

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

## 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:** This 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 utilized 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.

**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 negative attitude towards the proven screening modality. Those who demonstrated negative attitude towards pap smears utilization were less likely to utilize it. This was found to be statistically significant ( $\chi^2 = 14.899$ ,  $df = 1$ ,  $p$  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 positive attitude more than the younger counterparts.

**RECOMMENDATION:** Intervention programmes that would focus on change of attitude of the nurses towards utilization of cervical cancer screening were recommended. Further study on the utilization of cervical cancer screening by these nurses were also recommended.

**KEYWORDS;** Awareness, Susceptibility, Human Papilloma Virus, Cervical Cancer, Nurses

## 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

37 can only be reduced and controlled by implementation of evidence based preventive  
38 measures, early detection and proper case management. The fact remains that all women of  
39 reproductive age particularly the sexually active are at risk of development of cervical cancer.  
40 However, the studies of Kim,et.al, and Spayne et.al, (6,7) have shown that cervical cancer is  
41 almost completely preventable if detected and treated early. Many studies conducted across  
42 Nigeria have revealed low uptake of cervical cancer screening services among various  
43 categories of women inspite of reported high level of awareness among the women.(8).

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

50 The use of the papanicolaou (pap) test in the early detection of cervical cancer has  
51 been proven to be very effective in reduction of the disease rate. This is because women who  
52 develop cervical cancer are most often women who have not been appropriately screened and  
53 promptly treated (10). Screening through the use of pap smear has resulted in reduction in  
54 cervical cancer mortality in developed countries. The situation is still not declining in  
55 developing countries like Nigeria where it is a leading cause of cancer mortality, and it is the  
56 second most frequent cancer **in women world-wide and is one of the greatest threats to**  
57 **woman's live (11).** In Nigeria where the population is approximately 140 million people,  
58 40.43 million women within the reproductive age and beyond are at risk of developing  
59 carcinoma of the cervix. The WHO reports that cervical cancer's crude incidence rate in  
60 Nigeria is 19.3 per 100,000 women compared to 25.7 and 16 respectively averages for the  
61 rest of East Africa and the world.

62 Based on studies carried out in countries where organized screening is available, it is  
63 known that screening uptake can be influenced by cultural beliefs, the social position of  
64 women, characteristics of the health care system, the physician's attitudes towards screening  
65 and women's comprehension of the screening process. Embarrassments about undergoing a  
66 gynecological examination, fear of the procedure or belief that little can be done to prevent  
67 cancer are other factors that might decrease screening participation. Lower socio-economic  
68 background, lack of health insurance and low literacy also compromise participation in  
69 screening. Attending cervical cancer screening may have a negative connotation or stigma  
70 when it is combined with a gynecological examination and treatment for reproductive tract

71 infections. The gender of health care professionals and limited time that they allocate to  
72 patient education may negatively influence screening participation as well. Other influences  
73 that may influence participation in screening in particular low resource countries are gender  
74 imbalances and whether illness is perceived as traditional or modern Adequate knowledge  
75 about cervical cancer influences early detection.

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

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

## 95 RESEARCH METHOD

96 This study utilized a cross sectional descriptive survey to determine the factors  
97 influencing awareness of susceptibility to Human Papilloma virus and cervical cancer  
98 screening services among nurses in University of Benin Teaching Hospital (UBTH), Benin  
99 City, Edo State, Nigeria. The University of Benin Teaching Hospital is a 700-  
100 bedded hospital, situated on a 150-acre site along the Benin Lagos Highway. The Nursing  
101 services of the hospital which include clinical nursing, nursing education and public health  
102 nursing departments were used for the study. Target population was 758 nurses working in

103 the hospital while the study population was 256 calculated ( sample size was obtained by the  
104 use of statistical formula for population < 10,000) as stated : $nf = \frac{n}{1+\frac{n}{N}}$  (Danile, 2011).

