International Journal of Multidisciplinary
Research and Growth Evaluation

Knowledge of cervical cancer screening measures by female primary school teachers in Enugu state, Nigeria

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Abstract

Many countries in Africa including Nigeria seem to have no plan in their budget for cervical cancer prevention when compared to other health issues. This continues to lead to increasing morbidity and mortality from cervical cancer. This descriptive survey determined the knowledge of cervical cancer screening measures among female primary school teachers in Enugu State. This study covered 1177 state-owned primary schools clustered in six Educational Zones of the state. Sample of 381 respondents was drawn from the population through Taro Yameni formula for sample size calculation. Cluster sampling technique was used to cluster the schools into rural and urban/semi-urban locations. Selection of the participants for the study per school was also through simple random sampling technique. The instrument used for data collection was researchers'-structured and validated questionnaire which was tested for internal consistency using Spearman Brown Correlation formula with reliability index of 0.98. Face to face administration of the instrument was done by the researchers with return rate of 99.5%. Data generated from the study were analyzed through descriptive and inferential statistics using SPSS Version 21. Null hypotheses for the study were tested with chi-square at 0.05 level of significance. The study revealed that female primary school teachers had moderate knowledge of cervical cancer screening measures. Study also indicated that age does not play significant role in the knowledge of the female primary school teachers on cervical cancer screening measures (df=3;Cal.=49.1;Cri.= 7.8). Location of the female primary school teachers does not play significant role in the knowledge of the female primary school teachers on cervical cancer screening measures(df=2;Ca;.28.99; Cri. 5.99) but marital status plays role in their knowledge of cervical screening measures with df=3;Cal.=2.24;Cri.7.82).Based on the findings the researchers call for more enlightenment campaign on cervical cancer screening measures for the teachers to enable them pass the information to their fellow women and students under their watch. This will go a long way in reducing the morbidity and mortality rate emanating from cervical cancer.

Introduction

Globally, cervical cancer is one of the more common forms of carcinoma among women resulting to high morbidity and mortality (Kileo, *et al*, 2015) [11] and is the fourth most common cancer affecting women (Manikandan, *et al*., 2019) [12]. Cervical cancer causes an estimated 266,000 deaths worldwide (Nwobodo & Ba-Break, 2015) with 80% of the cases occurring in developing countries (Jassim, *et al*, 2018) [10]. Indeed cervical cancer is the most common genital tract malignancy among women in Nigeria (Olubodun, *et al*, 2019; Ifemelumma, *et al*, 2019) [19, 9]. In countries like Europe, North America and Japan, there prevails comparatively low occurrence rate of this disease to the tune of about 10/100,000 of women; while the magnitude in sub-Saharan Africa often records higher (Utoo, *et al*, 2013) [21]. Apparently, cervical tumor poses a serious general health challenge to the females in poor resource areas like South and Central America and African nations, where this has remained the major disease within the women folk. The increased burden of cervical melanoma in those nations is caused mainly by Human Papilloma Virus (HPV) contamination and absence of a good cervical cancer screening programme (Oyedunni & Opemipo, 2012) [20]. Cancer of the cervix is preceded by a curable premalignant stage which can be detected by screening and can also be prevented by HPV immunization (Olubodun, *et al*, 2019) [19].

Cervical cancer is preventable with appropriate measures and its devastating effect preventable if detected early (Nwobodo & Ba-Break, 2015; Ifemelumma, *et al*, 2019) [18, 9] yet its burden is still huge in Nigeria. Improving uptake of cervical cancer

screening will reduce the burden of the disease (Nwobodo & Ba-Break, 2015). Indeed, effective screening for early detection and treatment of cervical cancer is a cornerstone of prevention (Vhuromu, *et al*, 2018; Jassim, *et al*, 2018) [22, 10]. Arguably, lack of knowledge and awareness can result in underutilization of the preventive strategies and poor knowledge of cervical cancer is seen as a disease (Heena, *et al*, 2019) [7]. Oyedunni and Opemipo (2012) [20] assert that even in places that have efficient screening system, lack of understanding and people's negative attitude contribute to inadequate use of these services.

Oyedunni and Opemipo (2012) [20] further assert that cancer of the cervix was rated second after breast cancer as the most common cancer problem within the women folk in Nigeria and about 24.8% women population are thought to be HPV positive in a particular time. In Nigeria the incidence rate is 77/1000 women (Adewole, 2011) [1]. The current evaluation in Nigeria has a number of fresh incidences at 25,000 per annum, though in the North Central, statistics were unavailable (Biobaku, *et al*, 2015) [2]. The increasing occurrence of cervical malignancy emerging in country like Nigeria points towards the problem of inadequate access to health care.

