

Short Research Article

Knowledge and Screening Practices of Cervical Cancer among Pregnant Women Attending Antenatal Clinic in Tertiary Hospitals in Enugu, South-Eastern Nigeria

ABSTRACT

Introduction: The burden of cervical cancer is more in developing world where it is a major killer among reproductive age group. Available evidence suggests factors responsible for this escalating mortality among Nigerian women as lack of awareness and poor use of early detection measures.

Materials and methods: This study examines the knowledge and screening practices of cervical cancer among women attending antenatal clinics in tertiary hospitals in Enugu. The study utilized descriptive cross sectional design. A sample size of 250 pregnant women was purposively selected for the study. Data was collected through researcher's developed questionnaire. Descriptive statistics was used for the analysis of data collected and chi-square statistics was utilized to test the hypotheses at significance level of 0.05.

Results : There is poor knowledge of cervical cancer among pregnant women as only 8.1% knew that cervical cancer is caused by human papilloma virus, Few 39.5% are aware that Pap smear is screening test for cervical cancer, only 2% are aware of the ideal age for presentation for cervical screening. There is poor practice of cervical cancer screening as only 2.8% of the respondents had carried out cervical cancer screening. Poor access to health education on cervical cancer and invasion of patients' privacy from cervical cancer screening is the major factors that impaired the utilization of cervical cancer screening. There is no significance relationship between knowledge and practice of cervical cancer screening ($P>0.24$) and also between level of education and cervical cancer screening practices ($P>0.14$).

Conclusion: It was recommended that midwives should intensify health education to reawaken the women's consciousness on the importance of cervical cancer and screening practices

Keywords: *Cervical cancer, screening practices, Ante natal clinic, pregnant women, Tertiary Hospitals*

1. INTRODUCTION

The incidence of cervical cancer is increasing all over the world with the increase occurring in multiples in developing countries that hitherto had lower incidence. The increase is attributed to ignorance, life style changes and negative attitude of people towards preventive health, poor screening practices, low level of education of the populace and poor access to medical care [1]. While cancer is a global health issue, the cancer burden is felt more acutely in developing countries, where resources available for prevention, diagnosis, and treatment of cancer are limited or nonexistent. This is certainly the case in Nigeria, where this disease is causing untold devastation, and control measures are desperately needed [1, 2].

Nigeria is the most populous country in Africa with an estimated population above 170 million in 2014 [3] and with an estimated total population of women between 15-49 years about 40.43 million who are at risk of developing cervical cancer. Currently literature indicated that every year, 9,922 women in Nigeria are diagnosed of cervical cancer and 8,030 die from the disease [4].

The true incidence of cervical cancer in Nigeria is unknown. GLOBOCAN estimates that cervical cancer is the second commonest cancer in Nigerian women with an Age Standardized Incidence Rate (ASR) of 29.0 per 100,000 [5]. This is similar to rates quoted from Abuja and Ibadan cancer registries of 30.3 per 100,000 and 36.0 per 100,000 respectively. Incidentally GLOBOCAN data relied on estimates from the population based registries which cover less than 5% of Nigeria's population [6].

Although the larger population of the country is not covered by a population based cancer registry, institution based reviews across the country suggest that cervical cancer is common. For instance, a large review carried out in Lagos and Ibadan (South West Nigeria) in 2011 showed that cervical cancer was second only to breast cancer as the commonest cancer in the region [7]. The pattern from Aminu Kano Teaching hospital in the largest metropolis in the north west of the country equally shows that cervical cancer is the commonest gynaecological malignancy in women [8]. In University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla, the three most occurring cancer among patients that present to the hospital in descending frequency from January 2008 to December 2012 show that breast cancer account for 54.7%, prostate 30.5% and cervical cancer 14.8% of 1,502 patients that presented and were diagnosed of these types of cancer within this period [9]. The above result obviously would not be a true reflection of the people infected with cancer, most especially cervical cancer which is hidden.

