

Utilisation of Cervical Cancer Screening Measures by Female Primary School Teachers in Enugu State, Nigeria

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Abstract

Introduction: the Study Aimed at Determining the Extent of Utilisation of Cervical Cancer Screening Measures by Female Primary School Teachers in Enugu State, Nigeria. It Was a Descriptive Survey Study With the Sample Size Was 408 From 17 Local Government Areas. The Teachers Were Stratified Along With Age, Rural and Urban, Experienced and Inexperienced, and Marital Status. Two Schools Were Randomly Selected for the Study From Each of the Local Government Areas. The Research Question Was Answered Using Very Great Extent, Great Extent, Low Extent, and Very Low Extent. The Results Based on the 379 Copies of Valid Returned Questionnaires Were Presented Using Mean and Standard Deviation. Findings Showed That Female Primary School Teachers Utilise Cervical Cancer Screening Measures to a Low Extent With a Mean Score of 1.73. The Findings Also Revealed That Age Does Not Affect the Utilisation of Cervical Cancer Screening Measures With the Calculated Value of 1.15 and Critical Value of 1.96. Location, Experience, and Marital Status Affect the Uptake of Cervical Cancer Screening Measures Among Female Primary School Teachers.

Keywords: Cervical Cancer, Screening Measures, Utilisation

INTRODUCTION

Cervical cancer occurs in a woman's cervix resulting from sexually acquired infection by some types of human papillomavirus (HPV) and most infections with HPV resolve without causing any harm but with persistent infection, cervical cancer can occur (WHO, 2020). Infections caused by high-risk HPV account for 7.7% of cancers in developing countries, mainly cervical cancer (Bouassa, Prazuck, Lethu et al., 2017). Approximately 99% of cervical cancer cases are linked to infection with high-risk HPV (WHO, 2020). Human papillomaviruses 16 and 18 are the main causative agents of cervical cancer (Nwabichie, Manaf & Ismail, 2018). Cancer of the cervix is one of the most common malignancies among women (Kashyap, Krishnan, Kaur & Ghai, 2019) and is the fourth most common cancer in women (WHO, 2020; Arbyn, Weiderpass, Bruni et al., 2020; Ferlay, Soerjomataram, Ervik, et al., 2012). Regrettably, it continues to be a major public health problem worldwide (van Diest & Holzel, 2002; Nwabichie, Manaf & Ismail, 2018; Arbyn, Weiderpass, Bruni et al., 2020). Cervical cancer affects middle-aged women,

particularly in less-resourced countries (Arbyn, Weiderpass, Bruni et al., 2020) with about 90% of deaths in low- and middle-income countries (Layu et al., 2019). According to Ngoma and Autier (2019), the majority (87%) of cervical cancer deaths occur in the less-developed regions of the world. Undoubtedly, cervical cancer imposes a huge global burden and the incidence of cervical cancer varies considerably between developed and developing countries (Momenimovahed & Salehiniya, 2017). This disease is steadily increasing in sub-Saharan Africa, with more than 75,000 new cases and 50,000 deaths yearly (Bouassa, Prazuck, Lethu et al., 2017). Moreover, in 2018, an estimated 570 000 women were diagnosed worldwide and about 311 000 women died from the disease (WHO, 2020) as against the rate in 2012 with an estimated 528,000 new cases and 266,000 deaths (Ferlay, Soerjomataram, Ervik, et al., 2012). Regrettably, expert commentary indicates that by the year 2030, cervical cancer will kill more than 443,000 women yearly worldwide, most of them in sub-Saharan Africa (Bouassa, Prazuck, Lethu et al., 2017).

