

Research Article

Awareness, Knowledge and Attitude to Cervical Cancer and Its Screening among Females in Somolu Local Government Area, Lagos, Nigeria

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2019; **Published:** February 20, 2019**Abstract**

Background: Cancer of the cervix is the second most common cancer in women globally, and a major cause of morbidity and mortality among women in developing countries. The study was carried out to determine the awareness and knowledge of cervical cancer and attitude to cervical cancer screening among women in Somolu Local Government Area (LGA), Lagos State, Nigeria.

Methodology: The study, carried out in 2014 among women in Somolu LGA, employed a cross-sectional descriptive design. A pre-tested, self-administered, semi-structured questionnaire was used to elicit information from 260 women who were recruited by multi-stage sampling method. The data were analyzed using SPSS version 20.

Results: The mean age of the respondents was 28.3 years \pm 8.36 years; 161 (61.9%) were single and 115 (44.2%) were aware of cervical cancer. Two hundred and thirteen (81.9%) had poor knowledge of cervical cancer while 47 (18.1%) had good knowledge; 115 (44.2%) had negative attitude while 145 (55.8%) had positive attitude to cervical cancer screening.

Conclusion: Women in Somolu LGA had poor awareness of cervical cancer. Majority had poor knowledge of cervical cancer and just above average had a positive attitude to cervical cancer screening. Working with health care workers, the government should intensify public education about cervical cancer targeted at women of all ages in the LGA.

Keywords: Females; Knowledge; Attitude; Cervical cancer; Cervical cancer screening; Nigeria

Introduction

Cervical cancer is a malignant disease of the cervix with clear-cut pre-malignant and malignant stages [1]. Globally, it is the second most common cancer in women with about 530,000 new cases being diagnosed every year and developing countries having 85% of this burden [2-4]. In Sub-Saharan Africa, it comprises 20 to 25% of all cancers among women, which is about double that of women worldwide [5]. Its incidence in sub-Saharan countries ranges from 30 to 40 per 100,000 women [6]. In Nigeria it constitutes a huge burden: apart from being the second commonest cancer in women, among over 40 million women aged 15 years old and above, it accounts for 63% of genital cancers and 30-40% of uterine cancers [6]. Currently, estimate indicates that every year 14,550 women are diagnosed with cervical cancer and 9,659 die from the disease [6-8].

Cervical cancer is a preventable disease and should not continue to cause as much morbidity and mortality as it does presently. Control includes health promotion, removal or reduction of modifiable risk factors associated with the disease and immunization against the Human Papilloma virus, which has been implicated in the causation of the cancer [9]. Screening to identify cervical abnormality in an asymptomatic population so that disease progression can be halted at an early stage is also a recognized method of control [10].

Screening for cervical cancer is an established and effective intervention in the prevention and treatment of the disease. In developed countries, its widespread use has drastically reduced the morbidity and mortality from cervical cancer among the women [11-13]. However, in developing countries like Nigeria, even where such facilities are available, the utilization is still poor [13-17].

As some studies revealed, poor awareness, knowledge and attitude to cervical cancer could have been responsible for this [12,13,18-20].

Studies conducted on awareness and knowledge of cervical cancer among women in South Western Nigeria, North Eastern Nigeria and in Eastern parts of Nigeria, reported poor or at best, below average knowledge of cervical cancer [12,13,18,21]. There are also studies about knowledge and attitude to cervical cancer, which are hospital-based in other parts of Nigeria and Uganda [22-25]. There is however a paucity of community-based studies about awareness, knowledge and attitude to cervical cancer among women in Somolu LGA, Lagos which are imperative if the women would know what to do and what to avoid in order to safeguard their lives against this deadly disease.

This study was therefore conducted to assess the awareness, knowledge of risk factors, symptoms and prevention of cervical cancer; and knowledge and attitude to cervical cancer screening among women in Somolu LGA, Lagos.

Table 1: Socio-demographic characteristics of respondents.

Variables	Frequency (n=260)	Percentage (%)
Age (years)		
<20	28	10.8
20-30	162	62.3
31-40	45	17.3
41-50	21	8.1
51-60	4	1.5
Religion		
Christianity	209	80.4
Islam	47	18.1
Traditional	4	1.5
Ethnicity		
Yoruba	120	46.2
Igbo	99	38
Other groups	29	11.2
Hausa	12	4.6
Marital status		
Single	161	61.9
Married	82	31.5
Separated/divorced/widowed	17	6.6
Level of education		
None	4	1.5
Primary	15	5.8
Secondary	69	26.5
Tertiary	172	66.2
Occupation		
Professionals	20	7.7
Intermediate	28	10.8
Skilled	74	28.5
Unskilled	138	53

Methodology

Somolu Local Government Area (LGA) is one of the 18 LGAs in Lagos State. Located in Lagos East Senatorial District, it is made up of 8 wards and covers a land area of 99.0km². It is bounded by three LGAs: Yaba, Bariga, and Mushin and has an estimated population of 495,776 projected from the 2006 national census [26].