Cervical cancer is attributed to several risk factors, among these factors include early marriage or early age of first sexual intercourse (coitarche), multiple male sexual partners, male sexual partners who themselves have had multiple sexual partners (high risk males), early age at first sexual intercourse with uncircumcised male, long term use of oral contraceptive pills, immune-suppressed states e.g. HIV/AIDs [7]. These sexual risk factors favour the sexual transmission of a carcinogen Human Papilloma Virus (HPV), which is associated with nearly all cervical cancers [10, 11]. To date more than 150 HPV types have been isolated. The risk of developing cervical cancer is attributed to the presence of carcinogen due to Human Papilloma Virus (HPV) type 16 and 33, herpes simplex type II, Histone and prostamine of the sperm. The high risk HPV types are 16 and 18, which are associated with most cervical cancers [10]. Thus cervical cancer is almost unknown in virgins. Current vaccination programmes cover types 16 and 18, which is reported to prevent 66.2 % of cervical cancers. It is observed that HPV infections occur in the sexually active women with 90% clearing spontaneously within months [11]. Thus HPV infection of the cervix can lead to cervical cancer.

In developed countries such as United State of America, death rate from cervical cancer has dropped due to regular cervical screening and treatment that is available and accessible [8]. Conversely, in developing countries like Nigeria, among the women diagnosed of cervical cancer, only 1.9% presented early to the hospital to seek health care when cure could be achieved while the remaining cases could present themselves when the condition can only be manage in a palliative manner [8]. Cervical cancer is a chronic debilitating disease which continues to cause extreme distress and anxiety for patients, carers and their family, and poses challenging clinical problems to nurses. The problem associated with cervical cancer is not just limited to the women, the family as a whole is affected. The economic implication of being affected with cervical cancer is enormous because it diverts the economic resources meant for family upkeep and children's education, to managing cervical cancer which is expensive. The children of the affected family may be made vulnerable to social vices because they may not be adequately cared for as the attention of the family will be distracted. The children may also be abused physically and sexually in their quest for survival [12].

A vaccine designed to prevent cervical cancer occurrence and other diseases caused by infection of HPVs was approved in the U.S. in June, 2006 [11]. About 10 % of Nigerian women have ever had cervical cancer screening in their lifetime and less than 1% is aware of its silent killing nature [10]. This goes a long way to highlight the ignorance and information gap on the availability of screening and the preventable nature of cervical cancer. Knowledge and practice of cervical cancer screening is vital among women and even to the men. This is because women serve as the fulcrum upon which the family stands. If the woman has a good knowledge, skills and understanding of cervical cancer and goes for the screening, it will immensely reduce the morbidity and mortality associated with cervical cancer and other problems that may pose challenges.

Nurses/midwives in the health care setting give general health information to women on a wide range of health promotion and disease prevention activities during ante natal visit without particular emphasis on awareness creation and early detection measures of cervical cancer. This is not appropriate as for early diagnosis and treatment programmes of any malignancy to be effective, the general public must be aware of the disease and its impact, presentation and potential treatments [12]. Therefore, this study sets to determine the knowledge and screening practices of cervical cancer among pregnant women attending antenatal clinics in tertiary hospitals in Enugu, eastern Nigeria

2. MATERIAL AND METHODS

Study area

This study was carried out in University of Nigeria Teaching Hospitals (UNTH), Ituku-Ozalla and Enugu State University Teaching Hospital (ESUTH) Park-lane. University of Nigeria Teaching Hospital is the famous tertiary hospitals in Enugu, with its permanent site located at Ituku-Ozalla, 21 kilometers from Enugu capital city along Enugu-Port-Harcourt expressway. The institution was established under Nigeria Federal Ministry of Health. There are forty one departments in the hospital with other outposts in Nsukka, Abagana and Isuochi. The hospital community is made up of professionals such as the doctors, nurses, midwives, pharmacist, nutritionist, engineers, etc; semi skilled workers like the record clerks, drivers and unskilled workers e.g. orderlies, cleaners etc. UNTH is designated as the centre of excellence for the diagnosis and treatment of cancer and also serves as a referral centre for states in the south eastern, north central and south-south regions of Nigeria.

Enugu State University Teaching Hospital (ESUTH) Park-lane Enugu is also a tertiary institution owned by the state government under the Enugu State Ministry of Health. The hospital has different departments and it is located in Government Reserved Area (GRA) in Enugu metropolis. There are more than 30 departments in the hospital, school of nursing and midwifery, College of Medicine and a church is located within the hospital premises. The hospital community is made up of professionals like doctors, nurses, midwives, medical laboratory scientists, medical rehabilitation, pharmacist, semi skilled workers, ambulance drivers, record clerk and unskilled workers. The hospital serves as referral centre for secondary health care facilities in Enugu State.

Study design

The research design utilized for the study was a descriptive cross sectional survey, which is a scientific, non-experimental method which involves observing and describing the behavior of a subject without having influence over it.

