. The results of the study showed that, rural women in Kogi State, Nigeria are knowledgeable about family planning. This study corroborate with Stanley (2007) and Termerman (2012) on knowledge, attitude and practice of family planning among married women Jimma Zone, Ethiopia.

The result of the study on table 3 reveals that rural women in Kogi State, Nigeria have negative attitude towards family planning. This study is similar to Chingayipe (2013) which reveals that women in Accra, Kenya have negative attitude towards family planning methods

Conclusion

Based on the result obtained from this study the following conclusion were drawn:

- (1) Rural women in Kogi state, Nigeria have knowledge of family planning.
- (2) Rural women in Kogi state, Nigeria do not have positive practice towards family planning.

Recommendations

Based on the findings and conclusion reached in this study, the following recommendations were made;

Federal, state and local government health authorities should encourage women in sustaining their knowledge of family planning through community mobilization and enlightenment campaign.

Health directorate in collaboration with the family planning unit should roll-out more programmes to tackle the prejudice mind misinterpretations among individuals towards or family planning.

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INFLUENCE OF ELECTRONIC MEDIA ON INFORMATION DISSEMINATION TO THE ATHLETES IN COMPETITIVE SPORTS PROGRAMMES IN NIGERIA.

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Abstract

The purpose of this study was to find out the Influence of Electronic Media on information dissemination to the athletes in Competitive Sports programmes in Nigeria. To achieve this purpose, the purposive sampling technique was used to select the samples from the six Geo-political zones of Nigeria. The respondents consisted of football, basketball, tennis players, athletes and sport managers. The Ex-post facto research design was used in the study. In pursuance of the specific objectives, one research question was formulated with one hypothesis. The population for the study was seven thousand, one hundred and fifty-six (7,156) with a sample size of six hundred and ten (610) The data collected were statistically analysed using descriptive statistics of frequency and percentages for bio-data of respondents, mean (\bar{x}) and standard deviation (SD) to answer the research question, while Inferential statistics of one-sample t-test was used to test the null hypothesis. A researcher-made instrument with a reliability coefficient of 0.803. The result of the data analysis using the constant mean of 3.5 and t-test at 0.05 level of significance showed that information dissemination with t-Cal of 4.6331 and P-Val of 0.001. Based on this finding the hypothesis was rejected. The study drew its conclusion from the findings that Electronic Media influence information dissemination to the athletes in competitive sports programmes in Nigeria. Through information dissemination, athletes are informed ahead of planned sporting competitions, get prepared, intensify their training, know venues of events, fixtures, officiating officials and others. The researcher recommended the need for adequate information dissemination to athletes by sports organisers/managers before, during and after competitive sports programmes in Nigeria.

Keywords: Athletes, Competitive sports, Electronic Media, Influence, Information Dissemination.

Introduction

Sports and the media have both global and local scope of operation and are bound together in a complex network of relationship (Dinesh, 2015). The significant role electronic media is playing in the management of Competitive sports programmes all over the world cannot be underestimated. The management of competitive sports programmes today is quite different from how it used to be in the past. A lot of innovations have been brought into it as a result of technological breakthrough. This has led to so many changes in the nomenclature of the facilities and equipment, officiating, skills acquisition, training methods etc, (Oppermann, 2010)

While Free online dictionary.com (2012) opined that electronic media is any type of device that stores and allows distribution or use of electronic information. This includes television, radio, internet, fax, CD-ROM, DVD and any other electronic medium. In this study, therefore electronic media is regarded as the media such as television, radio and social media used in dissemination information to the public, creating sports awareness, encouraging people participation and attracting sports sponsorship in a particular group or area to participate in sports or improve their performance.

Eric (2006) maintained that the media that has had the greatest effect on sports and the audience is radio. Perhaps no other form of the media at this time covers the different levels and varieties of athletes more than radio. Also, radio has abilities or skills that other media cannot match. The first is the connection formed between the broadcaster and the audience. Besides listening to the radio at home, people also listen to the radio at work, as they exercise, or as they drive in their cars. The more athletes are aware of sporting events, the more they are motivated to participate in competitive sports programmes.

Electronic media has been seen as a major contributor to the modern sport, especially in Nigeria. Electronic media disseminate sports information, increase sports awareness and spectatorship. Apart from the increase in revenue generation which enriches various sports stakeholders, electronic media also educate people on the new or modified rules in a particular sport, inspire and encourage participation in sports competitions through the exposure of modern and standard facilities and appropriate training and competition kits to athletes. With electronic media, sports plans, programmes, activities and services are made known to the general public, for better understanding and support from the public. Despite the above efforts, there are enormous challenges in information dissemination to the athletes in competitive sports programmes in Nigeria. However, through personal observation of the researcher, it is obvious that there is inadequate publicity to athletes in competitive sports programmes in Nigeria. Hence, the need for this study is designed to ascertain the influence of Electronic Media on information dissemination to the athletes in competitive sports programmes in Nigeria. The researcher intended to assess if electronic media influence information dissemination to the athletes in competitive sports programmes in Nigeria

Methods and Materials

The Ex-post facto research design was used for this study. This is due to fact that information required for the study is available with the respondents. Ex-post facto research design is the best tool to be used for descriptive research involving current events. (Keling, 2007), The population of this study comprises Football players, Basketball players, Tennis players, Athletes and Managers from four Nigeria Sports Federations, is Nigeria Football Federation, Nigeria Basket Ball Federation, Nigeria Tennis Federation, Athletics Federation of Nigeria with a total population of seven thousand and one hundred and fifty-six (7,156) while the sample size was six hundred and ten (610) using Research advisor (2006) in the six (6) Geo-political zones of Nigeria (NFF, NBBF, NTF, AFN, (2018). The instrument was a self-developed, well-structured questionnaire with four statements on demographic data of the respondents and five items on the influence of electronic media in officiating competitive sports programmes in Nigeria. The questionnaire was based on the five-point Likert scale of Strongly Agree (SA) =5, Agree (A) =4, Undecided (U) = 3, Disagree (D) =2, and Strongly Disagree (SD) =1

This study was to find out the influence of electronic media on information dissemination to the athletes in competitive sports programmes in Nigeria. To achieve this purpose, six hundred and ten (610) copies of the questionnaire were administered and six hundred and five (605) copies were valid and used for the analysis. The Statistical Package of the Social Sciences (SPSS) Version 22 was used to analyse the data obtained from the respondents. The data were analysed and presented in chapter four. Descriptive statistics of frequency and percentages was used to describe the demographic characteristics of the respondents. Descriptive statistics of Mean and Standard Deviation was used to answer the responses to the research questions where the weighted mean scores of the respondents were used. The mean scores were based on the 5 points Likert type scale used in the instrument. Hence, any response that has a mean score of 3.5 and above is positive or accepted, and any response that has a mean score of less than 3.5 is negative or rejected. The inferential statistics of the one-sample t-test was used to test all the hypotheses at 0.05 level of significance.

Hypothesis Testing

There is no significant influence of electronic media on information dissemination to the athletes in competitive sports programmes in Nigeria.

Table . One sample t-test analysis of influence of electronic media on information dissemination to the athletes in competitive sports programmes in Nigeria.

Variables	Mean	Std. Deviation	t-value	Df	P-value
Constant mean	3.8067	1.1481	4.6331	604	0.001
Actual mean	3.5	0.00			

$t(604) = 1.972$, P value < 0.05

From the above result of analysis presented, it shows that the p-value 0.001 is less than 0.05 level of significance. The t-value 4.6331 is greater than the t-critical 1.972 at degree of freedom 604 using 0.05 level of significant. Therefore, the null hypothesis which states that “There is no significant influence of electronic media on information dissemination to the athletes on competitive sports programmes in

Nigeria” is hereby rejected. There is significant influence of electronic media on information dissemination to the athletes on competitive sports programmes in Nigeria ($t = 4.6331$; $p = 0.001 < 0.05$).

Discussions

The Null Hypothesis stated that Electronic Media do not significantly influence information dissemination to the athletes in competitive sports programmes in Nigeria was rejected. This is in line with Nji (2008) who posited that electronic media influence athletes’ participation in sports. This study investigated the status of electronic media in the areas of information dissemination to athletes in competitive sports programmes. The study was aimed at highlighting the status of information dissemination to athletes in the development of sports in Nigeria. The findings collaborate with the position of Nji (2008) which stated that electronic media i.e. the radio, television and social media influence information dissemination to the athletes in competitive sports programmes. Furthermore, Eric (2006) opined that the type of media that has the greatest effect on sports and athletes is radio, television and social media. Eric further stated that radio has the capacity and reach that other media outfits cannot match. Secondly, radio has the capacity that can capture the attention of the listener who can be either at home or listening at work or during exercise. In further support of Hypothesis one, Kienka (1990) equally opined that radio and television stations have a great listenership particularly live broadcast of international and national matches involving Nigeria to million radio/television listeners in the country. Kienka further posited that the efforts of the Electronic media i.e. the radio and television have been boosted by the establishment of a sports unit by the News Agency of Nigeria (NAN) which gets and disseminates to the media houses the latest sporting news from all over the world.

Conclusion

The finding of the study shows that Electronic media influence information dissemination to the athletes in competitive sports programmes in Nigeria. Information dissemination to the athletes through the use of electronic gadgets such as radio, television, social media etc significantly enhance athletes’ participation in competitive sports programmes in Nigeria.

Recommendations

Based on the findings of this study, the following recommendation was made. There is need for sports organisers to put more efforts on the use of electronic media in information dissemination to the athletes in competitive sports programmes in Nigeria.

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**MANAGERIAL SKILLS AND ADMINISTRATIVE EFFECTIVENESS OF PRINCIPALS IN
KWARA STATE SECONDARY SCHOOLS, NIGERIA**

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Abstract

This study examined managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. The descriptive research design of survey type was adopted. The population of the study comprised all the 8,613 teachers in the entire 317 Kwara State secondary schools. A multi-stage sampling technique was used for the study. Cluster sampling technique was used to group Local Government Areas (LGAs) in the State into senatorial districts. A random sampling technique was used to select two LGAs from each of the senatorial districts, while six secondary schools were randomly selected from each of the selected LGAs. A random sampling technique was used to select 10 teachers from each of the sampled schools to make a total of 360 respondents. Principals' Managerial Skills Questionnaire (PMSQ) and Administrative Effectiveness Questionnaire (AEQ) were used to collect data for the study. The PMSQ and AEQ were validated and found to be reliable with reliability coefficients of 0.78 and 0.72 respectively. Pearson's Product Moment Correlation was used to test hypotheses at 0.05 level of significance. The findings of the study revealed that there was a significant relationship between principals' managerial skills and administrative effectiveness in Kwara State secondary schools, Nigeria ($r=0.629$, $p<0.05$). The study concluded that principals' managerial skills are very key to the actualisation of administrative effectiveness in Kwara State secondary schools, Nigeria. Based on the findings and conclusion of the study, it was recommended that Kwara State government should be dedicated to the provision of periodic and regular managerial skills acquisition programmes for secondary school principals through seminars, conferences, workshops, seminars and public lectures, to continually improve their ability to properly plan, organise and supervise school activities towards enhancing administrative effectiveness.

