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Evaluation of Awareness of Susceptibility to Human Papilloma Virus and Cervical Cancer Screening among Nurses at University of Benin Teaching Hospital, Benin City, Nigeria

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Authors' Contributions

This work was carried out in collaboration among all authors. Author NEC wrote the protocol and the first draft of the manuscript. Author ECR managed the literature and collection of Data and author EA managed literature and data analysis. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Aim of the Study: The study aimed at evaluation of awareness of Susceptibility to Human Papilloma Virus and Cervical Cancer Screening among Nurses at University of Benin Teaching Hospital.
Research Design: Cross sectional descriptive survey design was used for the study.
Study Place: The place of study is University of Benin Teaching Hospital, Benin City, Nigeria.
Duration of Study: Data was collected within four weeks in December 2016.
Method of Data Collection: A validated self-structured questionnaire was utilised for data collection. A total of 281 nurses who worked in UBTH were recruited for the study. The study setting was purposively selected due the cervical cancer mortality observed among nurses in recent time. The level of significance was put at 0.05.

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Findings: The results showed that 62 (24.2%) and 153 (59.8%) of the nurses are aware of susceptibility to Human papilloma Virus and cervical cancer and its prevention, respectively. However, 116 (45.3%) exhibited a negative attitude towards the proven screening modality. Those who demonstrated negative attitude towards pap smears utilisation were less likely to utilise it. This was found to be statistically significant (chi-square = 14.899, df = 1, p value = 0.000.
Conclusion: Besides, nurses with university education exhibited positive attitude towards pap smear test more than their counterparts who had diploma education in nursing/midwifery. Similarly, older nurses exhibited a positive attitude more than the younger counterparts.
Recommendation: Intervention programmes that would focus on change of attitude of the nurses towards utilisation of cervical cancer screening were recommended. Further study on the utilisation of cervical cancer screening by these nurses were also was also recommended.

Keywords: Awareness; susceptibility; human papilloma virus; cervical cancer; nurses.

1. INTRODUCTION

Cervical carcinoma has been identified to be one of the most common cancers affecting women. Globally, cervical cancer has been described as the second most common cancer among women [1]. In 2008, cervical carcinoma was responsible for 529,409 new cases and 274,883 mortality. Out of the new cases, 86 percent occurred in developing countries [2]. In Nigeria alone, an estimated 25,000 newly diagnosed cases of cervical cancer exist [3,4]. About 75 percent of cancer cases report late to hospital and are thus diagnosed in the late stages when cure becomes elusive [1]. Utoo and Utoo [5] stated that the burden of the disease can only be reduced and controlled by the implementation of evidence based preventive measures, early detection and proper case management. The fact remains that all women of reproductive age particularly the sexually active are at risk of development of cervical cancer. However, the studies of Kim,et.al, and Spayne et al. [6,7] have shown that cervical cancer is almost completely preventable if detected and treated early. Many studies conducted across Nigeria have revealed low uptake of cervical cancer screening services among various categories of women in spite of reported high level of awareness among the women [8].

Cancer control describes the totality of activities and interventions that are intended to reduce the burden of cancer in a population either by reducing cancer incidence or mortality or by alleviating the suffering of people with cancer. Prevention, early detection, diagnosis, treatment, psychosocial support, and palliative care are components of cancer control that can reduce the cancer burden. Nigeria's Cancer Control Plan 2008-2013 is aimed at providing information and education through outreach services nationwide [9].

The use of the papanicolaou (pap) test in the early detection of cervical cancer has been proven to be very effective in the reduction of the disease rate. This is because women who develop cervical cancer are most often women who have not been appropriately screened and promptly treated [10]. Screening through the use of pap smear has resulted in the reduction in cervical cancer mortality in developed countries. The situation is still not declining in developing countries like Nigeria where it is a leading cause of cancer mortality, and it is the second most frequent cancer in women world-wide and is one of the greatest threats to woman's live [11]. In Nigeria where the population is approximately 140 million people, 40.43 million women within the reproductive age and beyond are at risk of developing carcinoma of the cervix. The WHO reports that cervical cancer's crude incidence rate in Nigeria is 19.3 per 100,000 women compared to 25.7 and 16 respectively averages for the rest of East Africa and the world.