Cervical cancer is preventable with effective screening programs, yet it is the most common cancer and the leading cause of cancer-related death among women in many countries in Africa (Oketch, Kwena, Choi, et al., 2019). This disease is preceded by a curable premalignant stage which can be detected by screening and also be prevented by HPV immunization (Olubodun, Odukoya & Balogun, 2019). The increased burden of cervical melanoma is caused mainly by the absence of a good cervical cancer screening programme (Oyedunni & Opemipo, 2012). The global scale-up of HPV vaccination and HPV-based screening including self-sampling can significantly reduce the menace of cervical cancer in the near future (Arbyn, Weiderpass, Bruni et al., 2020). Though the mortality rate from cervical cancer is high globally, the trend could be reduced through a comprehensive approach that includes prevention, early diagnosis, effective screening, and treatment programmes (Layu et al., 2019). Supportably, cervical cancer screening could reduce at least 50% of cervical cancer deaths and most importantly for women aged 30–79 years (Aklimunnessa, Mori, Khan et al., 2006). Early screening for pre-cervical cancer is a key intervention in the reduction of maternal deaths (Bante, Getie, Getu et al., 2017). Indeed, prevention is possible with early and regular cervical cancer screening (Nwabichie, Manaf & Ismail, 2018) and improving uptake of cervical cancer screening will reduce the burden of the disease (Nwobodo & Ba-Break, 2015). Effective screening for early detection and treatment of cervical cancer is a cornerstone of prevention (Vhuromu, Goon, Maputle, et al., 2018; Jassim, Obeid & Al Nasheet, 2018). WHO recommends screening for pre-cancerous lesions of the cervix, which if diagnosed and treated, prevents cervical cancer and that should be for two screening tests, by ages 35 and 45, with treatment to remove screen-detected precancerous lesions (WHO, 2020). More so, there are three main pillars of Draft Global Strategy which include; prevent, screen, and treat, that capture a comprehensive approach that includes prevention, effective screening, and treatment of pre-cancerous lesions, early cancer diagnosis and programmes for the management of invasive cancer. Every country must reach the global targets by 2030 (WHO, 2020).

Although cervical cancer is a preventable disease if detected and treated early via screen and treat (Nwobodo & Ba-Break, 2015; Ifemelumma, Anikwe, Okoro-chukwu, et al., 2019), yet its

burden is still huge in Nigeria. WHO (2020) stated that cervical cancer is one of the most successfully treatable forms of cancer, as long as it is detected early and managed effectively. Unfortunately, a study reveals that even with a high level of awareness of cervical cancer screening among women, utilisation remains low (Ifemelumma, Anikwe, Okoro-chukwu, et al., 2019). Some variables could influence utilisation of cervical cancer screening services.

According to Ngoma and Autier (2019), cervical cancer incidence significantly increases after 20 years of age and peaks at 50 years of age. Marital status according to Chidyaonga-Maseko, Chirwa, and Muula (2015), influences the female use of cervical cancer avoidance services, particularly as it relates to testing. Women who are living with their husbands are more exposed to cervical malignancy than those that have never been married. Similarly, a study by Mingo et al (2012) revealed that elderly women with higher resources have greater access to the services than younger female folk. Evidence reveals a lack of awareness of cervical cancer and the benefits of early detection measures as critical barriers that affect women's participation in screening programs (Ngugi, Boga, Muigai et al., 2012).

This study therefore seeks to investigate the uptake of screening services of cervical cancer among female teachers in the primary schools in Enugu State, Nigeria.

Research Objective

1. To determine the extent to which female teachers in primary schools in Enugu State utilise cervical cancer screening test for cancer prevention.

Hypotheses

- Ho1: There exists no significant variation between the mean scores of younger and older women teachers of primary school on the extent of usage of cervical tumor test measures in Enugu State.
- Ho2: There exists no significant variation between the mean scores of urban and rural women teachers of primary school on the extent of usage of cervical malignancy screening measures in Enugu state.
- Ho3: There exists no significant variation between the mean scores of experienced and inexperienced primary school tutors on the extent of usage of cervical cancer testing measures.
- Ho4: There exists no significant variation between the mean scores of married and unmarried primary school tutors in Enugu State on the extent of usage of cervical malignancy screening measures.

Methods

Design: The research design used for the study was a descriptive survey design.

Setting: This investigation was conducted in seventeen (17) Local Government Areas of Enugu State, Nigeria which has 1177 State-owned primary schools within six education zones (State Primary Education Board SPEB, Statistic Division 2015).