Keyword: Principals' managerial skills; Planning skill, and Administrative effectiveness

Introduction

Principals occupy important positions in secondary schools; just like headteachers, provosts, rectors and vice-chancellors are significant factors in the primary schools, colleges of education, polytechnics and universities respectively. They are like captains in the ships or pilots in the aircraft without which the objects cannot move, let alone reach the desired destinations. In Nigerian public secondary schools, the principals are the general overseers, but accountable to the proprietor, that is the government. They are saddled with the strategic and sensitive responsibility of managing the school affairs to ensure that the stated goals are realised. It could be stated that, since the principals are the heads, the way they manage the schools goes a long way in determining administrative success or otherwise.

In Kwara State public secondary schools, principals are appointed by the Teaching Service Commission (TSC) on behalf of the government to serve as the initiators of plans, as well as executors of the directives from the government targeted at realising the stated educational objectives and goals. Hence, principals must always map out strategies that would enhance their administrative effectiveness and consequently lead to the actualisation of the stated goals and objectives. For principals to effectively do this there is a need for adequate possession and utilisation of managerial skills. Managerial skills are seen as significant wherewithal or instrument which principals need to possess and utilise if actualisation of administrative effectiveness is of priority.

According to Okoye (2007), managerial skills refer to the ability to plan, organize, direct and control the activities of an educational institution to realise the set goals for the educational system. Managerial skills play a significant role in assisting the principals to strategically pilot school affairs to actualise administrative effectiveness. In the opinion of Fullan (2005), managerial skills are the competencies essential for effective and efficient planning, organising, staffing, controlling, coordinating and decision-making. Therefore, principals' managerial skills refer to the knowledge, techniques and ability needed by school principals to systematically and effectively plan, direct, organise, supervise and coordinate all the school activities to actualise the stated goals. Giami and Obiechina (2019) defined principals' managerial skills as the ability to skillfully and successfully plan, supervise, coordinate, organise, control, make decision and initiate actions which would facilitate and stimulate teachers to achieve school goals and objectives. Muraina (2014) stated that a school principal must operate in various areas ranging from instructional leadership to the management of school facilities and students guidance. However, for him to effectively carry out all these to facilitate the actualisation of administrative effectiveness, there is a need for possession of managerial skills in planning, organising, directing, coordinating, supervising the schools' activities. Principals must officially relate with teachers, students, members of the community and watch over the series of instructional and non-instructional activities which are going on within the school premises. As a result of this, they must be, directing, organising and coordinating the school activities to administrative effectiveness. It could be stated that, one of the factors responsible for administrative in the effectiveness of Nigerian public secondary schools is inadequate possession of managerial skills by principals. The inability to effectively plan the school activities is not in any way unconnected with poor teachers' job performance in public primary and secondary schools.

Morgan (2002) asserted that planning skill is one of the most vital and fundamental skills which school principals need in the management process to actualise administrative effectiveness. Henze (2003) stated that planning is the process of formulating policies that would help realise the goals of an organisation.

Planning involves systematic and rational thinking embarked upon by the manager to make the organisation stay focused on the path to the realisation of goals. Planning is an important managerial skill needed by the school principals. With effective planning skill, principals would be able to map out strategies on how the school activities would be smoothly carried to enhance administrative effectiveness.

Philips (2004) observed that, for a school to be properly operated, the school management needs to acquire and also utilise a wealth of planning skills. Wishy-washy operations observed in public schools nowadays is a result of inadequate possession and utilization planning skills by the managers among other factors. Bolt (2002) opined that a school as a formal organisation is a system with different parts or components interrelated. Unless principals possess the effective organising skill, proper harmonisation of the components that form the school could be difficult; hence, administrative ineffectiveness. Organising skill means the ability of the school principals to gather and ensure effective distribution of available human and non-human resources within the schools to the appropriate quarters to actualise administrative effectiveness. As opined by Muraina (2014), the organising skill of the principals is derived from elements of management. It is the process of assembling and apportioning work, authority and resources among the staff members for the effective pursuit of the school goals. Ogunyemi (2001) believed that a school manager who is not skilled in championing the course of organising the school activities could continue to face the problem of administrative ineffectiveness.

Adesokan (2003) asserted that supervisory skill helps the school manager to oversee the school activities are carried out to ensure that administrative effectiveness is achieved. Bolt (2002) observed that, with effective supervisory skill, principals would be able to provide effective guidance towards ensuring smooth teachers' job performance and other activities carried out in school to realise administrative effectiveness. Igwe (2001) believed that supervision in a school system implies the process of ensuring policies, principles, rules; regulations and methods prescribed for purposes of implementing and achieving the objectives for education are effectively carried out. Supervising skill would help principals to have a clear picture of the activities going on within the schools, to at the right time, determine the areas where improvement is needed to enhance administrative effectiveness. Akomolafe (2012) elucidated that, administrative effectiveness means a positive response to administrative efforts and activities to actualise the stated goals. Also, administrative effectiveness refers to the extent to which a school manager can properly ensure that all aspects of the school operate in tandem with the set standards. Pandey (2017) stated that educational institution can function very well only if the school manager is administratively effective. His effectiveness in the administration is required for the school success. According to Oni (1992), school facilities such as classrooms, laboratories, libraries, textbooks and teaching aids constitute a strategic factor in ensuring the administrative effectiveness of a school manager. Their availability, adequacy and judicious utilisation influence the efficiency and high productivity of a school. School facilities refer to the buildings (laboratories, classrooms, libraries and workshops), mechanical equipment (fans, computers and power generating-set), instructional resources (textbooks, laboratory gadgets and other teaching aids) and furniture which are required to facilitate teaching and learning. The extent to which these facilities are judiciously utilised determines the administrative effectiveness of a school principal.

Discipline in education means the ability of both the staff and the students to comply with the school rules and regulations. Ehiane (2014) believed that discipline creates a good image of a school and prepares both teachers and students for high productivity. According to Birkett (2004), poor discipline on the part of

teachers and students could undermine effective teaching and learning and it is a reflection of administrative ineffectiveness in a school.

Okam and Bozimo (2004) elucidated that, school-community relationship means the inter-linkage association and cooperation between a school and the host community. It also involves bringing human resources to the community and school for effective and functional school management. School community relationship refers to the synergy between the school and the host communities, purposefully targeted at actualising the stated goals. The extent to which a school manager can maintain a persistent and mutual relationship with the host communities could be used as one of the yardsticks to measure his administrative effectiveness. Based on the foregoing discussions, the researcher decided to investigate managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.

It has been observed that administrative effectiveness in terms of injudicious utilisation of school facilities, indiscipline among students and staff, unattractive students' personnel services, poor relationship between the host communities and the school managements and poor interpersonal relationship between the principals and the staff members has been evident in some public secondary schools in Kwara State, Nigeria. However, all these could be a result of inadequate possession of managerial skills by the school principals.

Many researchers had carried out studies related to this study. For example, Muraina (2014) examined principals' managerial skills and administrative effectiveness in secondary schools in Oyo State, Nigeria. Ogundele, Sambo and Bwoi (2015) conducted a study on principals' administrative skills for secondary schools in Plateau State, Nigeria. Giami and Obiechina (2019) investigated principals' managerial skills and teachers' job performance in public secondary schools in Rivers State, Nigeria. All these studies are relevant to this study, but none of them examined managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. This is the gap which this study filled and the purpose of the study was to:

determine the relationship between managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria;
investigate the relationship between planning skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria;
examine the relationship between organising skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria; and
assess the relationship between supervisory skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.
and the researcher hypothesized as follows:

There is no significant relationship between managerial skills and administrative effectiveness of principals in Kwara State secondary schools. Nigeria.

There is no significant relationship between planning skill and administrative effectiveness of principals in Kwara State secondary schools. Nigeria.

There is no significant relationship between organising skill and administrative effectiveness of principals in Kwara State secondary schools. Nigeria.

There is no significant relationship between supervisory skill and administrative effectiveness of principals in Kwara State secondary schools. Nigeria.

Method and Material

This study adopted a descriptive research design of survey type. The population of the study consisted of 8,613 teachers in the entire 317 Kwara State secondary schools. A multi-stage sampling technique was used for the study. Cluster sampling technique was used to group the Local Government Areas (LGAs) into senatorial districts. A random sampling technique was used to select two LGAs from each of the senatorial districts (Kwara central, Asa and Ilorin East; Kwara South, Irepodun and Oke-Ero; and Kwara North, Kaima and Patigi) to make a total of six LGAs out of the 16 in the State. A random sampling technique was used to select six secondary schools from each of the selected LGAs while 10 teachers were randomly selected from each of the sampled schools to make a total of 360 respondents for the study.

Questionnaire entitled “Principals’ managerial Skills Questionnaire” (PMSQ) was used to collect information from teachers on planning, organising and supervisory skills of principals while “Administrative Effectiveness Questionnaire” (AEQ) was used to elicit information from teachers on utilisation of school facilities, students’ discipline and extent of school-community relations. PMSQ had 20 items with response options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD); while AEQ had 15 items with response options of Always So (AS), Often So (OS), Rarely So (RS) and Never So (NS). The questionnaires were validated by three experts and also tested for reliability through the re-test method. With coefficient reliability of 0.78 and 0.72 realised for PMSQ and AEQ respectively, the questionnaires were adjudged to be reliable for use in the study. Pearson’s Product Moment Correlation was used to test the hypotheses formulated at 0.05 level of significance. Out of the 360 copies of a questionnaire distributed, only 332 were returned for analysis

Results

Ho: There is no significant relationship between managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria

Table 1

Managerial Skills and Administrative Effectiveness of Principals

Variable	N	X	SD		Cal. r-value	p-value	Decision
Managerial Skills	332	3.08	0.87				
					0.668	0.015	Ho Rejected
Administrative Effectiveness of Principals	332	2.75	0.64				

p-value<0.05

Table 1 shows the calculated r-value (0.668) while the p-value (0.015) is less than the significance level (0.05). Hence, main hypothesis (Ho) is rejected. This shows that there was a significant relationship between managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.