Based on studies carried out in countries where organised screening is available, it is known that screening uptake can be influenced by cultural beliefs, the social position of women, characteristics of the health care system, the physician's attitudes towards screening and women's comprehension of the screening process. Embarrassments about undergoing a gynecological examination, fear of the procedure or belief that little can be done to prevent cancer are other factors that might decrease screening participation. Lower socio-economic background, lack of health insurance and low literacy also compromise participation in screening. Attending cervical cancer screening may have a negative connotation or stigma when it is combined with a gynecological examination and treatment for reproductive tract infections. The gender of health care professionals and limited time that they allocate to patient education may negatively

influence screening participation as well. Other influences that may influence participation in screening in particular low resource countries are gender imbalances and whether illness is perceived as traditional or modem Adequate knowledge about cervical cancer influences early detection.

In 2011 Lofter et al. [10] affirmed that health care workers are sometimes regarded as role models in health- related issues. This statement is true, because nurses (irrespective of their areas of specialty) are more viewed as one of the role models and professionals who are custodian of health- related information than other groups of health workers. It is believed that their practice with regards to screening for early detection of cervical cancer might influence people either positively or negatively. Besides, nurses spend a longer time and interact with people in and out of hospital settings. This gives them an opportunity to perform one of their vital roles of educating the populace on the benefit of regular screening for cervical cancer.

It is believed that the knowledge and practice of health workers, particularly nurses who are viewed as role models and custodian of health-related information might either positively or negatively influence the utilisation of cervical cancer screening by the populace. Besides, it was observed that University of Benin Teaching Hospital (UBTH) has lost some female nurses to cervical cancer recently. This was the basis for making cervical cancer screening free for all nurses of the institution as announced by the Chief Medical Director, UBTH. This is an issue of concern to the researchers. The reasons behind the unacceptable health behaviour require diligent inquiry. On this premise this study seeks to explore the awareness of susceptibility to human papilloma virus and cervical cancer screening among nurses at UBTH, Benin City, Nigeria.

2. RESEARCH METHOD

This study utilised a cross sectional descriptive survey to determine the factors influencing awareness of susceptibility to Human Papilloma virus and cervical cancer screening services among nurses in University of Benin Teaching Hospital (UBTH), Benin City, Edo State, Nigeria. The University of Benin Teaching Hospital is a 700-bedded hospital, situated on a 150-acre site along the Benin Lagos Highway. The Nursing services of the hospital which include clinical nursing, nursing education and public health nursing departments were used for the study. Target population was 758 nurses working in the hospital while the study population was 256 calculated (sample size was obtained by the use of statistical formula for population < 10,000) as stated :$\boldsymbol{nf} = \frac{\boldsymbol{n}}{\mathbf{1}+\frac{\boldsymbol{n}}{\boldsymbol{N}}}$ (Danile, 2011).

This study employed a systematic random sampling technique for sample selection. Thus, 281 registered nurses/midwives were recruited into the study out of the total population of 758 nurses in the study setting. The proportionate distribution of the sample size across the three departments was as follows:

Clinical Nursing Department	= 248
Nursing Education Department	= 21
Public Health Nursing Department	= 12
Total	**= 281**

This study utilised a self-administered questionnaire developed by the researchers for data collection. In addition, the register containing the list of users of pap smear screening services at University of Benin Teaching Hospital Centre for Disease Control (CDC) was checked to evaluate the proportion of nurses who were users of the services. The secondary data served as additional information to evaluate the utilisation of the service by UBTH nurses.