105 This study employed a systematic random sampling technique for sample selection. Thus,  
106 281 registered nurses/midwives were recruited into the study out of the total population of  
107 758 nurses in the study setting. The proportionate distribution of the sample size across the  
108 three departments was as follows:

109	Clinical Nursing Department	= 248
110	Nursing Education Department	= 21
111	Public Health Nursing Department	= 12
112	<b>Total</b>	= <b><u>281</u></b>

113

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

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

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

128 Prior to the commencement of data collection, copies of this research proposal were  
129 submitted to secure ethical approval from the UBTH Ethical Review Committee.  
130 Subsequently, a copy of the letter of ethical approval was attached to a letter of introduction  
131 from the Ag. Head, Department of Nursing, University of Ibadan, Ibadan to obtain entry  
132 permission for data collection from nurses in UBTH, Benin. In addition, informed consents  
133 was sought and obtained from all the participants prior to questionnaire administration.  
134 Participation was voluntary and any participant who might wish to withdraw at any stage of

135 the data collection procedure were informed to feel free to do so without any form of  
 136 coercion or intimidation.

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

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

147 **RESULTS**

148 **Table1: Socio-demographic characteristics of participants**

S/N	Socio-demographic characteristics	N	%
	<b>Age of participants</b>		
1.	Less than 20 years	2	0.8
2.	20 – 34 years	118	46.1
3.	35 – 59 years	136	53.1
	<b>Total</b>	<b>256</b>	<b>100</b>
S/N	<b>Marital status</b>	N	%
1.	Single	79	30.9
2.	Married	163	63.7
3.	Divorced/Separated	4	1.6
4.	Widow	10	3.9
	<b>Total</b>	<b>256</b>	<b>100</b>
S/N	<b>Highest Level of Education</b>	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
	<b>Total</b>	<b>256</b>	<b>100</b>
	<b>Religion</b>	N	%
1.	Christianity	250	97.7
2.	Islam	4	1.6
3.	Religion not indicated	2	0.8

	<b>Total</b>	<b>256</b>	<b>100</b>
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149

150 Table 1 presents detail information on the nurses' socio-demographic characteristics.  
 151 The age of the participants ranged between 19 and 59 ± 1.05 years standard deviation. The  
 152 married were 163 (63.7%). Participants who had only basic nursing education were 177  
 153 (69.1%) while 97.7% Christian.

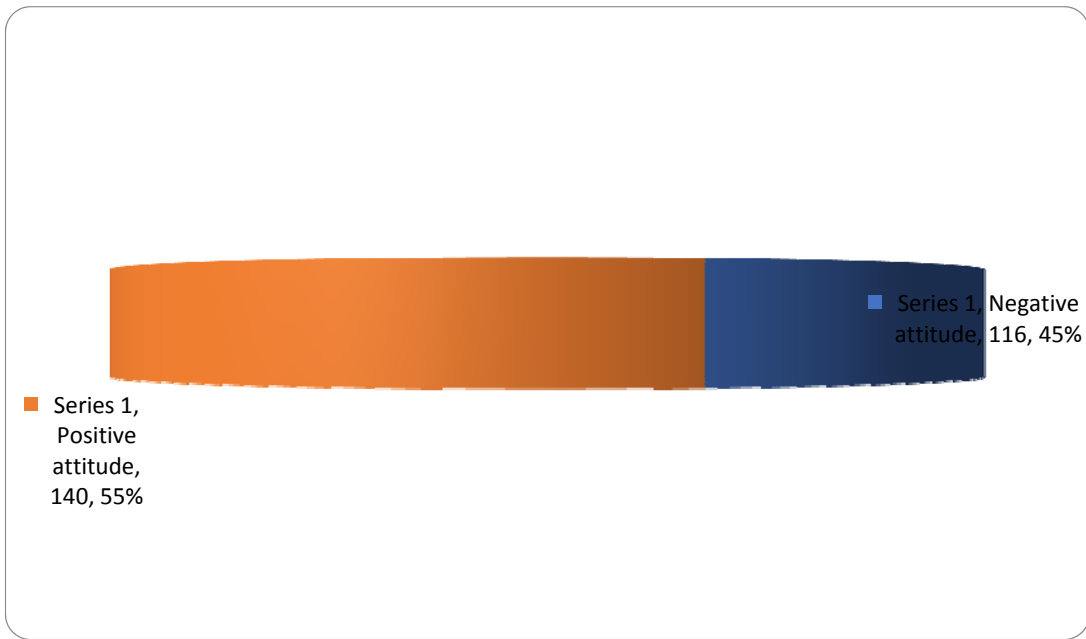
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155 **Table2. Perceived susceptibility to Human papilloma virus and seriousness of cervical**  
 156 **cancer**