Ho₁: There is no significant relationship between planning skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria

Table 2

Planning Skill and Administrative Effectiveness of Principals

Variable	N	X	SD		Cal. r-value	p-value	Decision
Principals' Planning Skill	332	3.27	1.01				
					0.629	0.026	Ho ₁ Rejected
Administrative Effectiveness of Principals	332	3.04	1.22				

p-value<0.05

Table 2 shows the calculated r-value (0.629) while the p-value (0.026) is less than the significance level (0.05). Hence, hypothesis one (Ho₁) is rejected. This shows that there was a significant relationship between planning skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.

Ho₂: There is no significant relationship between organising skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria

Table 3:

Organising Skill and Administrative Effectiveness of Principals

Variable	N	X	SD		Cal. r-value	p-value	Decision
Principals' Organising skills	332	3.11	0.89				
					0.574	0.003	Ho ₂ Rejected
Administrative Effectiveness of	332	3.04	1.22				

p-value<0.05

Table 3 shows the calculated r-value (0.574) while the p-value (0.003) is less than the significance level (0.05). Hence, hypothesis two (Ho₁) is rejected. This shows that there was a significant relationship between organising skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.

Ho₃: There is no significant relationship between supervisory skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria

Table 4

Supervisory Skill and Administrative Effectiveness of Principals

Variable	N	X	SD		Cal. r-value	p-value	Decision
Supervisory Skill	332	2.85	0.72				
					0.685	0.003	Ho ₃ Rejected
Administrative Effectiveness of Principals	332	3.04	1.22				

p-value<0.05

Table 4 shows the calculated r-value (0.685) while the p-value (0.003) is less than the significance level (0.05). Hence, hypothesis three (Ho₃) is rejected. This shows that there was a significant relationship between supervisory skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria.

Discussions

The finding of the main hypothesis revealed that there was a significant relationship between managerial skills and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. This shows that managerial skills contributed significantly to the realisation of administrative effectiveness in Kwara State secondary schools, Nigeria. Hence, it is very pertinent that principals possess adequate and effective managerial skills in planning, organising and supervising the activities carried out in schools, to make them record enviable administrative effectiveness. This finding agrees with the finding of Muriana (2006) which found a positive relationship between managerial skills and principal's administrative effectiveness in selected secondary schools in Itesiwaju Local Government Area of Oyo State.

The finding of hypothesis one revealed that there was a significant relationship between planning skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. This means that ability of the principals to effectively plan the school activities would help achieve administrative effectiveness. School is a complex organisation with different components and a series of activities going on. To avoid overlapping of duties, role ambiguity among the staff, under or over utilisation of both

human and non-human resources and the likes, principals need to properly plan to achieve administrative effectiveness. This finding corroborates the view of Henry (2001) that, ability to effectively plan the school activities, both curricular and co-curricular, is one of the managerial skills needed by the school principals to achieve administrative effectiveness. Administrative effectiveness could be difficult to actualise when the school activities are not perfectly planned by the principals.

The finding of hypothesis two revealed that there was a significant relationship between organising skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. This depicts that the extent to which the principals can rightly position both human and non-human resources in the appropriate places where they would be effectively utilised is very key to the enhancement of administrative effectiveness. This finding is in tandem with the view of Bolt (2002) that, organising skill assists the principals to perfectly position the teaching and non-teaching staff and other resources within the schools where they would effectively function or be maximally utilised to facilitate the effectiveness of the administration.

The finding of hypothesis three revealed that there was a significant relationship between supervisory skill and administrative effectiveness of principals in Kwara State secondary schools, Nigeria. This denotes that, the ability of the school principals to oversee the teaching and learning process, members of staff and students' conduct, utilisation of school facilities and extra-curricular activities would help them realize administrative effectiveness. This finding is in agreement with the view of Muraina (2014) that, it is very important for the school principals to for principals to have supervisory skill. There is no gainsaying the fact in schools where activities are not properly supervised, it would have an adverse effect on the administrative effectiveness and excellence.

Conclusion

Based on the findings of the study, it was concluded that:

managerial skills are very key to the actualisation of administrative effectiveness of principals in Kwara State secondary schools, Nigeria;

If principals adequately possess planning skill, it would help them to achieve administrative effectiveness in Kwara State secondary schools, Nigeria;

organising skill is a veritable tool needed by school principals to realise administrative effectiveness in Kwara State secondary schools, Nigeria; and

if principals adequately possess supervisory skill it would help them in achieving administrative effectiveness in Kwara State secondary schools, Nigeria.

Recommendations

Based on the findings and conclusion of the study, it was recommended that:

Kwara State government should be dedicated to provision of periodic and regular managerial skills acquisition programmes for secondary school principals through seminars, conferences, workshops, seminars and public lectures, in order to continually improve their ability to properly plan, organise and supervise school activities towards enhancing their administrative effectiveness;

principals should always ensure that schools' rules and regulations, subjects allocation to teachers, time table, co-curricular activities, constitution of school committees, provision of school facilities and request for the needed teaching and non-teaching staff are well planned in order to facilitate smooth operation which would lead to actualisation of administrative effectiveness; principals should persistently ensure both human and non-human resources available in schools are positioned to the appropriate places where they can be judiciously utilised or function effectively to support realisation of administrative effectiveness; and efforts should always be made by the principals to ensure that teaching and learning process in the classrooms and laboratories, co-curricular activities, available physical and material resources, student, teaching and non-teaching staff, inflow and outflow of visitors and school environment are well supervised in order to achieve administrative effectiveness.

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APPRAISAL OF ASSERTIVE AND INCLUSIVE COMMUNICATION STYLES OF HEAD-TEACHERS ON TEACHERS JOB PERFORMANCE IN PRIMARY SCHOOLS IN SABON GARI AREA OF KADUNA STATE

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Abstract

The study explores the influence of head-teachers' communication styles on teachers' job performance in primary schools in Sabon Gari area of Kaduna State. The study was set to achieve the following objectives: determine influence of head-teachers' assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State; and assess influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. The study employed the use of descriptive survey research design. The target population of the study was made up of 87 head-teachers, 1,850 teachers and 5 education officials in Sabon Gari Local Government, Kaduna State. A sample size of nine (9) head-teacher, one hundred and eighty-five (185) teachers and five (5) education officials were sampled from Sabon Gari Local Government, Kaduna State, making the total of one hundred and ninety-nine (199) respondents, used in the study. The sample size of head-teachers and teachers represented 10% of the entire population while the entire number of education officials was used the way they are due to the manageable size. The instrument titled "head-teachers' communication styles questionnaire (HCSQ) was used for data collection in the study. The validated instrument was pilot tested, the data collected from the pilot study was analysed using Cronbach Alpha statistics and a reliability coefficient of 0.78 was obtained. The data collected in the study was analysed using descriptive statistics of frequency, percentage, mean and standard deviation to answer the research questions, while ANOVA was used to test the hypotheses at 0.05 level of significance. Findings revealed that head-teachers' assertive communication style, and inclusive communication style all had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. Recommendations made include that there should be constant in-service training for head-teachers on positive verbal and non-verbal communication styles. This will equip the head-teachers with the essential skills for guiding teachers with respect to their job performance.

Keywords: Communication Styles, Teachers, Head Teachers, Assertive communication style, Inclusive communication style

Introduction

Head-teachers' communication styles refers to how head-teacher verbally and nonverbally interacts to signal how literal meaning should be taken, interpreted, filtered, or understood (Norton in Chory &

Mccroskey, 1999). In the context of this study, head-teachers' communication styles refers to the various strategies including verbal, nonverbal and caring approach which head-teachers employ to make the teachers understand their instructions effectively. An effective head-teacher has been conceptualized as one who produces desired results in the administration of schools by adopting the styles of communication that will enhance the clarity of his or her instruction in the school, thus Uchefuna in Nzekwe (2013) noted that head-teachers' communication styles have an influence on school climate which affect teachers job performance.

The subjects of this study include teachers, head teachers, and official of local government education authority. A teacher is any person that had acquired Professional knowledge in teaching and can be able to use them during the Teaching-Learning processes. The choices of primary school teachers are usually the ones who work under the supervision of the head teacher and should be able to describe his/her ability or inability to handle communication in school. The Head teacher is the one that is entrusted with the responsibility of managing all the resources (human, financial, materials, and time) in the primary schools to ensure the objectives of the schools are met. The researcher deems it right that main subject of the study be listen to. It is worth noting that the local government education authority is mandated to supervise the activities of the head teachers to ensure their legitimate role do not suffer a setback. The role of supervisors at the local government education authority makes them very vital and indispensable in a study of this magnitude.

Some primary school head-teachers tend to deal badly intentionally or unintentionally through the way they communicate with the teachers. These head-teachers generally communicate more with some teachers and being less communicative with other teacher. They like, and talk with some teachers more often, give emotional and social support to them, spend more time with them, and integrate them into school activities more often while some teachers are often left to themselves, thus Wrench, Richmond and Gorham (2009) assert that head-teachers should communicate and give equal attention to all the teachers in the school. This study focuses on four communication styles as they are identified by (Ezenwekwe, 2013; Sherman, 2015). These are aggressive communication style, assertive communication style, open communication style and inclusive communication style. This study therefore is focus on assertive and inclusive communication styles.

An inclusive communication style is another style that can be adopted by head-teachers in primary schools. It is one in which leaders (primary school head-teacher) ensure that all staff members in the school feel free to get involved in the decisions that affect their day- to- day activities (Barnlund, 2008). This means that a school with an inclusive communication style welcomes contribution from within and outside the school. Since it has been noted that no primary school head-teacher can work alone to achieve educational goals in a school, it is therefore imperative for primary school head-teachers to involve all stakeholders (especially teachers) in decision making process in schools. This is so important, as a school has been regarded as an open system that depends on input from both internal and external environments (Scott, 2008).

Another communication style is assertive style. Being assertive means being able to stand up for your own or other people's rights in a calm and positive way without being either aggressive or passively accepting 'wrong'. Assertiveness means standing up for your personal rights - expressing thoughts, feelings and beliefs in direct, honest and appropriate ways (Sherman, 2015). A school head who engages in assertive communication is open to hearing the opinions of others and feels comfortable enough to

express his opinions as well. Such leader has high self-esteem, has the confidence to effectively communicate with others without getting offended or being manipulative. While engaging in a conversation, states limits and expectations, states observations without judging, is an active listener, and checks on others' feelings.