In an investigation carried out by Hyacinth, *et al* (2012) [8] in Jos - Nigeria, it was documented that a yearly occurrence rate of the HPV is 77/1,000 with death rate of about 3000-8000. Evidence shows that in spite of the awareness of the virus and the relevance of the test among women health workers, usage of the services is on the lower side (Oyedunni & Opemipo, 2012) [20]. Supportably, despite the high level of awareness of cervical cancer screening, utilization remains low (Ifemelumma, *et al*, 2019) [9]. There is need to explore some variables that affect knowledge of cervical cancer screening services.

Adewole (2011) [1] documents that a significant link exists between poverty and high rate of occurrence of cervical malignancy in poor African countries; like, Nigeria with notable high rate of occurrence and a corresponding low proportion of test in comparison with other countries whose awareness rated more. Several researchers, Geebreegziabher, *et al*, (2016) opined that rising rate of knowledge do not transform to high usage, since research among health personnel who possess high knowledge showed low use as those who are not connected to health environment. This study therefore seeks to investigate the knowledge of cervical cancer screening services among female teachers in the primary schools in Enugu State.

Statement of the Problem

The reported high prevalence of positive smears and the increased rates with increasing age may be related to the absence of an effective screening programme in Nigeria (Chukwuali, 2003) [5]. Bisi-Onyemaechi, *et al*, (2018) [3] assert that despite high prevalence of Humn Papilloma Virus infections and cervical cancer in Nigeria, utilization of the HPV Vaccine as highly effective preventive measure remains low. According to Chukwuali, (2003) [5] utilization of the subsidized cervical cancer screening service in Enugu is very poor. Could this report be likened to the knowledge of the people on cervical screening or has the approach changed over time?

These reports in the mist of health enlightenment campaign on the need for screening for early detection of cervical make the researchers to wonder whether the women in Enugu State,

Nigeria are aware of the benefits of cervical screening. If they are aware, what is the level of their knowledge on the screening practices? Knowledge of the screening practices at grass root will go a long way in ameliorating the present situation but the question still remains whether those that will pass the information at the early stage of life are aware of the screening practices. This study therefore determined the knowledge of the primary school teachers in Enugu state on cervical screening services.

Research Question

What is the level of knowledge of cervical cancer test measures possessed by female primary school teachers in Enugu State?

Hypotheses

Ho1: There exists no considerable variation in the level of knowledge of cervical cancer testing measures in younger and older female primary school teachers in Enugu State.

Ho2: There exists no significant variation between the urban and rural female primary school teachers in Enugu State on their level of knowledge of cervical cancer screening measures.

Ho3: There is no significant difference on responses between married and unmarried female primary school teachers in Enugu State on their level knowledge of cervical cancer screening measures.

Material and method

A descriptive survey research design was applied in this study among female primary school teachers in Enugu State, Southeast Nigeria. Enugu State is made up of seventeen (17) Local Government Areas each with numerous primary schools to cover the educational needs of the teeming children population in the state. This study covered 1177 state-owned primary schools clustered in six Educational Zones of the state.

Population for the study comprised of all 8229 female primary school teachers in Enugu State irrespective of state of origin. Cluster sampling technique was used to cluster the schools into rural and urban/semi-urban locations in the 17 LGA. A total of 34 schools were randomly selected from the 17 LGAs, two schools from each (one rural and one urban/semi urban). Selection of the participants for the study per school was also through simple random sampling technique.

Sample of 381 respondents was drawn from the population through Taro Yameni formula for sample size calculation.

The instrument used for data collection was two-section researchers'-structured and validated questionnaire which was tested for internal consistency using Spearman Brown Correlation formula with reliability index of 0.98. Face to face administration of the instrument was done by the researchers with return rate of 99.5%. Data generation for the study lasted for seven (7) months.

Data generated from the study were analyzed through descriptive and inferential statistics using SPSS Version 21. Null hypotheses for the study were tested with chi-square at 0.05 level of significance. Decision on knowledge level of the participants was based on 80-100% as very high knowledge, 60-79% high knowledge, 40-59% Moderate knowledge while 0-39% low knowledge. The researchers observed ethical issues such as consent of the respondents, voluntary participation, confidentiality and avoidance of harm

(physical and psychological).