Sampling technique

The University of Nigeria Teaching Hospital (UNTH) and Enugu State University Teaching Hospital (ESUTH) were purposively selected for the study. The average number of pregnant women that attend antenatal clinics for two months was 418 and 300 for University of Nigeria Teaching Hospital (UNTH) and Enugu State University Teaching Hospital (ESUTH) respectively. Therefore the average of the two populations is 718. The sample size for the study was determined using

Yaro Yamane's formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size

N = Total population

e = constant (0.05)

$$n = 257$$

A proportionate number of respondents were selected from each of the selected hospitals for the study. A total of 145 and 105 pregnant women were selected from UNTH and ESUTH antenatal clinics respectively for the study. Convenience sampling was employed in selecting the respondents utilizing the inclusion criteria of willingness to participate in the study, emotional and physical stable, women who regularly attend antenatal clinic and those present as at the time of study.

Instrument of Data Collection

The instrument used for data collection was the researcher developed semi structured questionnaire drawn strictly based on extensive literature search on the knowledge and practice of cervical cancer screening. The questionnaire elicits questions on demographic data of the respondents, knowledge, screening practices and factors influencing the practice of cervical cancer screening.

Method of Data Collection

The distribution of the questionnaire to the women in the two selected health care institutions was done on antenatal visit days of Mondays, Wednesdays and Fridays. Four research assistants who are nurse educators at the selected hospitals were recruited and trained on the purpose of the study, method of selection, interpretation of questionnaire and collection of data. The distribution and collection of the questionnaire lasted for eight consecutive weeks using the antenatal visit days in each of the hospitals. The questionnaires were administered, filled and collected on the spot.

Validity of the Instrument

The face validity of the questionnaire was determine by the project supervisor and content validated by experts in oncology and nutritionist. Experts were requested to rate each item and overall instrument using a 4 point scale as follows: - very relevant, relevant, relevant with item revision and irrelevant. Items identified as irrelevant were dropped and those suggested for item revision were modified and reevaluated before inclusion.

Reliability of the instrument

A group of twenty five pregnant women attending ante natal clinic at Mother of Christ specialist hospital, Enugu were recruited to complete the copies of the questionnaire. Data was analyzed for reliability co-efficient using Cronbach's alpha. The reliability co-efficient for the overall instrument was ascertained to be 0.86, signifying that the questionnaire had a high proportion of internal consistency

Ethical Considerations

Prior to obtain ethical clearance, a letter was written to the research ethical committee of University of Nigeria Teaching Hospital, Enugu and Enugu State University Teaching Hospital, Parklane- Enugu with summary of the research protocol attached. The permission to carry out the study was granted from both health institutions. Also permission was also sought from the

administrative heads of antenatal clinics and from the respondents before administering the questionnaire. They were also assured anonymous, voluntary participation and confidentiality of information given.

Method of data analysis

Completed data was checked and cleaned for errors on daily basis. Any correction needed was effected before data entry into the computer. Data entry was done using IBM SPSS (Statistical Package for the Social Sciences) version 20. Data was double-entered to minimize errors. The socio-demographic distribution of participants was done by simple frequencies and presented in tables. Descriptive statistics was used to analyzed the data while inferential statistics of chi-square was used to test the relationship between variables at significance level of 5%.

3. RESULTS AND DISCUSSION

Table 1: Socio-demographic data

		n =250	
Characteristics	Option	Frequency	Percentage
Marital Status	Single	7	2.8
	Married	240	96.0
	Never married	3	1.2
Family type	Monogamous	195	78.0
	Polygamous	55	22.0
Educational Level	No formal education	7	2.8
	Primary School	22	8.8
	Secondary School	55	22.0
	Tertiary	166	66.4
Occupation	Not employed	14	6.5
	Self-employed trader	91	36.4
	Business women	83	33.2
	Junior civil servant	14	5.6
	Senior civil servant	48	19.2
Ethnic Origin	Hausa	3	1.2
	Igbo	243	97.2
	Yoruba	4	1.6
Parity of respondents	0	62	24.8
	1	50	20.0

2	61	24.4
3	62	24.8
4	15	6.0

Results in table 1 revealed that 7 (2.8%) of the respondents are single and 240 (96%) are married. In terms of family type, 195 (78%) are from monogamous family while 55 (22%) from polygamous family. On educational qualification of the respondents 7 (2.8%) had no formal education, 22 (8.8%) acquired primary education while majority 166 (66.4%) obtained tertiary education. On the respondents occupation 14 (6.5%) were unemployed, 91 (36.4) self employed traders, 83 (33.2%) professional business women, 14 (5.6%) were junior civil servants while 48 (19.2%) senior civil servants. Respondents ethnic origin indicated that majority 243(97.2%) were Igbo, while 4 (1.6%) were Yoruba. 62 (24.8%) of the respondents were primigravida. In terms of parity, 62 (24.8%) had three children while 15 (6%) had four children.