The job performance of primary school teachers in recent times have become a thing of worry to parents, stakeholders and the government. This ugly incident of teachers' low job performance is lingering, despite all the efforts of the government in ensuring that qualitative education is provided at the primary school level. However, in recent times, most primary school teachers are having low self-esteem, resulting to low job performance. These teachers lack confidence in their ability to perform well on the job. This seems to be affecting the teaching and learning process as well other instructional activities at school.

In the bid to finding possible solution to this issue of low job performance of teachers in primary schools, school facilities and infrastructure has been improved as well as teachers' welfare and developmental programmes; researchers have also embarked on series of studies. Evidence from some of the literatures suggests that one of the essential determinants of success or failure in education is the style of communication which a head-teacher adopts in school administration. Hence, lack of effective communication between the school leader and teachers, impedes the teachers job performance. According to Patrick and Frankel (2004), communication encompasses more than speaking. It is also written communication as well as communicating with behaviour. The personal communication styles of the head-teacher, including verbal and non-verbal ones, open door policies, and regular meetings can pave the road to effective communication with the teachers. Hence, it is crucial to appraise head-teachers' use of assertive and inclusive communication styles and its corresponding impact on teachers job performance in primary schools in Sabon Gari Kaduna State. The objectives of the study are to:

determine head-teachers' assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State; and
assess head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

The following research questions were raised in the study:

Is there any influence of head-teachers' assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State?

Is there any influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State?

The following null hypotheses were formulated in the study:

H0₁: There is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

H0₂: There is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' inclusive communication style on teachers' job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

Method and Material

The study employed the use of descriptive survey research design. The target population of the study was made up of 87 head-teachers, 1,850 teachers and 5 education officials in Sabon Gari Local Government, Kaduna State. A sample size of nine (9) head-teacher, one hundred and eighty-five (185) teachers and five (5) education officials were sampled from Sabon Gari Local Government, Kaduna State, making the total of one hundred and ninety nine (199) respondents, used in the study. The sample size of head-teachers and teachers represented 10% of the entire population while the entire number of education officials was used the way they are due to the manageable size. The instrument titled “head-teachers’ communication styles questionnaire (HCSQ) was used for data collection in the study. The validated instrument was pilot tested, the data collected from the pilot study was analysed using Cronbach Alpha statistics and a reliability coefficient of 0.78 was obtained. The data collected in the study was analysed using descriptive statistics of frequency, percentage, mean and standard deviation to answer the research questions, while ANOVA was used to test the hypotheses at 0.05 level of significance.

Results

This section tested the two null hypotheses formulated in this study using analysis of variance (ANOVA) at 0.05 level of significance.

Hypothesis One: There is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers’ assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

The opinions of head-teachers, teachers and MOE on the influence of head-teachers’ assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State are analysed using analysis of variance (ANOVA). The summary of the hypothesis tested is presented in table 3:

Table 1: Summary of ANOVA Statistics on the Influence of Head-Teachers’ Assertive Communication Style on Teachers Job Performance in Primary Schools in Sabon Gari Local Government Area of Kaduna State

Status	Sum of Squares	df	Mean Square	F-ratio	F-critical	Prob.
Between Groups	931.185	2	931.185	17.209	2.61	.000
Within Group	6276.713	197	54.110			
Total	7207.898	199				

Table 3 showed the f-ratio value of (17.209) at 197 degrees of freedom and at 0.05 level of significance. The critical value (2.61) is less than f-ratio value (17.209), the probability level of significance $P(.000)$ is less than 0.05. This implied that head-teachers’ assertive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. Hence, the null hypothesis which states that there is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers’ assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State was rejected.

Hypothesis Two: There is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

The opinions of head-teachers, teachers and MOE on the influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State are analysed using analysis of variance (ANOVA). The summary of the hypothesis tested is presented in table 4:

Table 2: Summary of ANOVA Statistics on the Influence of Head-Teachers' Inclusive Communication Style on Teachers Job Performance in Primary Schools in Sabon Gari Local Government Area of Kaduna State

Status	Sum of Squares	df	Mean Square	F-ratio	F-critical	Prob.
Between Groups	.105	2	.105	7.392	2.61	.004
Within Groups	180.604	197	.734			
Total	180.710	199				

Table 4 showed the f-ratio value of (7.392) at 197 degrees of freedom and at 0.05 level of significance. The critical value (2.61) is less than f-ratio value (7.392), the probability level of significance P(.004) is less than 0.05. This implied that head-teachers' inclusive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. Hence, the null hypothesis which states that there is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State was rejected.

Summary of Major Findings

In view of the hypotheses tested in the study, the following findings were established:
 Head-teachers' assertive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.
 Head-teachers' inclusive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State.

Discussion of Findings

Findings on research question one revealed that head-teachers' assertive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. Therefore, hypothesis two which stated that there is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' assertive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State was rejected. This finding upheld the finding of Abdurrezzak, Aysel and Funda (2018) that the assertiveness training given to the experimental group increased communication skills. It also corroborated the findings of Shalle, Naypa and Sy (2018) which showed that the highest number of schools principal in the study area used the assertive style of communication. In terms of practices, the management was balanced because they practiced regular grade level meetings, held assemblies and

conferences to disseminate information relevant to education. With this kind of communication style, the school climate in terms of physical, social and academic was favourable. Teachers have a safe working environment and harmonious relationships among the teachers and principals which helped to the attainment of the very satisfactory performance of the school.

Findings on research question two revealed that head-teachers' inclusive communication style had positive influence on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State. Therefore, hypothesis four which stated that there is no significant difference in the opinions of head-teachers, teachers and education officials on the influence of head-teachers' inclusive communication style on teachers job performance in primary schools in Sabon Gari Local Government Area of Kaduna State was rejected. This finding shared similarity with the finding of Nzekwe (2013) which showed that teachers' inclusive communication styles influence on pupils' self-esteem and is more positive than aggressive teachers'. Additionally, Akinwale and Okotoni (2018) revealed that the common communication styles adopted by secondary school principals include inclusive communication styles.

Conclusion

It is important for any school head to set clear goals and draw a road map based on effective communication and productive relationships with students, teachers, and parents. Successful school head spend most of their time listening and speaking to others. Such interaction enables the leader to create a harmonious environment conducive to a successful educational institution. In light of the findings from this study, it was concluded that head-teachers often reject teachers' suggestions and communicate back to them using aggressive communication style. Some school head practiced assertive communication style as they give concise and unambiguous messages to teachers. Teachers also feel free to discuss challenges facing them with head-teacher. In addition, as both open and inclusive communication styles were practiced, school head allowed teachers to participate in the planning of school work/policy.

Recommendations

The study recommended that:

Teachers should be prepared to be more open to discussions and to be more self-confident, by providing them with the skills needed to establish positive effective communication with their head-teacher. Head-teachers should be encouraged to establish friendly atmosphere in the school and eliminate all harsh statements because it can keep the lower self-esteem teachers from interacting, participate and exchange ideas in the planning of school work/policy.

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ASSESSMENT OF PERCEIVED ROLES OF DIRECTORS OF SPORTS IN DEVELOPING SPORTS IN NIGERIA POLYTECHNICS

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Abstract

This research was a perceptual study of the perceived roles of Directors of Sports in the development of sports in Nigeria polytechnics. The indices of sports development under the study were: sports personnel, funding, facilities and equipment, sports programme, and training. From the population of five thousand made up of management staff, coaches (football, basketball, volley ball and handball), student union director of sports and students athletes, 359 respondents were sampled through simple random sampling and proportionate method. The descriptive statistics of mean and standard deviation were used to answer the research questions while one sample t-test was used to test the hypotheses at 0.05 level of significance. The results reveal that Directors of Sports played significant roles in sports development in Nigeria Polytechnics. It was also found out that Directors of Sports played significant role in personnel management, funding of sports, construction of Sports facilities, provision of equipment, coordination of sports programmes and the implementation of training quality among Polytechnics in Nigeria. It was clearly revealed that all the five null hypotheses were rejected based on the respondents response. Some recommendations were made that include: Review of national policy on sports in the polytechnics and all legislature governing sports administration in order to inculcate new methods and strategies guiding sports personnel management in the Nigeria polytechnics.

Keywords: Assessment, Development, Directors of Sports, Perceived roles, Sports

Introduction

Sports development is the totality of efforts, initiatives and strategies put in place by government, groups and individuals towards improving the standards of sporting activities (Schimmel, 2001). In Nigeria, the National Policy on sports laid the basis for sports development by identifying the philosophy, vision, mission, values and objectives of sports in the country. Sports development indices are parameters used to enhance development of sports in Nigeria. Such indices include personnel, funding, facilities and equipment, sports programmes, and training (Kabido, 2001).

However, the emergence of Nigeria Polytechnic Games Association (NIPOGA) marked the era of Sports development in Nigeria Polytechnics (Amuche, 2000). The Nigeria Polytechnic Games Association (NIPOGA) is the anchorage of all Nigeria Polytechnic Students' Sports Fiesta that is popularly known as Nigeria Polytechnics Games Association (NIPOGA). It is a forum for fostering social interaction, bilateral relations and healthy competition. All these by extension, have remained genuine indices for strengthening the bonds of unity, tolerance and friendliness among Nigeria youths, particularly those from the polytechnic sector.

In the civilized world, the success and failure of any sports team is often attributed to the philosophy, policy statement and implementation, competence adequacies of Directors of Sports. This is because Directors of Sports are responsible for designing quality programmes for their Athletes, coordinates training quality, camping and selection of players/athletes for major national and international competitions. Similarly, their roles centre on the provision of facilities and equipment, which play a vital role in the development of sports. When such facilities and equipment are made available, training is thus made easier. Unfortunately, the researcher observed ugly situation in Nigeria Polytechnics that is extremely discouraging based on two major problems that might have negative effects on the role of Directors of Sports in Nigeria Polytechnics. These are management and funding.

Kabido (2001) stated that there are sports development indices which require effective implementation by the management through qualified Directors of Sports. These indices serve as parameters for sports development which include: personnel; funding; facilities and equipment; sports programme; and training quality. It is not certain if these indices are adequately implemented in the administration and organization of sports in the polytechnics by the Directors of Sports. This might be due to some management lapses which did not provide adequate and qualified human resources that are necessary. Despite well documented educational edicts which created sports department and described how Directors of Sports should be appointed, politics has bedeviled the appointment of qualified and competent persons and consequently it affects their roles.

The aim and importance of this study therefore was to assess the perceived roles of Directors of Sports in the development of sports in Nigeria polytechnics in selected indices of sports development, so as to identify and proffer solutions to any deficiencies identified in the course of the study.