Population of the Study: Population involves all the female primary school teachers in Enugu state comprising 8229 female teachers in the 1177 State-owned primary schools in Enugu State, Nigeria.

Sample and Sampling Method: A simple random sampling method was employed to select two schools each from the 17 LGAs to get a total of 34 schools. The same method was also used to select 12 female teachers each from the 34 sampled schools arriving at 408 female teachers.

Instrument for Data Collection: The instrument for data collection was a validated researchers' structured questionnaire which has a reliability test result of $r = 0.76$ obtained through Spearman Brown correlation formula.

Method of Data Collection: Four hundred and eight (408) copies of the questionnaire were administered to the participants by the investigators with the aid of three briefed investigation assistants. At the end of the administration of the questionnaire, 379 copies were collected giving a 93% return rate and the same was used for analysis.

Ethical Consideration: The researchers observed ethical issues such as consent of the respondents, voluntary participation, observation of rights, and confidentiality.

Method of Data Analysis: The research question was answered using descriptive statistics of mean and standard deviation. The null hypotheses were tested using z -test at 0.05 of significance. Decision Rule: Level of utilisation with a mean score of 3.50 and above was accepted as very great extent, 2.50-3.49 great extent, 1.5-2.49 low extent and 1-1.49 very low extent.

For the null hypotheses, if the z -calculated is less than the z -critical at 0.05, the null hypotheses were upheld. When the calculated p -value is greater than the critical p -value at 0.05 level of significance, the null hypotheses were rejected.

Results

Research Objective: To determine the degree to which female teachers of primary schools in Enugu State utilise cervical cancer screening test for cancer prevention.

Table 1: Mean Ratings of female teachers in primary school on their extent of utilisation of cervical cancer testing measures.

n=379

Measures	VGE	GE	LE	VLE	X	SD	Decision
1. Visual inspection with acetic acid	166	54	49	110	2.73	0.21	GE
2. Visual inspection with lugols iodine	41	62	104	172	1.93	0.15	LE
3. Pap smear	150	83	16	130	2.67	0.21	GE
4. HPV Deoxyribonucleic acid test for virus	0	0	18	361	1.05	0.18	LE
5. Liquid based cytology	0	0	12	367	1.03	0.09	LE
6. Cervical biopsy	10	25	76	268	1.41	0.11	LE
7. Pelvic examination	30	48	122	179	1.81	0.14	LE
8. Colposcopy	4	0	20	355	1.08	0.09	LE
9. Group and personal health education on cervical cancer disease	100	129	30	20	2.29	0.18	GE
10. Immunization against cervical cancer	20	10	29	320	1.29	0.10	LE

GRAND MEAN & SD **1.73 0.48 LE**

VGE - Very Great Extent, GE - Great Extent, LE - Low Extent, VLE - Very Low Extent

Table 1 showed that mean ratings of 2.73, 2.67, and 2.29 were obtained by the respondents for items 1,3, and 9, acetic acid, pap smear, and group and personal health education on cervical cancer disease respectively thereby indicating utilisation of these cervical cancer screening measures to a great extent. Conversely, low mean ratings of 1.03 -1.93 were obtained for others. A grand mean of 1.73 was obtained indicating usage of cervical malignancy testing measures to a low extent.

Hypotheses Testing

Table 2: Z -test of the difference between the mean score of younger and older female tutors in primary school on the extent of utilization of cervical tumor screening measures in Enugu State.

Age	N	\bar{X}	SD	Crit value	Cal-value	Decision
20- 29 } young	129	1.99	0.6256	1.96	1.15	Accept Ho
30 – 39 }						
40 - 49 } older	250	1.92	0.3947			
50 – 59 }						
Total	379					

Z-test of difference between the mean scores of young and older female primary school teachers on the extent of usage of cervical melanoma testing measures. The calculated value is 1.15 and the critical is 1.96. Since the calculated value is 1.15 and the critical value is 1.96, the null hypothesis is accepted concluding the existence of no considerable variation between the mean scores of young and older female primary school teachers on the extent of usage of cancer of the cervix screening measures in Enugu State.