Table 2: Respondents knowledge of cervical cancer

n=250

Characteristics		Option	Frequency	Percentage
Ever heard of cervical cancer		Yes	210	84.0
		No	40	16.0
Source of Information *multiple options		Radio	168	80.0
		Television	174	82.9
		Healthcare professional	56	26.7
		Friends	12	5.7
Cause of Cervical Cancer *Multiple options		Don't have an idea	137	65.2
		Bacteria	148	70.4
		Human papilloma virus	17	8.1
		Fungi	108	51.4

Results in table 2 revealed that majority of respondents 210 (84%) had heard of cervical cancer. The source of information indicated that 174 (82.9%) was from television, 168 (80.0%) got their information from radio while few 56 (26.7%) are of the affirmative from healthcare professionals. On the cause of cervical cancer, 137 (65.2%) have no idea on the cause of cervical

187 cancer, 148 (70.4%) affirmed that bacteria is the cause of the disease while few 17 (8.1%)
 188 attributed the cause to Human papilloma virus

189 **Table 3: Knowledge of screening test for cervical cancer**

Characteristics	Option	Frequency	Percentage
Knowledge of type of screening test that can detect cervical cancer *Multiple options	Pap smear	123.0	58.6
	VIA	15	7.1
	Mammography	117.0	55.7
	X-ray	34.0	16.2
	Ultrasound	86.0	41.0
Age of presentation for screening	15-19years	86.0	41.0
	20-29years	43.0	20.5
	30-40years	81.0	38.5
Frequency of undergoing screening test	Every year	145	69.0
	Every two years	31	14.8
	Every three years	20	9.5
	Four years and above	14	6.7
Awareness of Vaccine availability	Yes	80.0	38.1
	No	130.0	61.9
Ever screened for cervical cancer	Yes	7	2.8
	No	243	97.2

190 Table 3 showed that majority 123 (58.6%) agreed to Pap smear as cervical screening test, 117
 191 (55.7%) indicated mammography and very few 15 (7.1%) affirmed to VIA. In terms of period
 192 for presentation for cervical screening, majority 86 (41%) indicated 15-19 years followed by 81
 193 (38.5%) agreed that 30-40 years. Majority 145 (69%) agreed that the test should be done every
 194 year. Majority of the respondents 130 (61.9%) are not aware of any vaccine for prevention of
 195 cervical cancer and only 7 (2.8%) had undergone screening for cervical cancer.

196

197

198

199

200 **Factors influencing practice of cervical cancer screening**

Variable	Yes		NO	
	Freq	(%)	Freq	(%)
Poor access to health education about cervical cancer screening	190	76	60	24
Health professional's negative attitude towards patients for screening	150	60	100	40
Invasion of patients' privacy from cervical cancer screening	180	72	70	28
Distance of cervical screening place	110	44	140	56
Long waiting time for cervical cancer screening	158	63.2	92	36.8

201 Results revealed that 190(76%) of the respondents were of the view to that poor access to health
 202 education from health care providers hinders cervical cancer screening, majority 180 (60%) of
 203 the respondents indicated that invasion of their privacy scares people from utilizing cervical
 204 cancer screening while findings also indicated that 150(60%) of the respondents are of the
 205 opinion that health professional's attitude can discourage people from utilizing screening.
 206 Findings indicates that 140(56%) of the respondents were of the opinion that distance is not
 207 hindrance to the screening utilization. 56 (22.4%) were of the opinion that long waiting
 208 discourages utilization of screening and 158(63.2%) opined that long waiting does discourage
 209 utilization of screening.

210 **Test of hypothesis:** There is no significance relationship between level of knowledge of cervical
 211 cancer screening and the practice of cervical cancer screening among women attending antenatal
 212 clinic at tertiary hospitals in Enugu.