The study was based on two major theories namely: system theory of management and multiple linkage theory of leadership. The theoretical framework for this study is based on the premise that a set of principles that characterized “system theory of management” are connected to form a complex entity, for the purpose of achieving the management objectives of the organization. It was noted that “system theory of management is an ordered and comprehensive assemblage of facts, principles, doctrines or the likes in particular field of knowledge. In system theory of management, each system has its own environment and functions within it. These justify the description of management as a process of providing sufficient system that will make an organization function effectively (Kienka, 1990).

This view was further strengthened by Abioye (2001) when he described systems as those procedures used to make sure that the activities of a given organization are effectively discharged. It is along this direction that the concept of systems of management, in an organization becomes relevant to this study. Ladani (2008) posited that sports management can be linked to systems that contain many subsystems on which the success of the organization depends. The role of such systems within the scope of sports management has made, Ladani (2008) to describe such system as planning, organizing and controlling of organization within which one can have many other subsystems such as delegation, network, planning and budgeting. The multi-linkage theory is used in theorizing leadership for large scale sporting organization as the theory includes situational variables, which constrain managerial behavior and moderate effects. This study also takes into account motivation, human resources management system and process, task structures, and external coordination as variables. Therefore, this study assessed the perceived roles of Directors of Sports in the development of sports in Nigeria polytechnics.

Hypotheses

For the purpose of this research the following hypotheses were formulated:

1. Directors of sports do not play any significant role in the management of sports personnel in Nigeria Polytechnics
2. Directors of sports do not play any significant role in funding of sports programmes in Nigeria Polytechnics.
3. Directors of Sports do not play any significant role in the construction of sports facilities and provision of equipment n Nigeria Polytechnics.
4. Directors of Sports do not play any significant role in the coordination of sports programme in Nigeria Polytechnics.
5. Directors of Sports do not play significant role in the implementation of training in Nigeria Polytechnics.

Methods and Materials

The simple random sampling technique was used to determine the sample and sample size from the population of this study. First, the “lucky dip” otherwise known as the “blind ballot” technique of random sampling was employed. In this technique, the names of the states were written on pieces of paper and pooled into six different containers each representing one geo-

political zone. Using this technique, the names of two states were randomly picked from each container (one after the other) without replacement, making a total of twelve sampled states for the study.

In order to give equal representation to all the respondents, simple random sampling technique was used to select management staff, coaches, Students Union Government Sport Directors and students athletes from each state of the six geographical zones. A total of 359 respondents were used to serve as respondents out of 5,000 total population that was used in this study. This constitutes 24 management staff (Rector, Deputy-Rector, Dean, Registrar etc) were selected from each Polytechnic in Nigeria. In football, a total of 24 coaches were selected out of 231. The reason behind the selection was that minimum number of coaches in football per team is 3 from 77 polytechnics. Also, in handball game 24 respondents were selected out of total of 154 coaches. The reason was that the minimum number of coaches in handball should be from two (2) representing 77 polytechnics in Nigeria. Basketball and volleyball which have total population of 154 coaches each making a total number of 208 have forty eight (48) coaches selected from each sport i.e. (basketball have twelve (12) coaches and volleyball have twelve (12) coaches). The reason behind this was that both basketball and volleyball have minimum of 2 coaches per team. Lastly, SUG Sport Director have 12 respondents out of total population of 72 and the reason behind this was that each polytechnic, produces one SUG Sport Director that represent student union of the institution and in some polytechnics there is no provision for Director of Sports nor sporting activities.

Also, a total of 252 student athletes were selected from football, basketball, volleyball and handball out of total of 4158 populations. This was achieved through proportion method from the total population in each of the four selected sports.(football, Basketball, Volleyball and Handball)

However, the four selected sports for the study were chosen because of their popularity, mass participation and availability of facilities across the polytechnics in Nigeria. Also, simple random sampling was used in order to give each subject equal chances of representation in this study. For the purpose of this study, a self developed questionnaire was used by the researcher. The questionnaire was designed to solicit information from the respondents based on their perception of the roles of Directors of Sports in the development of Sports in Nigeria Polytechnics.

A total of 425 copies of questionnaire were produced and administered to the respondents for this study. To facilitate this, the researcher engaged the services of trained and experienced Research Assistants (RAs), two RAs from each geopolitical zone of Nigeria who were guided in administering and retrieving the completed questionnaire from the respondents. A total of 359 (84.5 %) copies of the questionnaire were retrieved by the researcher.

For the purpose of data analysis, one sample t-test was used for testing the hypotheses on different aspects of the perceived roles of Directors of sports in the development of sports in Nigeria Polytechnics at 0.05 level of significance..

Results and Findings

Null Hypothesis (Ho) One: Directors of Sports do not play any significant role in sport Development in Nigeria polytechnics.

Table 1: One Sample t-test on Directors of Sports Role in Sports Development in Nigeria Polytechnics

Variables	N	Mean	SD		t-value	DF	P-value
			.	Std. Error			
Sports Development	359	3.85	0.490	0.026	32.858	358	.000
Test Mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

The result from above table reveals that, the respondents perceived Directors of Sports role as significantly contributed to the development of sports in Nigeria Polytechnics. This was indicated in the table with an observed t-value of 32.858 obtained at 358 Degree of Freedom (DF) and an observed significant level of 0.000 (P < 0.05) which was greater than critical value of t at 358 DF is 1.96 and at 0.05 level of significance. Based on this evidence, there is enough proof to reject the null hypothesis that Directors of Sports do not play any significant role in sport Development in Nigeria Polytechnics.

Null Hypothesis (Ho) Two : Directors of sports do not play any significant role in the management of sports personnel in Nigeria Polytechnics.

Table 2: One sample t-test on Directors of Sports Role in Personnel Management towards Sports Development in Nigeria Polytechnics

Variables	N	Mean	S.D		t-value	DF	P-value
			.	Std. Error			
Personnel Management	359	3.79	0.583	0.031	25.720	358	.000
Test Mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

Table 2 reveals that respondents agreed that Directors of sports roles in personnel management is significant to the development of sports in Nigeria Polytechnics. The observed t-value (25.720) obtained at 358 degree of freedom was higher than the critical value of 1.96 at the same degree of freedom and at a fixed probability level of 0.05. The significant level obtained in the test is 0.000 (P < 0.05). These values obtained provide enough evidence to reject the null hypothesis. The null hypothesis that said Directors of sports do not play any significant role in the management of sports personnel in Nigeria Polytechnics is therefore rejected.

Null Hypothesis (Ho) Three : Directors of sports do not play any significant role in funding of sports programmes in Nigeria Polytechnics.

Table 3: One Sample t-test on Roles of Directors of Sports in Funding of Sports Development in Nigeria Polytechnics

Variables	N	Mean	SD		t-value	DF	P-value
			.	Std. Error			

Funding	359	3.85	0.563	0.030	28.626	358	.000
Test mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

The respondents agreed that the Directors of sports played a significant role in funding of sports in Nigeria Polytechnics. This conclusion was drawn from the observed t-value of 28.626 obtained at 358 degree of freedom which was greater than critical value of 1.96 at the same degree of freedom and the observed significant level of 0.000 (P < 0.05). With these observations, there was enough evidence to reject the null hypothesis that the Directors of Sports do not play any significant role in funding of sports in Nigeria polytechnics.

Null Hypothesis (Ho) Four : Directors of Sports do not play any significant role in the construction of sports facilities and provision of equipment n Nigeria polytechnics.

Table 4: One Sample t-test on Roles of Sports Directors in Provision of Facilities and Equipment for Sports Development in Nigeria Polytechnics

SD

Variables	N	Mean	Std. Error	t-value	DF	P-value	
Facilities/Equipment	359	3.90	0.615	0.032	27.714	358	.000
Test Mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

From the result in the table 4, the respondents agreed that Directors of Sports played a significant role in the construction of facilities and provision of equipment in Nigeria Polytechnics. The observed t-value of 27.714 obtained at 358 degree of freedom is higher than the critical value of 1.96. The observed significant level obtained in the test is 0.000 (P < 0.05). s. The assertion that said Directors of Sports do not play any significant role in the construction of sports facilities and provision of equipment in Nigeria Polytechnics was therefore rejected.

Null Hypothesis (Ho) Five: Directors of Sports do not play any significant role in the coordination of sports programme in Nigeria polytechnics.

Table 5: One sample t-test on Roles of Sports Directors in Coordination of Sports Programme for Sports Development in Nigeria Polytechnics

SD

Variables	N	Mean	Std. Error	t-value	DF	P-value	
Sport programmes	359	3.86	0.682	0.036	23.940	358	.000
Test mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

The result shows that the respondents agreed that the Directors of Sports played a significant role in the coordination of sports programmes in the development of Sports in the selected Nigeria polytechnics. This was deduced from the observed mean score of t-value of 23.940 obtained at 358 degree of freedom greater than critical value of 1.96 at the same probability level of significance (P = 0.05). The observed level of significance for the test is 0.000 (P < 0.05). With these observations, there was enough evidence to reject the null hypothesis. The null hypothesis

that the Directors of Sports do not play any significant role in the coordination of sports programme in Nigeria polytechnics was therefore rejected.

Null Hypothesis (Ho) Six: Directors of Sports do not play significant role in the implementation of training in Nigeria polytechnics.

Table 6: One Sample t-test on Directors of Sports Roles in Implementation of Sports Training in Nigeria Polytechnics

Variables	N	Mean	SD	Std. Error	t-value	DF	P-value
Sports Training	359	3.85	0.691	0.036	23.395	358	.000
Test Mean	359	3.50	0.000	0.000			

(t-critical = 1.96, P < 0.05)

From the result in the table 6, the respondents agreed that the Directors of Sports played a significant role in the implementation of quality training in Nigeria Polytechnics Institutions. The observed t-value (23.395) was higher than the critical value of 1.96 at 358 degree of freedom. The observed level of significance for the test is 0.000 (P < 0.05). With this result, there was no evidence to retain the null hypothesis. Therefore, the null hypothesis that Directors of Sports do not play any significant role in the implementation of training quality in Nigeria Polytechnics was thus rejected.

Discussion

The study assessed perceived roles of Directors of Sports in the Development of Sport in Nigeria Polytechnics. The finding here agrees with Schimmel (2001) who explained that sports development is the totality of efforts, initiatives and strategies put in place by government, groups and individuals towards improving the standards of sporting activities. The perception of respondents here also agrees with the studies of Venkateswarlu (2010) was unanimous in the perception of sports development as they pointed out that sports development can be described in terms of construction of standard sports facilities and equipment, meaningful and purposeful training programmes as initiated by sports personnel, long term plans for succession and continuity from one generation to the other.