Table 3: Z-test on the mean scores of urban and rural female teachers in primary schools on the extent of utilisation of cancer of the cervix screening measures in Enugu State.

n=379						
Location	N	\bar{X}	SD	Crit value	Cal-value	Decision
Urban	112	2.04	0.62279	1.96	5.50	Reject
Rural	267	1.69	0.07718			
Total	379					

Table 3: Z-test of the difference amid the average scores of urban and rural female primary school teachers on the extent of usage of malignancy of the cervix screening. The calculated value is 5.50 while the critical value 1.96 therefore the null hypothesis is rejected. This concludes the existence of significant differences amid the extent of utilisation between urban and rural female primary school teachers.

Table 4: Z-test of the difference between the mean scores of experienced and inexperienced tutors of primary schools on the extent of utilisation measures of cervical cancer.

n=379						
Years of Experience	N	\bar{X}	SD	Crit value	Cal-value	Decision
Low 0 - 10 years	144	1.85	0.3841	1.96	2.93	Reject Ho
High 11-20 21-29 30and above	235	1.97	0.3828			
Total	379					

The calculated z value is 2.93 while the critical value 1.96. Their null hypothesis is therefore rejected since the calculated z value is greater than the critical value under the same condition. This means that there is a significant difference between the extent of utilisation of cervical cancer screening measures by experienced and inexperienced female primary school teachers.

Table 5: Z-test of the difference between the mean scores of married and unmarried primary school teachers in Enugu State on the extent of utilisation measures of cervical cancer screening. n=379

Marital Status	N	X	SD	Crit value	Cal-value	Decision
Single	34	1.38	0.335	1.96	4.48	Reject Ho
Married	345	1.68	0.462			
Total	379					

The table shows that the calculated z value is 4.48 while the critical value is 1.96 therefore the null hypothesis is rejected. This means that there is a significant difference between married and unmarried female primary school teachers on their extent of utilisation of cervical cancer screening measures.

DISCUSSION

The extent of usage of cervical sarcoma testing measures by female teachers in primary school; findings revealed that they utilise the screening measures to a low extent with a mean score of 1.73. The result of the study agreed with the finding of Ndikom and Ofi (2012) in Ibadan that women did not utilise the services due to lack of knowledge about cervical melanoma, also a traditional constraint, values about illness, financial factors, internal gender control relations all contributed to poor usage. A study reports that only 0.7% had done a cervical cancer screening test and none had taken HPV vaccine or immunized their eligible daughters (Olubodun, Odukoya & Balogun, 2019). Another study has revealed low level of utilisation of cervical cancer screening services among female primary school teachers in Ilala municipality. Female primary school teachers with more than one previous pregnancy and those with more than one life-time sex partner were more likely to report utilisation of the service. Spouse or partners’ support was an important factor in the utilisation of cervical cancer screening services amongst the study population (Kileo, Michael, Neke et al., 2015). Regrettably, despite the free availability of cervical cancer screening services and awareness, the utilisation of cervical cancer screening services is low (Vhuromu, Goon, Maputle, et al, 2018).

More so, a study reveals that utilisation of cervical cancer screening services among the female nurses at the University College Hospital (UCH), Ibadan is low (Oyedunni & Opemipo, 2012). Personal barriers to screening include the lack of awareness, and belief that cervical cancer is not preventable (Hyacinth et al, 2012). A study reports that utilisation of screening services was very poor even among women who were aware of cancer of the cervix and screening for the disease (Utoo, Ngwan & Anzaku, 2013). Evidence shows the very poor practice of cervical cancer screening among Nigerian women (Nwankwo, Aniebue, Aguwa et al., 2011). Even though cervical cancer is preventable through early detection of precancerous lesions using Pap smear test, the patronage of this screening test is still very low in Ghana (Calys-Tagoe, Aheto, Mensah et al., 2020). Cervical cancer screening uptake among Jordanian women is significantly low (Al-amro, Gharaibeh & Oweis, 2020).