The people are predominantly Yorub as but other ethnic groups such as Igbos and Hausas also reside in the LGA. Majority of the people are printers, traders and bankers and are of medium to low socioeconomic status. The LGA is plagued by problems of overcrowding, poor housing and inadequate sanitation. It has one general hospital, two primary health centers and several private health facilities. The major religions of the inhabitants are Islam and Christianity.

This was a descriptive cross-sectional survey conducted among women between the ages of 16 and 60. Those who did not give their consent were excluded from the study. Assuming a 95% level

Table 2: Respondents' knowledge about risk factors of cervical cancer.

Risk factors	Frequency (n=115)	Percentage (%)
Human papilloma virus (HPV)	56	49
Multiple sexual partners	55	47.8
Early sexual debut	34	30
Long term use of contraceptive	24	21
Smoking	21	18.3

Table 3: Respondents knowledge of cervical cancer screening (n=115).

Knowledge Statements	Correct Responses (%)	Incorrect Responses (%)
For cervical cancer help should be sought from doctors	112 (97.4)	3 (1.6)
Can be detected through screening	100 (87.0)	15 (13.0)
Screening enhances early detection and control of cervical cancer	96 (83.5)	19 (16.5)
Cervical cancer screening will not extinguish faith in God	88 (76.5)	27 (23.5)
Cervical cancer is curable if detected early	78 (67.8)	37 (32.2)

of confidence, proportion of women with awareness of cervical cancer of 80% (from a previous study) and a level of significance 5%, the formula for calculating single proportions by Abramson and Gahlinger was used to obtain a minimum sample size of 245 but the number was increased to 260 in order to make up for incompletely filled questionnaire [27,28].

Respondents were recruited into the study using multistage sampling technique. There are 8 wards in the LGA; simple random sampling was used to select 50% out of these. From each of the selected wards, 10 streets were selected by simple random sampling. Starting from the centre of each street, systematic random sampling was used to select 6 or 7 houses. From each selected house, an eligible respondent who consented was interviewed until the required number of respondents were interviewed.

A pre-tested, semi-structured questionnaire, developed by the researchers in English language and back translated into Yoruba in order to ensure the content validity was used. The questionnaire was pre-tested by one of the researchers and some trained research assistants in Bariga LGA, which was not utilized for this study. Thereafter, some questions were re-adjusted. It elicited information about the socio-demographic characteristics, knowledge of risk factors, symptoms and prevention of cervical cancer, knowledge and attitude to cervical cancer screening among the women. The questionnaire was self-administered by the literate respondents while the non-literate ones were interviewed by trained research assistants.

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 20. In determining the knowledge of cervical cancer, a 20-point question covering knowledge of risk factors, symptoms and prevention of cervical cancer and knowledge of cervical cancer screening (from the knowledge section of the questionnaire was used). Each correct response was scored one while a non- or wrong response was scored zero. Respondents who scored 10-20 were categorized as having good knowledge while those that scored 0-9 were categorized as having poor knowledge. In determining attitude to cervical cancer prevention, a 10-point question (also from the questionnaire was used). Each correct response was scored one while

a non- or wrong response was scored zero. Respondents who scored 5-10 were categorized as having positive attitude while those that scored 0-4 were categorized as having negative attitude.

Ethical clearance was obtained from LUTH College of Medicine Ethics and Research Committee. Permission to conduct the survey was obtained from the LGA authorities. Written informed consent was obtained from the respondents, the questionnaires were filled anonymously and confidentiality of information collected was ensured by the researchers.

Results

A total of 260 questionnaires were distributed during the course of data collection. All were retrieved, properly filled and therefore analyzed. This gave a response rate of 100%.

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the respondents. Two hundred and seven (79.6%) of the respondents were 20-40 years old; mean age was 28.3 years \pm 8.36 years; 209 (80.4%) were Christians; 120(46.2%) were Yorubas; 161(61.9%) were single; 172(66.2%) had tertiary education and 138(53.0%) were unskilled workers.

Awareness of cervical cancer and knowledge of cervical cancer risk factors

One hundred and fifteen (44.2%) respondents were aware of cervical cancer. The main sources of information were the internet 53(46.1%), radio/TV 51(44.3%) and health care personnel 45(39.1%). The most commonly identified risk factors of cervical cancer were HPV infection 56(49.0%), multiple sexual partners 55(47.8%) and early sexual debut 34(30.0%) (Table 2).