Directors of Sports do not play any significant role in the management of sports personnel in Nigeria Polytechnics was tested, The null hypothesis was therefore rejected. The finding of this study is in tandem with Ayodele (2010) who reported that personnel are the officials that play an integral role in the management of sport programme in sports organizations and they should be well qualified, certified and licensed as well hold membership identification in their respective positions. The report further stated that personnel and leadership are elements around which cooperation, loyalty, sociability and many other traits on which sports can be developed.

Directors of sports do not played any significant role in funding of sports in Nigeria Polytechnics. The result revealed that respondents agreed that the Directors of Sports played a significant role in funding of sports in Nigeria polytechnics institutions. The null hypothesis was therefore rejected. The finding here is in agreement with Amuche (2000) who stated that the role of Directors of sports in sports management cannot be over-emphasized because funds are regarded

as major facilitator in numerous activities involved in sports. Adequate funding is essential for effective sports development. It was also go along with Krotee (2012) that suggested that provision for funds should be made available and also the sports programme should be concluded through regular budgeted college income. The findings also supports the revelation of Ladani (2008) that sports consume a lot of money. He stated that sports practices could not be classified as commercial venture and in this regard, the funding of sports should be adequate and there should be no delay in the release of funds for the running of Sports Programmes to the Director of Sports

Directors of sports do not play any significant role in the construction of sports facilities and provision of equipment in Nigeria Polytechnics. It was found that the Directors of Sports played a significant role in the construction of facilities and provision of equipment. The null hypothesis was therefore rejected. The finding of this study agrees with Amuche (2000) that facilities represent a sensitive area in all ramification of sports management. He further supported his point that facilities occupy an enviable position since their provision carried with them certain standards as determined by age, weight and experience of the user. Amuche (2000) equally revealed and described standard facilities as essential pre-requisite to participation and excellent performance in sports activities. Similarly, Ladani (2008) that for successful execution of any sports programme, there must be availability of qualitative and quantitative facilities.

Directors of sports do not play any significant role in the coordination of Sports programmes in Nigeria Polytechnics. The result revealed that respondents perceived Directors of Sport role in the coordination of sports programme in Nigeria Polytechnics institutions as significant. The null hypothesis was rejected. The finding of this study is consistent with the report of Ayodele (2010) who look at sports programmes or competition as mind sports usually held over the period of time involving participants participating according to specification. The findings also reflect the contribution of Abioye (2001) aligned with the evidence on ground by saying that the enjoyment and satisfaction of trying to improve one's results and competing against others is after all, the main reason for training athletes. The finding also agrees with Adeyanju (2008) who stated that Nigerian Polytechnics have witnessed expansion of sports programmes and that with the expanding programme the environment around sports is also changing rapidly and require more versatility and well informed Director of Sports who have knowledge of current sport development indices.

Directors of Sports do not play significant role in the implementation of training quality in the polytechnics. The outcome of the result revealed that Directors of Sports was considered to play significant role in Nigeria Polytechnics. The null hypothesis was rejected. This finding is in line with the report of Adeyanju (2008) who stated that training quality is a necessary ingredients in the acquisition of motor skills and it results in improvement of performance in sports competition. Similarly, Boscgher (2006) supported the finding by saying that training also makes for expedition of energy and reduction in the rate of which error may occur during competition. With the above mentioned points, Ladani (2008) opined that Directors of sports have overall

responsibility for sporting events and activities within and outside of the institutions as well as supervising the lead coaches involved in day-to-day training programmes of the athletes.

From the findings of this research on the perceived roles of Directors of Sports in the Development of Sports in Nigeria Polytechnics, the researcher concludes as follows:

Conclusion

It could be concluded that Directors of Sports roles in sports development indices are effectively practiced beyond present levels of sports development in Nigeria Polytechnics. That personnel management is a pivotal component of Nigeria Polytechnics sports planning system and should be aligned with the cooperate mission and vision to enhanced quality leadership performance. That sports development in Nigeria polytechnics is not a question of chance, is accomplished with adequate funding which is vital requirement in sports development.

Recommendations

Based on the findings from this study, the researcher recommends as follows:

1. There is need for government to review national policy on sports in the polytechnics and all legislation governing sports administration in order to inculcate new methods and strategies guarding Directors of Sports role on Sports management..
2. The Polytechnics management should embark on massive infrastructural development of sporting facilities in Nigeria Polytechnics such that are designed to the specifications that can meet world standard, attract national and international competitions and stand the test of time. The Directors of Sports should adopt technical and professional approaches for effective management of facilities .
3. The Nigeria Polytechnics should fund sports adequately through Directors of Sports. Also,, the management should be instructed for timely release of funds to sports unit for early preparation towards competitions and create a conducive environment for the private sector to discharge their social corporate responsibilities by investing in sports.
4. Attempt should be made by the Polytechnics management to improve on the provision and maintenance of sports equipment in the Polytechnics

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ASSESSMENT AND IMPLEMENTATION OF SCHOOL HEALTH ACTIVITIES IN SECONDARY SCHOOLS IN NGURU LOCAL GOVERNMENT AREA OF YOBE STATE, NIGERIA

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Abstract

The need to provide accurate health information for disease prevention and control, and ensuring school safety for healthy living of students, staff and community. The provision of school health services is of paramount importance to the health and well-being of students and staff. The purpose of this paper was to assess the implementation of school health services in selected secondary schools in Nguru Local Government Area of Yobe state. Seventy-five respondents were selected randomly for this study which cut across the staff in the selected schools. Three hypotheses were generated for the study. A self-structured questionnaire and checklist were used in gathering information from the respondents. The Pearson Product Moment Correlation Coefficient was used to determine the reliability of the instrument ($r=0.72$). The study revealed that health services provisions were made available in each school but were poorly implemented. It also revealed that health personnel, health facilities and equipment, and funding would have significant influence on implementation of school health services in the selected schools. It therefore recommended that to ensure safety and well-being of students and staff, adequate provisions for school health services should be made available and implemented.

Keywords: Assessment, Implementation, School Health Services, First aid. School.

Introduction

School Health Services are preventive and curative services provided for the promotion of the health status of learners, staff and community members. School Health Services refers to the procedures that are carried out by physicians, nurses, dentist, health educator, physical and health education teachers, and other personnel to appraise, protect and promote the health of school children and school personnel (Hilton, 2012). Kolebaje and Adeboluwakun (2004) also asserted that School Health Services includes health appraisals, treatment of common ailments, including the provision of emergency care, supervision of the health of children and personnel, control of communicable diseases, record keeping and the school

nutrition programme. School health services are therefore an essential component of the School Health Programme.

School Health Service is a component of School health programmed which is aimed at providing services for the wellness of school staff, students and community. School health services contribute to the goals of the education system and the healthcare system by providing screenings and referrals, administering medications and treatments, providing first aid, providing health counseling and education, and supporting students to acquire self-management skills (Ademokun, Osungbade & Obembe, 2012). The purpose of School Health Services is to ensure that all students are healthy and ready to learn and also to help students at school to achieve maximum health possible for them to obtain full benefit from their education. The school health team consist of the school physician, school nurse(s), and health assistants working in partnership with the student, his/her parents, the student's primary healthcare provider(s).

The National School Health Policy was introduced in 2006 to improve the state of School Health Services in the country (Federal Ministry of Education, 2006). Sadly, despite the richness in policy, little has been done to implement it in the school system (Ofovwe & Ofili, 2007). Moronkola (2003) reported that for the school to carryout effective School Health Services, there must be well qualified health personnel that may be on full time or part time. The school must also have designated health facilities with appropriate equipment and supplies that will help in diagnosis, treatment, meeting emergency care and referral services. Apart from communicable diseases control, accident and injury prevention, the school health services must also ensure that food vendors and foods are properly screened so as to meet the need of the students and staff.

National School Health Policy (2006) gave the objectives of School Health Services as follows;

- To provide basic services for disease prevention and management of injuries in the school.
- To build capacity of the school community to identify, treat, and manage simple illnesses, injuries, infections and infestation.

Scope of School Health Services as provided in the National School Health, Policy 2006 includes.

- Appraisal of the health status of learners and school personnel through pre-entry screening, routine medical and psychological examinations.
- Health counseling of the school community by counselor or social worker.
- Referrals and follow-up health services between the school, community and the health facilities.
- Health screening and the maintenance of routine health records in school
- Prevention and control of communicable and non-communicable diseases through inspections, exclusion, re-admissions, educational measures, immunization, sanitation and epidemic control.
- Provision of special health services for learners with special needs.

The provision of health services to secondary schools is very crucial to the achievement of a total healthy society. School aged children are daily exposed to various infectious diseases, nutritional disorders, accidents and injuries as a result of their heterogeneous nature such as coming, from different backgrounds, culture, homes and environment. Infected students can infect other students easily due to the limited and confined environment they find themselves (Oyinlade, Ogunkunie & Olanrewaju, 2014). Therefore, to meet the Millennium Development Goal 4 of reducing child mortality, School Health Services should be fully implemented and utilized. The purpose of the study was to assess the provision of school health services in schools, in Nguru Local Government Area of Yobe state and also to examine the influence of health personnel, health facilities and equipment, and funding on the implementation of school health services in the selected schools.

Research Questions

The following research questions were raised:

- Would health personnel have any influence on the implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state?
- Would health facilities and equipment have any influence on the implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state?
- Would funding have any influence on the implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state?

Research Hypotheses

The following hypotheses were tested:

- Health personnel will not have significant influence on implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state.
- Health facilities and equipment will not have significant influence on implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state.
- Funding will not have significant influence on implementation of school health services in secondary schools in Nguru Local Government Area of Yobe state.

Method and Material

The study adopted the use of survey research method. Fifteen secondary schools (N=15) on which the assessment is being carried out on were selected from Nguru Local Government Area of Yobe State using purposive sampling technique. 75 respondents were randomly selected from each school which comprised principals, vice principals (Academics and Administrative), Physical and Health education teachers, nurses and food nutritionist. A checklist *was* used as instrument to assess the School Health Services on ground while a self-structured questionnaire was used to gather information on the influence of health personnel, health facilities and equipment, and funding on the implementation of school health services in the selected schools. The reliability index of

the questionnaire is 0.72. The returned copies of the questionnaire were screened and coded for analysis. Frequency counts and percentages were used in analyzing the demographic data and the checklist while Chi-square was used to test the stated hypotheses at 0.05 alpha levels.