A study revealed that the uptake of cervical cancer screening was low as only 12.2% of the 425 women have been screened within the past 3 years (Woldetsadik, Amhare, Bitew et al., 2020). Additionally, evidence shows that of the 2711 women surveyed, few (8.3%) had ever had a pelvic examination while 2.4% had done a Pap smear test. For those who had a pelvic examination, only 26.94% had a Pap smear test (Calys-Tagoe, Aheto, Mensah et al., 2020). A study revealed that few (14.3%) of participants practiced cervical cancer screening as many lack comprehensive knowledge of cervical cancer (Mabelele, Materu, Ng'ida et al., 2018). Aynalem, Anteneh, and Enyew (2020) reported that the extent of usage of cervical cancer screening is very low. Interestingly, a study revealed that the uptake of cervical cancer screening in KWHD is higher than the national uptake and a majority of the participants (74.70%) had heard of cervical cancer and 43.48% had undergone cervical cancer screening (Layu et al., 2019).

Identification of high-risk populations and commencing early screening is effective in early recognition of cervical cancer (Kashyap, Krishnan, Kaur & Ghai, 2019). Women's age and marital status among others were important factors of screening (Aynalem, Anteneh & Enyew, 2020). Evidence shows that cervical cancer has a significant association with education, place of residence, young age at marriage (Kashyap, Krishnan, Kaur & Ghai, 2019). The researchers opined that the testing equipment not readily available cum other obstacles recognized in the study area may be responsible for the low usage or women not using the cervical cancer screening services at all.

Summary on the result of hypothesis 1 revealed the existence of no significant variation between the average score of younger and older female primary school tutors on the extent of utilisation of the services with a mean score of 1.15. The result is in contrast with a finding by Mingo et al (2012) that women who are older and have heard of cervical malignancy are more prone to use the screening strategies, than younger women. A study disagreed with the report by Ameilo (2013) which shared that age is a predictor of cervical cancer uptake as the younger ones do not report due to their busy lifestyles. Arbyn, Weiderpass, Bruni et al., (2020) reported that globally, the average age at diagnosis of cervical cancer was 53 years, ranging from 44 years (Vanuatu) to 68 years (Singapore). The global average age at death from cervical cancer was 59 years, ranging from 45 years (Vanuatu) to 76 years (Martinique). Additionally, cervical cancer ranked in the top three cancers affecting women younger than 45 years in 146 (79%) of 185 countries assessed (Arbyn, Weiderpass, Bruni et al., 2020).

A study revealed that few women (20.9%) had undergone screening for pre-cervical cancer indicating low uptake and ages 35–49 among others was significantly associated with higher uptake of pre-cervical cancer screening (Bante, Getie, Getu et al., 2017). Supportably, evidence shows that women in the age range of 40-49 years old were more likely to be screened (36.1%) than women age 18-29 years (8%) (Woldetsadik, Amhare, Bitew et al., 2020). A study reports that older nurses should be encouraged to serve as cervical cancer screening motivators for their junior colleagues (Oyedunni & Opemipo, 2012). Apparently, older female teachers should motivate the younger ones.

Summary of Z-test for null hypothesis 2 revealed that a significant difference exists between the extent of utilisation of cervical cancer measures between urban and rural female primary school

teachers. The finding of a study by Abimbola (2008) agreed with the result by indicating that geographical inaccessibility constitutes a serious hindrance in poor financial settings and services located where they can not be reached. Chidyaonga-Maseko, Chirwa, and Muula (2015) reported that evidence abounds that cervical cancer screening in Malawi is focused mainly in towns and semi town areas. The result is also with consistence with the finding by Bingham et al (2009) that geographical difference lingers central obstacles in many poor financial environment. The people endangered for cervical malignancy could be found in areas where treatments are not currently available. A study documents that women living in urban were more likely to be screened (15.9%) than women living in rural (3.9%) (Woldetsadik, Amhare, Bitew et al., 2020).

The findings by Lindstrom and Hernandez (2006) revealed that usage of services, cervical melanoma test strategies inclusive within the women existing in local areas differs considerably from those in townships. Bingham et al (2009) assert that locality for the service center is a crucial factor of partaking in cervical tumor screening and management programme. For some women, especially those living in communities where there is minimal access to health care, the location of the service facility is an important determinant of participation (Bingham et al, 2009). The researchers' opinion is that people in urban areas are more likely to access the services than their counterparts in the suburbs.