Knowledge of symptoms and prevention of cervical cancer

The most commonly mentioned symptoms of cervical cancer were foul-smelling vaginal discharge 60(52.2%), post-coital bleeding 49(42.6%), lower abdominal pain 47(41.0%) and inter-menstrual bleeding 30(26.1%). Only 75(65.2%) out of the 115 that were aware of cervical cancer knew that the disease is preventable. The most commonly mentioned method of prevention were avoiding multiple sexual partners 42(56.0%), avoiding early sexual debut 31(41.3%), abstinence 28(37.3%), and HPV vaccination 27(36.0%).

Knowledge of cervical cancer screening

One hundred and twelve (97.4%) knew that help should be sought from doctors; 100(87.0%) knew it can be detected through screening; 96(83.4%) knew that screening enhances early detection and control; 88(76.5%) knew that faith will not extinguish faith in God and 78(67.8%) (Table 3).

Overall knowledge of cervical cancer

Overall, 213(81.9%) respondents had poor knowledge while 47(18.1%) had good knowledge of cervical cancer (Table 4).

Attitude to cervical cancer screening

Majority 209(80.4%) agreed that screening is not against their religious beliefs; 199(76.5%) agreed that periodic screening is important to health; 166(63.8%) agreed that early detection by

Table 4: Overall knowledge of cervical cancer.

Knowledge	Frequency	Percentage
Good knowledge	47	18.1
Poor knowledge	213	81.9
Total	260	100

Table 5: Respondents attitude towards cervical cancer screening.

Attitudinal Statements	Agree (%)	Unsure (%)	Disagree (%)
Cervical cancer screening is not against my religious belief	209(80.4)	31(11.9)	20(7.7)
Periodic screening is important to health	199(76.5)	45(17.3)	16(6.2)
Early detection by screening decreases complication	166(63.8)	27(10.4)	67(25.8)
Every woman is at risk of developing cervical cancer	120(46.2)	46(17.7)	94(36.2)
Screening is merely looking for trouble	32(11.9)	61(23.5)	167(64.2)
Results of screening can be used to retrench workers	30(11.5)	85(32.7)	145(55.8)
Screening for cervical cancer shows one is promiscuous	37(14.2)	90(34.6)	133(51.2)
Screening is unnecessary if one eats a healthy diet	45(17.3)	106(40.8)	109(41.9)
Screening is not likely to change the outcome	60(23.1)	96(36.9)	104(40.0)
Traditional methods of treatment are effective	50(19.2)	117(45)	93(35.8)

Table 6: Overall attitude to cervical cancer screening.

Attitude	Frequency	Percentage
Negative	115	44.2
Positive	145	55.8
Total	260	100

screening decreases complication and 120(46.2%) agreed that every woman is at risk of developing cervical cancer. Majority 167(64.2%) also disagreed that screening is merely looking for trouble; 145(55.8%) disagreed that results of screening can be used to retrench workers, and screening shows one is promiscuous 133(51.2) (Table 5).

Overall attitude to cervical cancer screening

Overall, 145(55.8%) respondents had a positive attitude while 115(44.2%) had a negative attitude to cervical cancer screening (Table 6).

Discussion

The study assessed the awareness and knowledge of cervical cancer and knowledge and attitude to cervical cancer screening among women in Somolu LGA, Lagos.

Less than half of the respondents were aware of cervical cancer. Previous studies done within Nigeria gave differing reports. In Osogbo, South-western Nigeria, similar level of awareness was recorded among female secondary school teachers found attending an antenatal clinic while in Lagos and Ife the awareness was even lower than that found in this study [12,20,23]. However, higher levels of awareness ranging from 52.8% to 88.2% were reported in other studies conducted in different parts of Southern Nigeria, Qatar, Saudi Arabia and Uganda [21,24,27,29,30-32].

The low level of awareness recorded in this study is highly

worrisome because the study centre is located in the former capital of the country, where one would naturally expect the women to be largely aware of diseases of this nature. If the level of awareness was this low in an urban centre, one wonders what would obtain in a rural community. This level may be accounted for by the comparatively lower levels of both awareness campaigns and screening practices in developing countries as opposed to the developed ones. Given the rising incidence of morbidity and mortality from cancers on a daily basis, women of all ages should be enlightened about this deadly disease in order to know what to do to protect themselves.