The face and content validities of the structured questionnaire was done by researchers who comparing its items with literature and matching its items with the set objectives, research questions and formulated research hypotheses.

The structured questionnaire was used for a pilot study at Uselu Psychiatric Hospital, Benin city, Edo State. The data collected during the test-retest was entered into computer and analysed. Thus, the reliability coefficient (Cronbach's alpha) of data collected from the test-retest of the pilot study was 0.7. This value is closer to 1 and it implies that the instrument is very reliable.

Prior to the commencement of data collection, copies of this research proposal were submitted to secure ethical approval from the UBTH Ethical Review Committee. In addition, informed consents was sought and obtained from all the participants prior to questionnaire administration. Participation was voluntary and any participant who might wish to withdraw at any stage of the data collection procedure were informed to feel

free to do so without any form of coercion or intimidation.

The data collection spanned four weeks to ensure that all randomly selected nurses participated in the study. Thus, 281 copies of the questionnaire were made available to participants to be completed. The researcher cross-checked the retrieved copies of the administered questionnaire for correctness and completeness on the field. Data were collected by researchers themselves. 256 questionnaire that were correctly filled were analysed.

The collected data were analysed with the aid of the Statistical Package of Social Science (SPSS) software; version 20. The frequencies and percentages of the socio-demographic variables: age, marital status and religion will be found and represented in a table, while the professional ranks, levels of education of the participants shall be represented in figures (bar and pie charts, respectively).

3. RESULTS

Table 1 presents detail information on the nurses' socio-demographic characteristics. The age of the participants ranged between 19 and 59 ± 1.05 years standard deviation. The married were 163 (63.7%). Participants who had only basic nursing education was 177 (69.1%) while 97.7% Christian.

The result of nurses perceived factors to susceptibility to human papilloma virus is show in Table 2. Among the respondents susceptible factors to Human papilloma virus are 33.2% IUCDs insertion, 38.7% use of hormonal contraceptives, 29.7%multiple parity, 13.7% early menarche,59.8% early exposure to sexual intercourse,34.8% non-uptake of HPV vaccine, 52.3% having a close relative with cervical cancer, 43.4% non-uptake of cervical cancer screening and 46.1% being a woman.

On the attitudinal scale, the nurses' score ranged between 25 and 78 points, mean score was 55.3 ± 1.05 std. Those who scored below the mean were classified having negative attitude, while those who scored ≥ mean were classified as positive attitude (Fig. 1).

Similarly, the nurses' level of knowledge on cervical cancer was measure on a scale. Their level of knowledge on cervical cancer ranged between 0 and 12 points, the mean knowledge level was 7 points ± 2.3 std. The knowledge level was categorised into three groups using the standard deviation. Thus, among the nurses, 62 (24.2%) had high level of knowledge (Fig. 2).

Table 1. Socio-demographic characteristics of participants

S/N	Socio-demographic characteristics		
	Age of participants	**N**	**%**
1.	Less than 20 years	2	0.8
2.	20 – 34 years	118	46.1
3.	35 – 59 years	136	53.1
	Total	**256**	**100**
S/N	**Marital status**	**N**	**%**
1.	Single	79	30.9
2.	Married	163	63.7
3.	Divorced/Separated	4	1.6
4.	Widow	10	3.9
	Total	**256**	**100**
S/N	**Highest level of education**	**N**	**%**
1.	Basic Nursing (RN/RM)	177	69.1
2.	BSc/BNSc (Nursing)	45	17.6
3.	BSc (other disciplines)	18	7.0
4.	MSc (Nursing)	1	0.4
5.	MSc (other disciplines)	15	5.9
	Total	**256**	**100**
	Religion	**N**	**%**
1.	Christianity	250	97.7
2.	Islam	4	1.6
3.	Religion not indicated	2	0.8
	Total	**256**	**100**

Table 2. Perceived susceptibility to Human papilloma virus and seriousness of cervical cancer