Summary of hypothesis 3 testing revealed the existence of significant variation in the level of utilisation of cervical cancer screening measures between experienced and inexperienced female primary school teachers. Ncube et al (2015) agreed with the result because according to them knowing somebody with cervical cancer will encourage uptake of screening. Geebreegziab her, Asefa, and Berhe (2016) argued that growing knowledge (experience) would likely not lead to increased utilisation. Their finding is supported by their investigations among health care providers, health students, and doctors with a high degree of knowledge which did not translate into usage more than those who are not in the health system. The experience does not depend on age in life but might result through interaction with people and exposure to issues related to health. Experience could result from education and that is why education may increase the knowledge of cervical cancer measures but not necessarily the utilisation of the screening services. Nurses were found to have the experience of cervical cancer based on their knowledge but the study by Udigwe (2006) showed that utilisation level is very low owing to lack of interest and workplace. His study also showed that casual screening behavior by medical staff in the country is not generally practiced by medical workers. Evidence abounds that notwithstanding the degree of awareness of the virus and the relevance of testing among women medical staff, utilisation of the services is yet low (Uto, Ngwam & Anzaku, 2013).

Summary of hypothesis 4 testing revealed that considerable variation exists in the degree of utilisation of cervical cancer screening measures between married and unmarried female primary school teachers. This finding was in line with the finding by Chidyaonga-Maseko, Chirwa, and Muula (2015) which revealed that marital status determines a female's usage of cervical tumor management services particularly in the aspects of testing. They assert that married women have a greater recognition of cervical cancer risk factors than those who have never been married.

Ncube et al (2015) reported that compared to single women, married ones are two times more likely to have had Pap smear. Ameilo (2013) also documented that those women who are in a relationship/married were among the largest number forming 93.5% that had at least one cytology in their lives than their unmarried counterparts. Evidence indicates that few of the participants underwent a Pap smear screening if they were never married (69, 23.0%) (Jassim, Obeid & Al Nasheet, 2018). A study document that women reported having positive experiences with the HPV self-sampling strategy and among the factors facilitating uptake included peer and partner encouragement (Oketch, Kwena, Choi *et al.*, 2019). According to Al-amro, Gharaibeh, and Oweis (2020), the number of years of marriage is among the determining factors for the decision to undergo cervical cancer screening. Indeed, marital status ($p=0.004$) was among the significant predictors of uptake of cervical screening among African immigrant women in Klang Valley, Malaysia (Nwabichie, Manaf & Ismail, 2018). Marital status was independently associated with undergoing the pelvic examination and Pap smear test (Calys-Tagoe, Aheto, Mensah et al., 2020). The researchers' opinion is that married women due to their regular attendance to hospitals either for pregnancy related issues are expected to be aware of cervical cancer screening due to regular communication with health care givers and also utilise the service.

Summary

The purpose of the study was to determine the extent of utilisation of Cervical Cancer Screening Measures by Female Primary School Teachers in Enugu State. The questionnaire was the instrument employed for collecting information for the study. Split-half and Spearman-Brown Co-efficient were used to determine the reliability coefficient value which was found to be 0.76. The sample used for the study analysis was 379 respondents. The research question was answered using mean and standard deviation while the null hypotheses were tested using Z-test at 0.05 level of significance. The analysis of data revealed that the female primary school teachers utilise cervical cancer screening measures to a low extent.

Conclusion

1. Female primary school teachers utilise the cervical cancer screening measures to a low extent with a mean score of 1.73
2. There exists no considerable variation between the degree of utilisation of cervical tumor screening measures among younger and older female primary school tutors.
3. There exists considerable variation between the extent of usage of cervical tumor test strategies between township and village female primary school teachers in Enugu State.
4. A significant difference exists between the experienced and inexperienced female primary school teachers on the extent of utilisation of cervical tumor test measures.
5. There exists considerable variation between the extent of usage of cervical cancer screening measures of married and unmarried female primary school teachers.

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