Table 1: Demographic Data of the Respondents

Age	Frequency	Percentage
Below 30	20	26.7
31-40	35	46.7
41-50	12	16.0
51 & above	8	10.6
Total	75	100.0
Sex	Frequency	Percentage
Male	32	42.7
Female	43	57.3
Total	75	100.0
Portfolio	Frequency	Percentage
Principal	15	20.0
Vice principals	30	40.0
PHE Teacher	20	26.7
Nurse	2	2.7
Food nutritionist	8	10.6
Total	75	100.0
Experience	Frequency	Percentages

1-3	28	37.4 31.4
4-7	16	21.3
8-11	16	21.3
11 & above	15	20.0
Total	75	100.0

From table I above, the age of the respondents revealed that 20 (26.7%) were below 30 years, 35(46.7%) falls within 31-40years, 12 (16.0) of the respondent were within the age range of 41-50 years and 8 (10.6) were 50 years and above. In the sex category, 32 representing 42.7% of the respondents were male while 43 (57.3%) represents the female. In the portfolio of the respondents, 15(20.0%) were principals, 30 (40.0%) vice principals, 20(26.7%) physical and Health Education teachers, 2(2.7%) nurses, and 8 (10.6%) were food nutritionist. Based on the experience of the respondents, 28(37.4%) have 1-3 years of experience, 16(21.3) falls within the 4-7 and 8-11 years respectively while 15(20.0) have had 11 years and above experience.

Table 2: Summary of School Health Services Assessed on the Selected Schools.

School Health Service	Frequency
Food Nutritionist	8
Nurse	2
Physician	0
Physical & Health Education teachers	28
Health Facilities & Equipment	
First aid box	15
Health room/ sick bay	6
Health Screening and Records	
Food vendor screening	10

Routine inspection	8
Immunization	15
Medical records	15

From table 2 above, under the Health personnel available in the schools, 8 were food nutritionist, 2 nurses, no physician in any of the selected secondary school, 28 physical and health education teachers who also functioned as first aider. In the Health facilities and equipment category, 15 First Aid Box were available while 6 rooms which serves as sick bay or health room were also available. In the health screening and records, 10 of the school carry out periodic screening on the food vendors and the food supplied, 8 out of the 15 schools carry out routine inspection on school environments and students, 15 carry out immunization procedures which is mostly given through the health record supplied by the students, medical records were also made provision for in all the schools.

Table 3: Analysis of Qualified Health Personnel on Implementation of School Health Services.

Variable	N	D.f	L.S	Calc. X ²	Crt X ² X ²	Remark
Health Personnel on Implementation of SHS	75	6	0.05	35.67	4.71	S

From table 3 above showed that calculated value of 35.67 is greater than the critical value of 4.71, with degree of freedom 6 at 0.05 level of significance. This implies that availability of quality health personnel would have significant influence on the implementation of school health services in Yobe State.

Table 4: Analysis of Health Facilities and Equipment on Implementation of School Health Services.

Variable	N	D.f	L.S	Calc. X ²	Crt X ² X ²	Remark
Health Facilities and Equipment on Implementation Of SHS	75	6	0.05	72.5	2.61	S

Table 4 above revealed that calculated value of 72.5 is greater than critical value of 2.61, with degree of freedom 6 at 0.05 level of significance. This also implies that availability of health facilities will have significant influence on implementation of school health services in Yobe State.

Table 4: Analysis of proper funding can play a significant role toward implementation of school health services

Variable	N	D.f	L.S	Calc. X ²	Crt X ² X2	Remark
Funding on Implementation of SHS	75	6	0.05	80.16	6.83	S

Table 5 above showed that calculated value of 80.16 is greater than the critical value of 6.85, with degree of freedom 6 at 0.05 level of significance. This shows that proper funding would play a significant role towards implementation of school health services.

Discussion of the Findings

The findings of this study revealed that availability of qualified health personnel. Health facilities and equipment's if proper funding would have significant influence on the implementation of school health services in secondary school in Yobe State. Availability of qualified health personnel in the secondary school is of paramount important towards the implementation of school health services. Olagunju (2011) asserted that health personnel such as physician, nurses, dentist, first aider, health educator and fitness trainer if readily available will help in the implementation of school health services. He further stated that qualified health personnel know what to do at the appropriate time such as appraising the health of the students, carrying out referral where necessary. Health facilities and equipment also form key part in the provision of school health services in the school. Ademuwagun (2006) reported that provision of health facilities and equipment will help towards the implementation of school health services. Health facilities and equipment such as first aid box, sick boa, clinic, and nutritional services form the bedrock on which school health services are implemented and once they are not on ground, it will be difficult for health personnel to operate. The third findings which shows that funding, will have significant influence on implementation of school health services also agree with Akinlolu, Kolebaje and Adeboluwakun (2004) which stated that inadequate and poor funding were responsible for inadequate implementation of school Health services. Constant provision of funds and proper spending of these funds are needed to purchase health materials and equipment that are useful in school "health services. The expired products in the first and box needs to be changed and also other health services that needs cogent attention.

Conclusion

The study thus concluded that although school health services are presents in virtually all the fifteen schools assessed but they are not adequate and fully utilized. It also revealed that adequate and qualified personnel, health facilities and equipment, and proper funding will all have significant influence towards the implementation of school health services. School health services implementation would create a platform on which students and staff can enjoy quality and also promote harmonious relationship.

Recommendations

Based on the outcome of this study, the following were therefore recommended;

- Government through the Ministry of Education, Ministry of Health and other stakeholders in education should ensure that school health services are fully utilized and implemented in each school. School health services should also serves as criteria and one of the standards to be met in the opening of schools.
- School administration should also ensure that adequate and qualified personnel such as physician, nurses, health educator, nutritionist and physical trainer should be available to further enhance the implementation of school health services.
- Public and private schools should provide avenue for proper funding and provision of health facilities and equipment which will enhance full implementation of school health services.

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IMPACT OF FINANCIAL AND INVENTORY RECORDS KEEPING ON THE ADMINISTRATION OF PUBLIC SECONDARY SCHOOLS IN ZARIA EDUCATION ZONE, KADUNA STATE

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Abstract

The study investigated the impact of financial and inventory records keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State. The study was embarked upon with the objectives to: examine the impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State; and ascertain the impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State. These objectives were transcribed into two research questions and two hypotheses respectively. The study employed the use of descriptive survey research design. The target population of the study was made up of 46 principals, 1183 teachers and 12 education officials from Zaria Local Government Area, Kaduna State. A sample size of 9 principals, 237 teachers and 2 education officials, totalling 248 respondents were used in the study. The study sample size represented 20% of the entire population and was drawn using random sampling technique. The instrument titled “school records and administration of public secondary schools questionnaire (SRAPSSQ)” was used for data collection in the study. The instrument was pilot tested and reliability coefficient of 0.79 was obtained. The data collected in study was analysed using descriptive statistics of frequency, mean and standard deviation to answer the research questions, while analysis of variance (ANOVA) statistics was used to test the hypotheses at 0.05 level of significance. Findings of the study shows that financial record and inventory record keeping significantly impacted on the administration of public secondary schools in Zaria Education Zone, Kaduna State. Recommendations were made, among which that Principals and bursars should employ ideal administrative practices and strategies to improve on financial record keeping management in secondary school system towards ensuring valid and reliable school financial information.

Keywords: Records, Financial Records, Inventory Records, Administration, Secondary School, etc

Introduction

A record according to Chifwepa (2010) is defined as a documented proof of a transaction. This can refer to any activity which falls within the normal routine of an organisation. Records, therefore, are an important means of accountability because they provide proof. For example, there are instances when a

school has to ask for certain facilities from the Ministry of Education or any other funding organisation. Unless the school can show that it does not have adequate facilities or that it has admitted more students, it is difficult for the funding organisation to justify sending any of the requested items. School records are official documents, books and files containing essential and crucial information on actions and events which are kept and preserved in the school offices for utilization and retrieval of information when needed (Durosaro, 2002). This study focuses on financial and inventory school records.

Financial records contain the essential information on revenue and expenditure. They can, therefore, at a glance, give an overview of a school's revenue and expenditure details. Financial records provide the school administration with a financial summary of each term and year. Finances are essential to carrying out school activities. Like other resources, finances require strict regulation and management (Ministry of Education, 2019). Financial records need to be maintained for auditing and reporting purposes. Funding agencies and parents who make financial contributions to a school like to know how their contributions are being used. By keeping financial records the school is able to make this information available. Financial records reflect a school's revenue. They record the finances paid to the school by students as well as any other funds which the school may have received or generated.

Inventory is another important school record. It is the record of major equipment and facilities in the school (Alabi, 2017). Such facilities include the buildings, furniture, vehicles, generating plants, mowers, tractors, and so forth. The date, the time, and the value at the construction of the building or the purchase of the materials are recorded down. It helps in keeping track of the major facilities of the school. It also helps to monitor or indicate the depreciation of the facilities and equipment. Inventory records help the school principal to know when the school property has disappeared and how to recover it, it helps the head to make handover note to his/her successor, it enables the state education board officials to know exactly how adequate or inadequate the supplies are carefully used.

In the opinion of Omoha (2013), all school records are very useful, school records must be complete and be made available when the need arises. Records, which are not regularly kept, will be incomplete and misleading, badly kept records can hinder the progress and effective administration of the school. The school leader must see that school records are devoid of exaggerated reports or untrue statements. Durosaro (2002) stated that, records are important tools for effective planning and administration of a school. School records occupy strategic position in the effective and efficient organization and administration of the school.

Administration here refers to the planning, controlling, organising, staffing, leading, coordinating and directing of available resources (Adeleke, 2001). When an administrator or school principals is able

to successfully manage all the school's instructional programmes and their various educational activities in the school, monitor teachers', their progress and job performance, using their records and appropriately recommend them for staff development to the appropriate authority, motivating them accordingly through various welfare schemes such as recommending them for promotions when due and being interested in their personal matters, then one can describe such an administrator as an effective administrator.

Statement of the Problem

Despite the core value of effective record keeping in school system, many public secondary schools in Zaria Education Zone, Kaduna State still leave much to be desired in terms of effective records keeping. Many principals have complained of falsification of data among staff, and several times, supervisors from state ministry of education and local government education authority have also recorded high falsification of school data by school heads and teachers. It has been observed that principals most often do not provide accurate number of students on enrolment during P.T.A levy account, among others. The record of finances in our schools leaves little or nothing to be desired as it has the capacity to impede on effective management of schools. The school heads seem to have poor inventory record keeping and thus end up falsifying, and that has the tendency of undermining the goals of secondary education.