S/N	Contributing factors	Yes		No		Not sure	
		N	%	N	%	N	%
1.	IUCDs insertion	85	33.2	70	27.3	101	39.5
2.	Use of hormonal contraceptives	99	38.7	70	27.3	87	34.0
3.	Multiple parity	76	29.7	91	35.5	89	34.8
4.	Early onset of menstruation (menarche)	35	13.7	121	47.3	100	39.1
5.	Early exposure to sexual intercourse	153	59.8	36	14.1	67	26.2
6.	Non-uptake of HPV vaccine	89	34.8	51	19.9	116	45.3
7.	Having close relatives with cervical cancer	134	52.3	62	24.2	60	23.4
8.	Non-uptake of cervical cancer screening	111	43.4	60	23.4	85	33.2
9.	Being a female or woman	118	46.1	79	30.9	59	23.0

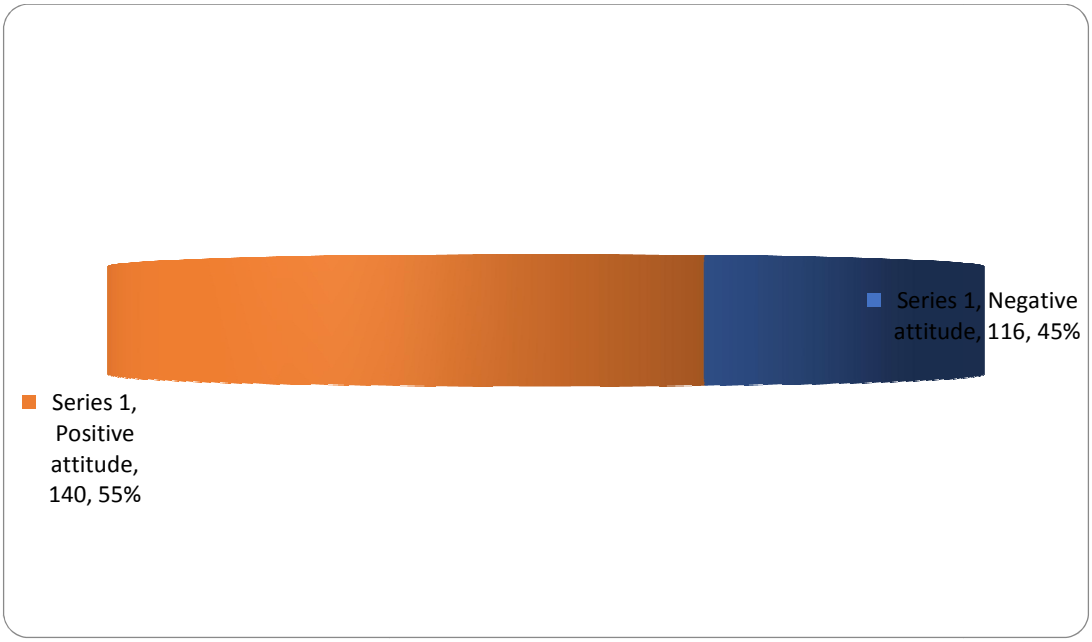

Fig. 1. Attitude of the nurses towards cervical cancer screening services

The result showed that perceived susceptibility to cervical cancer did not in any way influence utilisation of pap smear service. (Chi-square = 1.241, df = 1, P.V = 0.265).

Similarly, nurses who had practiced between 1 and 10 years were less likely to utilise pap's smear than their counterparts who had practiced for more than 10 years. This was also found to be very significant (Table 3). In the same vein, nurses who occupied nursing II/staff nurse cadre were less likely to utilised pap's smear services than their senior counterparts (Table 3, No. 3).

Educational status was equally found to influence utilisation of cervical cancer screening. Thus, nurses who had first degree in nursing and other related disciplines are more likely to utilise pap smear service than their counterparts who had basic and/or post basic training only. This was found to be statistically significant (Table 3, No. 4). Similarly, Nurses who had only basic/post basic training in nursing were less likely to utilise pap smear service in future and will more likely to exhibit uncertainty towards future use of pap smear service (Table 3, No. 5).