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 (menarchy)	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

157

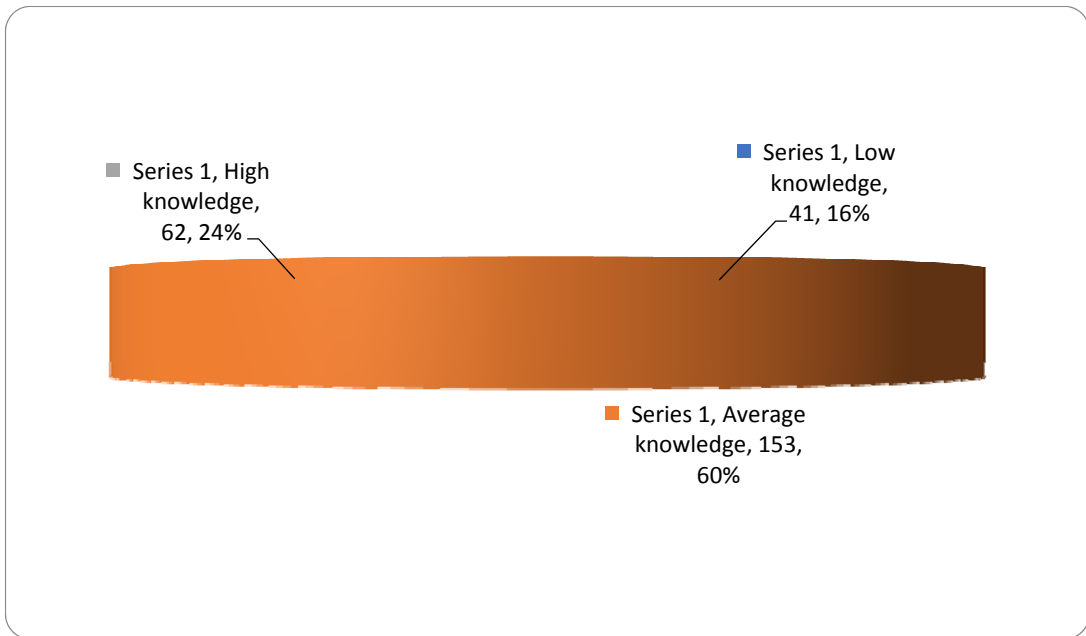
158 The result of nurses perceived factors to susceptibility to human papilloma virus is show in  
 159 Table 2. Among the respondents susceptible factors to Human papilloma virus are 33.2%  
 160 IUCDs insertion, 38.7% use of hormonal contraceptives, 29.7%multiple parity, 13.7% early  
 161 menarche,59.8%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



164

165 **Figure 1: Attitude of the nurses towards cervical cancer screening services**

166 On the attitudinal scale, the nurses' score ranged between 25 and 78 points, mean  
 167 score was  $55.3 \pm 1.05$  std. Those who scored below the mean were classified having negative  
 168 attitude, while those who scored  $\geq$  mean were classified as positive attitude.(fig.1)



169

170 **Figure 2: Level of knowledge of cervical cancer among the nurses**

171 Similarly, the nurses' level of knowledge on cervical cancer was measure on a scale.  
 172 Their level of knowledge on cervical cancer ranged between 0 and 12 points, the mean

173 knowledge level was 7 points  $\pm$  2.3 std. The knowledge level was categorized into three  
 174 groups using the standard deviation. Thus, among the nurses, 62 (24.2%) had high level of  
 175 knowledge (Figure2).