Results
Demographic data

Table 1: Demographic data of the respondents n=379

Item	Frequency	Percentage (%)
Age(years)		
20 - 29	57	15.04
30 – 39	70	18.47
40 – 49	113	35.09
50 – 59	137	36.14
Location		
Rural	267	70.45
Urban	112	29.55
Marital status		
Married	345	91.03
Single	34	8.97

Table shows that greater number of the respondents 134(36.14%) fall within the age bracket of 50 – 59 years and lesser number 57 (15.04%) fall within 20 – 29 years. Mean age and SD of the respondents (47.7±7.73). Majority of the respondents 112(29.55%) teach in schools located in urban/semi urban areas of the state while 267(70.45%) teach in schools located in rural areas. Also greater number of the respondents 345(91.03%) are married.

Research Question
What is the level of knowledge of cervical cancer screening measures possessed by female primary school teachers in Enugu State?

Table 2: Level of Knowledge of Cervical Cancer Screening Measures Possessed by Female Primary School Teachers in Enugu State. n=379

S/n	Cervical Cancer	yes		No		Decision
		Freq	%	Freq	%	
1	Visual inspection with	350	92.3	29	7.7	VHK
2	Visual inspection with lugols iodine	160	43.2	219	57.8	MK
3	Pap smear	370	97.6	9	2.4	VHK
4	HPV Deoxyribonucleic acid test for virus	120	31.6	259	68.34	LK
5	Liquid based cytology	9	2.4	370	97.6	LK
6	Cervical biopsy	200	52.8	179	47.2	MK
7	Pelvic examination	260	68.6	119	31.4	HK
8	Colposcopy	30	7.9	349	92.1	LK
9	Group and personal health education on cervical cancer disease	370	97.6	9	2.4	VHK
10	Immunization against cervical cancer	100	26.4	279	73.6	LK
	Average	197	51.97	182	48.3	MK

Average 197 51.97 182 48.3 MK
NB: VHL= Very high knowledge, HK=High knowledge, LK=Low knowledge, MK= Moderate knowledge
Table shows that 350 female primary school teachers representing 92.3% have very high knowledge of visual inspection with acetic acid, 370 for pap smear, 370 for group and personal health education. Those having high knowledge include 68.6% for pelvic examination; those with moderate knowledge include 43.2 for visual inspection with Lugol's iodine and 52.8 for cervical biopsy while those with low and very low knowledge range from 2.4 - 31.6% of liquid based cytology, colposcopy, immunization and HPV as shown in the table. On the average 197 (51.97%) female teachers indicating that majority of the respondents have moderate knowledge of cervical cancer screening measures.

Hypotheses Testing
Ho1: The level of Knowledge of Cervical cancer screening measures possessed by the younger and older female primary school teachers in Enugu State is not significantly different

Table 3: Chi-square test of difference between the extent of knowledge of cervical cancer screening measures among younger and older female primary school teachers in Enugu State n=379

Level of Knowledge	Age				Total	Df	X^2 – Cal	X^2 – Cri	Decision
	Young	N	Old	N					
	20-29	30	40-49	140					
	30-39	99	50-59	110					

Level of Knowledge				Df	X² Cal	X² Cri	Decision
Very High Knowledge	51	125	176	3	49.1	7.8	Reject Ho
High knowledge	13	25	38				
Moderate knowledge	26	25	51				
Low knowledge	39	75	114				
Total	129	250	379				

Table 3 shows that the calculated value of x^2 at 0.05 level of significance is 49.1 while the critical value is 7.8. as the calculated value is more than the critical value therefore the null hypothesis is rejected indicating that age has effect on the level of knowledge of cervical cancer screening measures.

Ho2: There exists no significant difference in the knowledge level of female teachers in urban and rural primary schools in Enugu State on cervical cancer screening measures

Table 4: Difference in the level of knowledge of cervical screening measures between the urban and rural female primary school teachers of in Enugu State n=379

Level of Knowledge	Location		Total	Df	X² Cal	X² Cri	Decision
	Urban **n = 112**	**Rural** **n = 267**					
Very High Knowledge	45	107	152	2	28.99	5.99	Reject Ho
High knowledge	0	53	53				
Low Knowledge	67	107	174				
Total	112	267	379				

Table shows that calculated value is 28.99 while the critical value is 5.99. The hypothesis is therefore rejected indicating that location has effect on the level of knowledge of cervical screening measures possessed by the female primary school teachers.