Furthermore, the age of the nurses were found to influence their attitude towards pap's smear utilisation and actual utilisation of the service. The older nurses were more likely to exhibit positive attitude towards utilisation of pap's

smear than their younger counterparts (Table 3, No. 6). Similarly, the older nurses showed more likelihood of utilising pap's smear services than their younger counterparts. (Table 3, No. 7).

$H_0$1: There is no significant association between nurses' perceived susceptibility to cervical cancer and utilisation of cancer preventive measures.

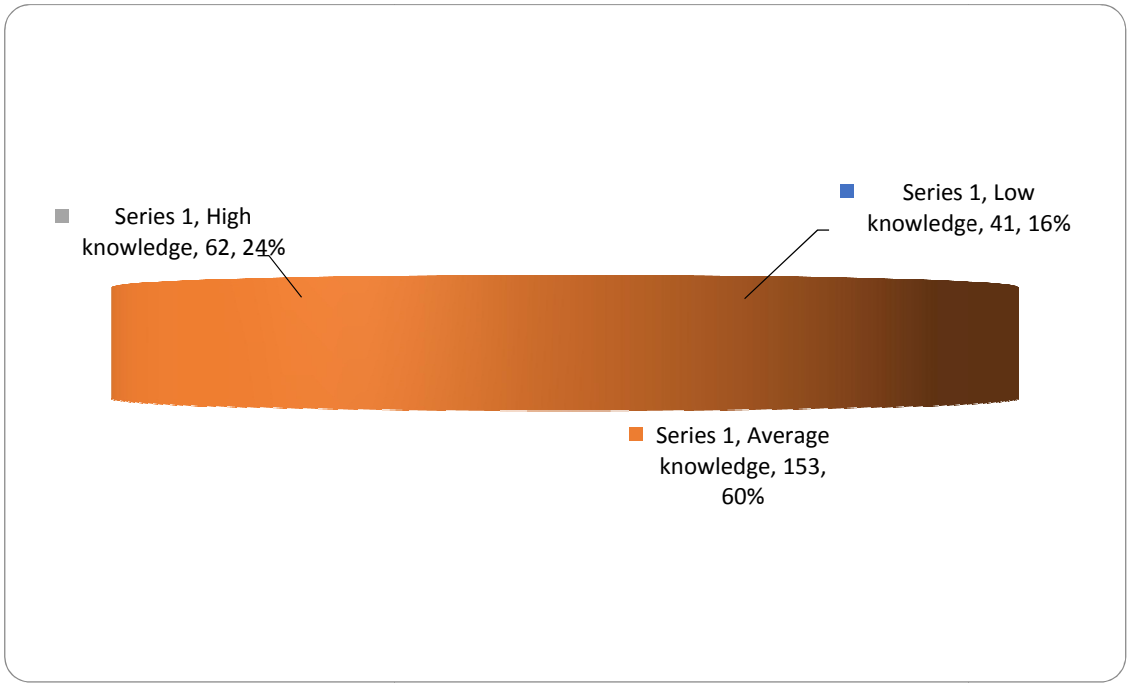

Fig. 2. Level of knowledge of cervical cancer among the nurses

Table 3. Summary of results of tested hypotheses

S/N	Independent variables	Dependent variables	Chi-square value	df	p. value	Decision
1.	Nurses' years of practice	nurses' attitude towards utilisation of cervical cancer screening	10.595	2	0.005	Significant
2.	Nurses' years of practice	nurses' utilisation of cervical cancer screening	29.142	2	0.000	Significant
3.	Nurses' professional rank	nurses' utilisation of cervical cancer screening	56.457	7	0.000	Significant
4.	Nurses' educational status	Nurses' utilisation of cervical cancer screening	10.380	4	0.034	Significant
5.	Nurses' educational status	Nurses' likelihood of future utilisation of cervical cancer screening	20.899	8	0.007	Significant
6.	Nurses' age	Nurses' attitude towards utilisation of cervical cancer screening	6.971	2	0.031	Significant
7.	Nurses' age	Nurses' utilisation of cervical cancer screening	59.358	2	0.000	Significant