213 **Table 5:** Cross tabulation between knowledge and practice of cervical cancer screening

		Practice		
		Yes	No	Total
Knowledge	Yes	7	203	210

	No	0	40	40
	Total	7	243	250

* $X^2 = 1.372$, $P = 0.242$

Decision Rule

Since the significant value ($P=0.24$) of the Chi-square statistics is greater than 0.05 level of significance, the null hypothesis was accepted. Therefore there is no significance relationship between knowledge and practice of cervical cancer screening.

Hypothesis two: There is no significance relationship between educational qualification of women attending antenatal clinic at tertiary hospital in Enugu and practice of cervical cancer screening. Table 6: A chi-square cross tabulation between educational level and practice of cervical cancer screening among women attending antenatal clinic in tertiary hospitals in Enugu.

Table 6: Cross tabulation between educational level and practice of cervical cancer screening

		Practice		
		Yes	No	Total
Educational Level	No formal education	0	7	7
	Primary education	0	22	22
	Secondary	4	51	55
	Tertiary	3	163	166
	Total	7	243	250

* $X^2 = 5.479$, $P = .14$

The significant value ($P=.14$) of the chi-square statistic is greater than 0.05 level of significance, the null hypothesis was accepted. Therefore there is no significant relationship between educational level and practice of cervical cancer screening among women that attend antenatal clinic (ANC) at tertiary hospitals in Enugu.

Discussion

The result of the study revealed that majority of pregnant women had heard of cervical cancer however their knowledge of cervical cancer is poor. The findings shows that only 20.5% of 210 respondents were aware of the ideal age for presentation for screening for a sexually active person, 9.5% of 210 were aware of the interval of presentation for screening, 39.5% know about

Pap smear as the screening for detection of cervical cancer, 8.1% knew that cervical cancer is caused by human Papilloma virus, 38.1% knew of the availability of vaccine for cervical cancer and only few are aware of the use of VIA as a screening test for cervical screening for resource poor countries. This finding is a variance to [13] who reported from their study of nurses that majority understood that Pap smear could be used to detect precancerous state of cervical cancer. Most screening programmes rely on Pap smear until recent introduction of VIA. Pap smear programmes are complex and costly to run and have failed to reach a significant proportion of women in developing countries where health systems and infrastructures are weak [14]. The most probable explanation of the low knowledge of cervical cancer screening among the pregnant woman can be attributed to the fact that most Nigerians are not conscious of preventive health and do not strive to know about things that may have both direct and indirect implication to their health. Also it could be attributed to the fact that most Nigerians don't see themselves vulnerable to certain health condition such as cancer or to be infected by such health problem.

The findings of this study is in tandem with the findings of [14] where two third of the subjects did not know about Pap smear or screening test before. The finding is in contrast with findings of [13] where 90% of the respondents were aware of the causative organism of cervical cancer as HPV. Also 52.4% of the respondents feel that cervical cancer could be prevented and this is in line with the finding of [10] where 45.6% of the respondents felt cervical cancer is preventable.

On awareness, greater percentage of the respondents (90%) have heard about cervical cancer screening and their major source of information is the media (television and radio) then followed by health care professional all making a percentage contribution of 35.2%, 32.4% and 26.7% respectively. The findings are in contrast with that of [15] where the subjects' major source of information was from the health care professionals. Also the findings are also in consonant with that of [13] where 90% of the respondents were aware of cervical cancer screening but in contrast with the findings of [17] where only 55.7% were aware. 52.4% of the respondents were aware of the preventable nature of cervical cancer and the finding is in contrast with the finding of [15] where only 8% were aware of the preventable nature of cervical cancer, but in-line with the findings of [10] where about 45.6% felt it could be prevented.

The practice of cervical cancer among the respondent is insignificant. The probable explanation to this is embedded in the fact that most African nations and underdeveloped countries don't access preventive health and would rather prefer to seek curative health and this could be the reason why most of them present late to the hospital where solution to their problems could be found. Also most see themselves as not vulnerable to a particular health condition or believes that there are special people that are vulnerable.

The findings of the study revealed that only 2.8% of the 250 respondents have ever gone for cervical cancer screening. The finding is in consonant with the findings of [16] where despite their overt awareness of cervical cancer screening only 7.1% of the respondents had ever done cervical cancer screening. The finding is also in line with the findings of [17] where only 19% of the respondents had ever carried out the screening. The finding is in contrast with that of [15] where about 60% of the respondents had received Pap smear test before.