176

177 **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 utilization of cervical cancer screening	10.595	2	0.005	Significant
2.	Nurses' years of practice	nurses' utilization of cervical cancer screening	29.142	2	0.000	Significant
3.	Nurses' professional rank	nurses' utilization of cervical cancer screening	56.457	7	0.000	Significant
4.	Nurses' educational status	Nurses' utilization of cervical cancer screening	10.380	4	0.034	Significant
5.	Nurses' educational status	Nurses' likelihood of future utilization of cervical cancer screening	20.899	8	0.007	Significant
6.	Nurses' age	Nurses' attitude towards utilization of cervical cancer screening	6.971	2	0.031	Significant
7.	Nurses' age	Nurses' utilization of cervical cancer screening	59.358	2	0.000	Significant

178 **The confidence interval is 0.05**

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

181 Similarly, nurses who had practiced between 1 and 10 years were less likely to utilize  
 182 paps smear than their counterparts who had practiced for more than 10 years. This was also  
 183 found to be very significant (table 3). In the same vein, nurses who occupied nursing II/staff  
 184 nurse cadre were less likely to utilized paps smear services than their senior counterparts  
 185 (table 3, No. 3).

186 Educational status was equally found to influence utilization of cervical cancer  
 187 screening. Thus, nurses who had first degree in nursing and other related disciplines are more  
 188 likely to utilize pap smear service than their counterparts who had basic and/or post basic  
 189 training only. This was found to be statistically significant (table 3, No. 4). Similarly, Nurses



190 who had only basic/post basic training in nursing were less likely to utilize pap smear service  
191 in future and will more likely to exhibit uncertainty towards future use of pap smear service  
192 (table 3, No. 5).

193 Furthermore, the age of the nurses were found to influence their attitude towards pap  
194 smear utilization and actual utilization of the service. The older nurses were more likely to  
195 exhibit positive attitude towards utilization of pap smear than their younger counterparts  
196 (Table 3, No. 6). Similarly, the older nurses showed more likelihood of utilizing pap smear  
197 services than their younger counterparts. (table 3, No. 7).

198 **H<sub>0</sub>1:** There is no significant association between nurses' perceived susceptibility to cervical  
199 cancer and utilization of cancer preventive measures.

## 200 **DISCUSSION**

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

217 Furthermore, it is important to state that the population of nurses who were not sure  
218 whether the risk factors included in the question items within the questionnaires could  
219 predispose them to cervical cancer was much. For instance, approximately 40 percent were  
220 not sure that IUCDs insertion and the use of hormonal contraceptives could predispose them  
221 to cervical cancer. In addition, almost half of the nurses were not sure that non-utilization of  
222 Human papilloma Virus (HPV) vaccine could predispose them to developing cervical cancer.

223 Therefore, health education targeting nurses and other health workers would be of great  
224 benefit to this category of national population.

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

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

#### 241 **Conclusion:**

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

246 **Consents:** Informed consents was sought and obtained from all the participants prior to  
247 questionnaire administration.

248 **Ethical:** Prior to the commencement of data collection, copies of this research proposal were  
249 submitted to secure ethical approval from the UBTH Ethical Review Committee.

#### 250 **Recommendations:**

251 Planning of intervention programmes to address the negative attitude of nurses  
252 towards health promoting and illness preventing services in very vital to improve the

253 health of this category of women population. Further study to determine how these  
254 factors affect nurses utilization of pap smear at UBTH.

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