The confidence interval is 0.05

4. DISCUSSION

Various factors that make women to be at risk of having cervical cancer were assessed among the nurses. Less than 30% of the nurses perceived multi-parity as a risk factor for cervical cancer. According to Kene et al. [13] perception about non-susceptibility may also be responsible for non-utilisation of cervical cancer screening. Besides, the low uptake of contraceptives among the population might likely be responsible for multi-parity reported among the nurses in this study. Therefore, further studies to identify factors for low uptake/acceptance of family planning methods may be necessary. Approximately 60 percent of the nurses who participated in this study perceived early sexual exposure as a risk factor to the development of cervical carcinoma, while, over 30 percent perceived non-uptake of HPV vaccine as a risk. Among these nurses close to 20 percent were exposed to early sexual intercourse in their teenage years. It is possible that among nurses who had the experience of first sexual intercourse between age 20 and 25 years had the experience before marriage. This behaviour which is at variance to the culture and norms of the part of the country where this study took place might pre-dispose individual to HPV infection and subsequent development of cervical cancer. Airede et al. [14] reported first sexual intercourse between 14 and 16 years, a phenomenon that has been found to be associated with the development of cervical cancer.

Furthermore, it is important to state that the population of nurses who were not sure whether the risk factors included in the question items within the questionnaires could predispose them to cervical cancer was much. For instance, approximately 40 percent were not sure that IUCDs insertion and the use of hormonal contraceptives could predispose them to cervical cancer. In addition, almost half of the nurses were not sure that non-utilisation of Human papilloma Virus (HPV) vaccine could predispose them to developing cervical cancer. Therefore, health education targeting nurses and other health workers would be of great benefit to this category of national population.

The attitude of the nurses was measured on an in-built liker's scale. The participants' attitude were computed, the minimum, maximum, mean scored were calculated and standard deviation were reported. Thus the nurses were categorised into two: positive and negative attitude. Nearly half (45%) of the population had negative attitude towards cervical cancer screening services. The attitudinal factor may lead to low utilisation of pap smear among the nurses. It is therefore suggested that study be carried out to assess Nurses utilisation of pap's smear among nurses in UBTH.

Although, only 24% of the nurses had high knowledge of cervical cancer and its prevention, those who had average knowledge of same concepts were above 60%. This implies that their knowledge did not translate into effective utilisation. Gharoro and Ikeanyi [15] observed a wide gap between female health workers' knowledge and their uptake of pap smear test in their study. This is an issue of concern, because it is expected of nurses to be a role model to other members of the public in matters relating to health promotion and illness prevention. Like an adage which says "physician, heal yourself" nurses are expected to take good care themselves so as to be in good state of health to take care of the public they are meant to serve.

5. CONCLUSION

This descriptive cross-sectional study which recruited a population sample of nurses as participants has been able to identify that nurses have a low awareness to susceptibility to Human Papilloma virus. The major factors implicated include age, education and professional ranks which may be implicated for low uptake of pap smear among the nurses as well.

6. RECOMMENDATIONS

Planning of intervention programmes to address the negative attitude of nurses towards health promoting and illness preventing services in very vital to improve the health of this category of women population. Further study to determine how these factors affect nurses utilisation of pap smear at UBTH.

CONSENT

Informed consents were sought and obtained from all the participants prior to questionnaire administration.

ETHICAL APPROVAL

Prior to the commencement of data collection, copies of this research proposal were submitted

to secure ethical approval from the UBTH Ethical Review Committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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