Result revealed that poor access to health education is an important factor that leads to poor utilization of cervical cancer screening and this was the opinion of 76% of the respondents. This finding correlate with that of [16] study which observed that not carrying out cervical cancer test among respondents was due to lack of awareness. This finding is also in agreement with several studies that health education campaigns inform of radio jingles and from health professionals in developing countries have dramatically increased awareness of breast and cervical cancers in women at risk, and have led to increased rates of early diagnosis and treatment [11]. Mortality from breast cancer is now reducing, partly due to awareness and early detection measures.

Majority 72% of the respondents identified invasion of privacy as a factor that will discourage them from utilizing cervical cancer screening, this finding is in consonant with that of [17]report as the most common reason for non-uptake of cancer screening. Also, financial constraint is among the major factors that hinders utilization of cervical cancer screening. This probable could be as a result of the high cost of medical treatment and lack of free cervical cancer screening. This finding is not surprising as in Nigeria, the out-of-pocket expenditure accounts for up to 70% of health financing [18] in a country where it is estimated that 70.8% of the people live below the poverty line of less than US\$1 per day [19]. Also, the national health insurance scheme, which is a viable leeway for people to access health services, covers only

those working for the government and organised private sector with the majority of Nigerians uninsured.

4. CONCLUSION

Implication for Nursing

The findings of this study revealed that there is poor knowledge of cervical cancer screening, there is significantly low practice of cervical cancer screening and also that there is no significant relationship between knowledge and practice of cervical cancer screening among women that visit antenatal clinic in tertiary hospitals in Enugu. These findings have a remarkable implication for hospital management, the government and to the nurses in particular. The nurses have significant role to play in the area of health education. This should be done to reawaken the women's consciousness on the importance of cervical cancer screening and the need they should know about cervical cancer and cervical cancer screening. Also the need for them to practice the screening tests have the benefit obtainable from it far outweighs what it may take to carryout cervical cancer screening.

Findings of this study also revealed that there is no significance relationship between knowledge and practice of cervical cancer screening, the nurse also has a major role to play as a patient's advocate and also one in a noble profession where life is immensely valued and would ensure that life is protected. The nurse is to canvass for the implementation of policies that will ensure that every women of child bearing age is made to carry out a mandatory cervical cancer screening and to lobby the government so that the cost of screening is highly subsidized or made free for these women of child bearing age and other sexually active women. The nurse can also lobby non-governmental organization to carryout massive and sustained free community screening for cervical cancer.

CONSENT

PATIENT INFORMED CONSENT FORM

Introductory Statement

Dear Respondent,

You are being invited to participate in this study concerning knowledge and screening practices of cervical cancer among pregnant women attending antenatal clinics in tertiary hospital in Enugu, eastern Nigeria

Purpose of study

The purpose of the study is to determine the knowledge and screening practices of cervical cancer among pregnant women attending antenatal clinics in tertiary hospital in Enugu, Eastern Nigeria. This will help women to appreciate the need to recognize signs and symptoms of cervical cancer.

330 **Procedure of the Research**

331 The study will last for eight weeks in each hospital. During the study, the participants will be
332 required to fill a questionnaire once during the study.

333 **Confidentiality:** Your participation does not require giving your name. Any information given,
334 or reports and publications from this study shall not bear your name.

335 **Voluntariness:** Participation is also voluntary and you are free to refuse or withdraw from the
336 study at any time you wish without denying you your standard of care. Since people react
337 differently to information, you are free not to answer any question or participate in any
338 discussion you find very sensitive.

339 **Risk(s):** There are no risks involved in your participation in the study

340 **Costs to the participants in joining the Research:** Your participation in this research will cost
341 you nothing

342 **Benefit(s):** The goal of this study is to create cervical cancer awareness and screening practices
343 for improve health care

344 **Due inducement(s):** You will not be paid any fees however you will be compensated with
345 refreshments.

346 **What Happens to Participants and Communities when Research is Over:**

347 Hospital management will be informed of the outcome of study.

348 **Statement of Sharing Benefits among Researchers and whether this Include or Exclude** 349 **Research Participants :**

350 There is no plan to contact any participant either now or in the future about commercial benefits.

351 **Statement of Person Obtaining Informed Consent:**

352 I have explained fully and have given sufficient information including purpose, method, benefits
353 and risks of this study to Miss/Mrs. to make an informed
354 decision.