Ho3: There is no significant difference between married and unmarried female primary school teachers in Enugu State on their level knowledge of cervical cancer screening measures

Table 4: Chi-square test of difference between the responses of married and unmarried female primary school teachers in Enugu State in their level of knowledge on cervical cancer screening measures n=379

Level of Knowledge	Marital Status		Total	Df	X² Cal	X² Cri	Decision
	Single	**Married**					
n = 34		**n = 345**					
Very high Knowledge	10	138	148	3	2.24	7.82	Accept Ho
High Knowledge	3	35	38				
Moderate Knowledge	7	69	76				
Low Knowledge	14	103	117				
Total	34	345	379				

Table shows that the calculated value is 2.24 while the critical value is 7.82, the null hypothesis is therefore accepted showing the existence of no significant difference among married and unmarried female primary school teachers in their level of knowledge of testing measures for cervical malignancy.

Discussion
Findings from the study revealed that the female primary school teachers in Enugu State have moderate knowledge of cervical cancer screening measures with average of 51.97%. They are mostly aware of Pap smear test (97.6%), pelvic examination (68.6%) and Visual inspection with acetic acid (92.3%). This finding concurs with the finding of Ndikom and Ofi (2012) where inadequate knowledge on cervical cancer prevalence and its preventive measures was their major finding. A study by Mcfarland (2003) showed that partakers in the lesser resource group had less knowledge or inadequate awareness on the issue of cervical malignancy and its preventive measures. Olubodun, *et al* (2019) [19] also reported that knowledge of cervical cancer, screening and Human papilloma virus (HPV) immunization was poor as only few (12.8%) of women had heard about cervical cancer. Findings also revealed that significant difference exists between the knowledge of younger and older female primary school teachers in Enugu State primary school on cervical cancer testing measures. This concurs with a finding by Mingo, *et al* (2012) that older people have higher knowledge of cervical cancer screening measures. Supportably, Chidyaonga-Maseko, *et al* (2015) claimed that an association was identified amid age and awareness with low awareness in the eldest age group and the youngest age showing the age category of 18 to 24 years while age 70 and above have significant average awareness score. Regrettably, Markovic, *et al* (2005) stated that parents and guardians of younger girls in a bid to conserve their family reputation and prevent promiscuity hinder the younger women from being exposed to essential sexual health education and knowledge of cervical cancer screening measures.

Study also revealed that significant difference exists between the knowledge level of urban and rural female primary school teachers on cervical cancer testing measures. This agrees with Chidyaonga-Maseko, *et al* (2015) where they reported that level of knowledge of women in the urban area varies with that of their counterparts in the rural areas. They also reported that those living in villages had considerably decreased extent of awareness when compared to those living in cities. Mukama, *et al* (2017), also concluded in a study that living

in peri-urban and urban areas were associated with level of knowledge about cervical cancer prevention. A study by Mcfarland (2003) also showed that partakers in the less resource group had less knowledge or inadequate awareness on the issue of cervical malignancy and its prevention.

Chi square analysis of null hypothesis on difference in knowledge of cervical cancer screening measures between the knowledge level of married and unmarried female primary school teachers indicated no significant difference. This is in contrast with the findings of Chidyaonga-Maseko, Chirwa and Muula (2015) that married females have greater identification of cervical tumor risk features, than those who have never been married. Also study by Ncube *et al* (2015), showed that compared with married the single ones have lower awareness. The opinion of the researchers is that married women have greater hospital visits than the singles therefore have more opportunity to have heard about cancer screening.

Conclusion

In view of the findings, the researchers concluded that the female primary school teachers in Enugu State have moderate knowledge of cancer screening measures.

Study also indicated that age and location of the female primary school teachers in Enugu State do not play significant role in their knowledge of cervical cancer screening measures but marital status plays role in their knowledge of cervical screening measures. The moderate knowledge of these teachers call for more enlightenment campaign on the screening and utilization of the cervical cancer screening services to enable them pass the information to their fellow women, and students under their watch. This will go a long way in reducing the morbidity and mortality rate emanating from cervical cancer.

Recommendations

In view of the findings, the researchers recommended that;

1. Testing for cervical cancer should be made available at no cost to the users and screening centers should be cited close to the people
2. Government of Nigeria should increase the annual budget for the Health sector to enable the sector provide the mechanism needed for accessible cervical cancer screening for women.
3. Cervical cancer testing should be made part of existing Nigerian Federal Government Health programme like Sexual health.
4. Reproductive health matters should be included in the Nigerian Primary and Secondary schools' curriculum to the level the pupils and students will understand.

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