Almost all the secondary schools in Zaria Education Zone, Kaduna State have not been able to adopt an enhanced information management system to improve upon their administrative tasks. A close observation of public secondary schools in Zaria Education Zone, Kaduna State reveals that majority of the school head and teachers are still using manual record keeping system, which involves the use of office file, pen, paper, pencil to process records (Benjamin, 2002). This is one of the reasons why school administrations are not performed effectively and productively, in terms of accuracy, neatness, and easy retrieval of information required. Schools' administrators do not attach much importance to the use of information and communication technologies (ICT); for instance, computers and other information management tools/devices for proper record keeping. That is why it becomes difficult for them to share files and documents within the educational sector in the state. This study thus examined the impact of financial and inventory records on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

Objectives of the Study

The study was embarked upon with the objectives to:

- 1- examine the impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State; and

- 2- ascertain the impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

Research Questions

The following research questions were answered in the study:

- 1- What impact does financial record keeping have on the administration of public secondary schools in Zaria Education Zone, Kaduna State?
- 2- What is the impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State?

Research Hypotheses

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

- H0₁: There is no significant impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State.
- H0₂: There is no significant impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

Methodology

The study employed the use of descriptive survey research design. The population of the study includes 46 principals, 1183 teachers and 12 education officials from Zaria Local Government Area, Kaduna State (Ministry of Education, Science and Technology, Kaduna State, 2017). A sample size of 9 principals, 237 teachers and 2 education officials were sampled from the study area, making the total of two hundred and forty eight (248) respondents used in the study. The study sample size represented 20% of the entire population and was drawn using random sampling technique. The instrument titled “school records and administration of public secondary schools questionnaire (SRAPSSQ)” was used for data collection in the study. The questionnaire used was validated by experts in the field of educational administration and planning, pilot tested and a reliability coefficient of 0.78 was obtained. Data collected in the study were presented in tabular form and responses were calculated in percentages followed by detailed interpretation. Descriptive statistics such as frequency counts, mean and standard deviation were used to answer the research questions while Analysis of Variance (ANOVA) was used to test the eight null hypotheses at 0.05 level of significance.

Results

Research Question One: What impact does financial record keeping have on the administration of public secondary schools in Zaria Education Zone, Kaduna State?

The study sought the opinions of principals, teachers and education officials in order to provide answer to this research question. The summary of analysis made in respect to research question one is presented in table 1:

Table 1: Impact of Financial Record Keeping on the Administration of Public Secondary Schools in Zaria Education Zone, Kaduna State

SN	Item	Respondents	Mean	SD
1.	Keeping of unaltered financial records facilitates effective school administration.	Principals	2.778	1.301
		Teachers	3.063	1.175
		Edu Officials	2.712	1.000
2.	Financial record gives information about income and expenditures of the school.	Principals	3.333	1.118
		Teachers	3.232	1.299
		Edu Officials	2.877	0.971
3.	High rate of pupils attrition especially in the rural areas affects effective financial record keeping in schools.	Principals	3.888	1.166
		Teachers	2.877	1.130
		Edu Officials	3.188	0.927
4.	Timely supply of accurate financial record enables the school head to properly plan for school effectiveness.	Principals	3.000	1.224
		Teachers	2.827	1.096
		Edu Officials	2.833	0.927
5.	The under staffed bursary department charged with collecting financial statistics seriously affect effective school administration.	Principals	3.222	1.092
		Teachers	3.126	1.004
		Edu Officials	2.666	1.118
6.	Inadequate financial record keeping frustrates the efforts of school head at acquiring valid and reliable data.	Principals	3.222	1.301
		Teachers	3.506	0.928
		Edu Officials	2.911	0.922
7.	Accurate keeping of financial record promotes accountability and prevent corrupt and sharp practices.	Principals	3.879	0.971
		Teachers	4.033	1.279
		Edu Officials	3.598	0.951
Average Mean			3.18	1.09

Table 1 revealed that financial record keeping had impact on the administration of public secondary schools in Zaria Education Zone, Kaduna State. The table presents the average

response mean of 3.18 which is higher than the rating mean of 3.0. The implication of this result is that, accurate keeping of financial record promotes accountability and prevent corrupt and sharp practices in schools. Therefore, item number 7 on the table attracted the highest response mean of 3.879 for principals, 4.033 for the teachers and 3.598 for education officials. Detail shows that a total of 2 principals agreed, 4 stayed undecided, 1 disagreed, while 2 strongly disagreed with the item. Also, a total of 23 teachers strongly agreed while 87 agreed, against 62 that stayed undecided while 17 disagreed and 48 teachers that strongly disagreed. In like manner, the 1 education official used in the study stayed undecided and 1 that strongly disagreed with item number 7 on the table.

Research Question Two: What is the impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State?

The study sought the opinions of principals, teachers and education officials in order to provide answer to this research question. The summary of analysis made in respect to research question two is presented in table 2:

Table 2: Impact of Inventory Record Keeping on the Administration of Public Secondary Schools in Zaria Education Zone, Kaduna State

SN	Item	Respondents	Mean	SD
1.	The school inventory record helps the school head to know the running and maintenance cost of the school.	Principals	2.900	1.500
		Teachers	3.924	1.235
		Edu Officials	3.000	0.110
2.	Keeping of inventory record helps the school principal to know when the school property has disappeared and how to recover it.	Principals	3.711	1.224
		Teachers	2.964	1.258
		Edu Officials	3.000	0.707
3.	School inventory record enables the state education board to know exactly how adequate or inadequate the supplies of materials are carefully used.	Principals	2.883	1.414
		Teachers	2.717	1.196
		Edu Officials	4.010	0.041
4.	Keeping and updating of inventory record gives the true conditions of facilities in order to determine repairs, replacements and new construction.	Principals	3.734	0.781
		Teachers	4.835	1.242
		Edu Officials	4.800	0.041
5.	Keeping of accurate inventory record provide cost information for budgetary purpose.	Principals	2.988	1.054
		Teachers	3.075	1.013
		Edu Officials	3.510	0.171
6.	School inventory record helps	Principals	3.227	0.971

	the school head to make handover note to his/her successor.	Teachers	2.936	1.160
		Edu Officials	3.055	0.117
7.	The school inventory record enables the school head to know the cost for replacement purpose.	Principals	2.556	0.527
		Teachers	2.388	1.285
		Edu Officials	2.885	2.121
Average Mean			3.29	0.79

Table 2 revealed that inventory record keeping had impact on the administration of public secondary schools in Zaria Education Zone, Kaduna State. The table presents the average response mean of 3.29 which is higher than the rating mean of 3.0. The implication of this result is that, keeping and updating of inventory record gives the true conditions of facilities in order to determine repairs, replacements and new construction. Therefore, item number 4 on the table attracted the highest response mean of 3.734 for principals, 4.835 for the teachers and 4.800 for education officials. Detail shows that a total of 4 principals strongly agreed with item number 4, while 3 stayed undecided, against 2 principals that strongly disagreed with the item. Also, a total of 111 teachers strongly agreed, while 44 teachers agreed, against 22 that stayed undecided while 59 disagreed and 1 teacher that strongly disagreed. In like manner, 2 education officials strongly agreed with item number 6 on the table.

Hypotheses Testing

This segment presents the result of the hypotheses tested in the study using analysis of variance (ANOVA) statistics at 0.05 level of significance.

Hypothesis One: There is no significant impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

The study gathered the opinions of principals, teachers and education officials in order to test this hypothesis. The summary of analysis made in respect of hypothesis one is presented in table 3:

Table 3: Summary of Analysis of Variance (ANOVA) Statistics on the Impact of Financial Record Keeping on the Administration of Public Secondary Schools in Zaria Education Zone, Kaduna State

Status	Sum of Squares	df	Mean Square	F-ratio	F-critical	Prob.
Between Groups	7.682	2	3.841	5.251	2.61	.004
Within Group	275.041	246	.731			

Status	Sum of Squares	df	Mean Square	F-ratio	F-critical	Prob.
Between Groups	7.682	2	3.841	5.251	2.61	.004
Within Group	275.041	246	.731			
Total	282.723	248				

Table 3 revealed the f-ratio value of 5.251 at 246 degrees of freedom and at 0.05 level of significance. The critical value (2.61) is less than f-ratio value (5.251), the probability level P(.004) is less than 0.05 level of significance. This means that there is significant impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State. Consequently, the null hypothesis is rejected.

Hypothesis Two: There is no significant impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

The study gathered the opinions of principals, teachers and education officials in order to test this hypothesis. The summary of analysis made in respect of hypothesis two is presented in table 4:

Table 4: Summary of Analysis of Variance (ANOVA) Statistics on the Impact of Inventory Record keeping on the Administration of Public Secondary Schools in Zaria Education Zone, Kaduna State

Status	Sum of Squares	df	Mean Square	F-ratio	F-critical	Prob.
Between Groups	17.860	2	8.930	4.246	2.61	.001
Within Groups	525.264	246	1.397			
Total	543.124	248				

Table 4 revealed the f-ratio value of 4.246 at 246 degrees of freedom and at 0.05 level of significance. The critical value (2.61) is greater than f-ratio value (4.246), the probability level of significant P(.001) is less than 0.05. This means that there is significant impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State. Consequently, the null hypothesis is rejected.

Summary of Major Findings

The following findings were discovered in the study:

1. Financial record keeping had positive impact on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

2. Inventory record keeping significantly impacted on the administration of public secondary schools in Zaria Education Zone, Kaduna State.

Discussions

The findings on research question one showed that financial record keeping had impact on the administration of public secondary schools in Zaria Education Zone, Kaduna State. This finding is explained in the perspective of the fact that, accurate keeping of financial record promote accountability and prevent corrupt and sharp practices in schools. Consequently, hypothesis three which stated that there is significant impact of financial record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State was rejected. This finding agreed with the findings of Ereh and Okon (2015) that there is a significant relationship between keeping of financial records, teachers' records, students' records and administrative effectiveness of principals of public secondary schools.

The findings on research question two showed that inventory record keeping had impact on the administration of public secondary schools in Zaria Education Zone, Kaduna State. This finding is explained in the perspective of the fact that, keeping and updating of inventory record gives the true conditions of facilities in order to determine repairs, replacements and new construction. Consequently, hypothesis four which stated that there is no significant impact of inventory record keeping on the administration of public secondary schools in Zaria Education Zone, Kaduna State was rejected. This finding upheld the research finding of Ibraheem (2010) which stated that inventory record keeping in schools provide data needed for planning and decision making by school heads, ministries of education and related educational authorities.

Recommendations

Based on the findings of the study, it was recommended that;

1. Principals and bursar should employ ideal administrative practices and strategies to improve on financial record keeping management in secondary school system towards ensuring valid and reliable school financial information.
2. Kaduna State Government should organize seminars for principals, teachers and bursars, registrar and other staff on proper inventory record keeping for administrative effectiveness.

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