355

356 Name Signature and Date.....

357 **Statement of Person Giving Consent:**

358 Now that the study has been described and explained to me, and I fully understand the content of
359 the study process I am willing to take part in the study. I understand the purpose, method and
360 benefit of the study and that there are no risks involved. I have a copy of this informed consent.

361

362 Signature of participant/date Signature of researcher/date

363

364 **ETHICAL APPROVAL (WHERE EVER APPLICABLE)**

365

366 Prior to obtain ethical clearance, a letter was written to the research ethical committee of University of
367 Nigeria Teaching Hospital, Enugu and Enugu State University Teaching Hospital, Parklane- Enugu with
368 summary of the research protocol attached. The permission to carry out the study was granted from both
369 health institutions. Also permission was also sought from the administrative heads of antenatal clinics and
370 from the respondents before administering the questionnaire. They were also assured anonymous and
371 confidentiality of information given.

372

373 **REFERENCES**

374

- 375 1. Amarin ZO, Badria LF. Attitude and beliefs about cervical cancer smear testing in ever-
376 married Jordanian Women. Eastern Mediterranean Health Journal 2008;14(2); 389-397.
- 377 2. Nwogu, Ezeome, Mahoney, Okoye and Michalek. Regional Cancer Control in South-
378 Eastern Nigeria: A Proposal Emanating from a UICC-sponsored Workshop. West
379 African Journal of Medicine.2010: 29 (6) 407-410
- 380 3. Nigeria NPCO. Report of 2006 Census 2006.
- 381 4. Ezeruigbo CF, Ude AN. Knowledge Attitude and Practice of Cervical Cancer Screening
382 among school teachers in Enugu State. International Professional Nursing Journal. 2012:
383 10 (2) 13-17.

5. Cancer WHO/AFRO. GLOBOCAN: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012.
6. Jedy-Agba E, Curado MP, Ogunbiyi O, Oga E, Fabowale T, Igbinoba F. Cancer incidence in Nigeria: A report from population-based cancer registries. *Cancer Epidemiology*. 2012; 36 (5):e271-278.
7. Agboola A. Textbook of obstetrics and gynaecology for medical students. Ibadan: Heinemann education books, 2006
8. Dailard, C. HPV in United States and developing Nations: A problem of public health or politics? *Guttmacher Rep Public Policy*. 2003: 6, 4-6.
9. University of Nigeria Teaching Hospital Cancer Registry (2012).
10. Ogundipe S, Obinna C. Cervical cancer: every sexually active woman at risk. *Vanguard news paper*. 19th October 2010. Accessed online on October 15, 2012.
11. Stoppler MC. Bring knowledge to you about cervical cancer. www.medicinenet.com. Accessed on October 15, 2012.
12. Ohaeri B, Ingwu J. Prostate cancer awareness and screening practices among older men attending outpatient clinics in selected hospitals in Cross River State, Nigeria – A pilot study. *International Journal of Current Affairs*. 2015: 7(11) pp 23215-23220.
13. Awodele O, Adeyomoye AA, Awodele DF, Kwashi V, Awodele IO, Dolapo DC. A study on cervical cancer screening amongst nurses in Lagos University Teaching Hospital, Lagos, Nigeria. *J. Cancer Edu*. 2011: (3) 497-504.
14. Akujobi CN, Ikechebelu JI, Onunkwo I, Onyiaorah IW. Knowledge, attitude and practice of screening for cervical cancer among female student in tertiary institution in south eastern Nigeria. *Nigerian Journal clinical practice*. 2008: 11(3) 216- 219.
15. Mbamara SU, Ikpeze OC, Okonkwo JE, Onyiaroah IV, and Ukah CO. Knowledge, attitude and practice of cervical cancer screening among women attending gynaecological clinics in tertiary level medical care centre in Southeastern Nigeria *Journal of Reproductive Medicine*. 2011 : 56 (11-12) 491-496.
16. Ezem BU. Awareness and uptake of cervical cancer screening in Owerri South-Eastern Nigeria. 2007: 6 (3): 94-98

- 416
417 17. Chiebu CO, Aniebue U. Why Southeastern Nigerian women who have heard of cervical
418 cancer screening do not go for cervical cancer screening. International gynaecology
419 cancer. 2011; 21(7) 128212- 128216.
- 420
421 18. UNDP. Human Development Report. New York: United Nations Development
422 Programme. 2007.
- 423
424 19. NHA. National Health Accounts (NHA), 2003-2005. Abuja: National Health Accounts.
425 2006