The major sources of information in this study were the internet, radio/TV and health care personnel. Though some studies show a similar trend in the source of information, there was none where the internet played a significant role; rather it was the radio/TV that was the commonest, followed by health care personnel [21,32,33]. In some studies conducted in Eastern Nigeria, Greece and United Arab Emirates however, health personnel were the most important sources of information [22,31,34].

In this study less than half of respondents (49%) associated cervical cancer with HPV infection. This is higher than what was reported in studies conducted in Ogun, Abuja and Saudi Arabia [35-37] in which only 2.3, 14.0 and 14.4% of the respondents knew HPV as a risk factor for cervical cancer. It is however lower than that reported Southwest Nigeria, Abakaliki and Uganda where 67.1 and 79.4% of the respondents knew HPV infection as a risk factor for the disease [29,32,38]. HPV infection, especially of the strains 16,18,31,33 and 35 is known to cause cervical cancer which is a cause of high morbidity and mortality among women in Nigeria. The infection can however be prevented by HPV vaccination and use of condom. Poor association of the disease with the infection implies that the women would continue to practice unsafe sex and also fail to avail themselves or their children of the availability of HPV vaccine. This might continue to worsen the burden of the disease among our women.

Also, less than half of respondents linked cervical cancer with multiple sexual partners and less than a third linked cervical cancer with early age of sexual intercourse. Studies conducted in Bhutan and Uganda reported higher proportions of respondents linking cervical cancer with having multiple sexual partners and early sexual debut [32,39]. Yet other studies conducted in Qatar and Hong Kong reported lower figures than those in this study [27,40]. Inability of the majority of the respondents to link cervical cancer with unsafe. Sexual practices and early sexual debut as noted in this study implies continuation of these behaviours, which can further worsen the burden of the disease.

Less than half of the respondents in this study knew the symptoms of cervical cancer. This is very similar to the result in studies conducted in Lagos and Zaria where, a similar proportion of women had the knowledge of the risk factors and symptoms of cervical cancer [24,41]. Poor knowledge about symptoms implies inability to seek medical help until the disease becomes advanced, which can further worsen the burden and outcome of the disease. Less than three-quarters of those aware of the disease knew that cervical cancer is preventable. The most commonly mentioned method of prevention were avoiding early sexual debut, avoiding multiple sexual partners and HPV vaccination. Similar findings were reported in the Bhutan

study, and Ugandan studies [32,39].

A high proportion of those who were aware of cervical cancer knew it can be detected through screening; screening enhances early detection and control of the disease and the disease is even curable if detected early. Reports of studies conducted in Nigeria and Qatar reported that lesser proportion of respondents understood that Pap smear could be used to detect precancerous state of cervical cancer and improve the treatment outcome [27,33].

Overall, less than a fifth of the respondents had a good knowledge of cervical cancer. This underscores the need for more aggressive educational and public enlightenment programmes about the disease, using all avenues where women can be reached: the internet, electronic media and public enlightenment in churches, mosques and hospital settings. Health workers who can give detailed and accurate information about the disease should be employed under these situations. This would go a long way to empower the people with adequate knowledge to take action against the disease.

Overall, more than half of the respondents had a positive attitude to cervical cancer screening. Majority of the respondents felt that screening was not against their religious beliefs; periodic screening is important to health and can decrease complications and every woman is at risk of developing the disease. This is corroborated by results of studies conducted in Zaria and Ibadan where there was generally a good attitude to cervical cancer screening [41,42]. In contrast to these, some studies conducted in Uganda and Qatar reported negative attitudes towards cervical cancer screening [25,27]. Attitude is closely related to behavior; those respondents with positive attitudes to cervical cancer screening are more likely to practice it. The government and health workers can leverage on this by encouraging such women to actually go for screening.

Study Limitation

The study did not collect information about cervical screening utilization and factors affecting it among the women. This can be a topic for future research.

Conclusion

This study showed that majority of the women in Somolu LGA were not aware of cervical cancer. Among those that were aware, majority knew through the internet and electronic media. Most of the women had a poor overall knowledge of cervical cancer while about half had a positive attitude to cervical cancer screening.

Using health care workers like doctors and nurses, the government and related non-governmental organizations should sponsor detailed and accurate health education programmes about the risk factors, symptoms, modalities of prevention; and treatment of cervical cancer. Special days like 'World Women Day', World Cancer Awareness Day' etc specially provide such opportunities. Health care workers should also use all available opportunities to educate women about cervical cancer whenever they visit health facilities to access care.

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Authors' Contributions

This work was carried out in collaboration between all authors. Foluke Olatona designed the study and also critically reviewed the writings. Eyitope Amu performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript; Stanley Ndugbamanaged the literature searches, data collection and analyses of the study. All authors read and approved the final manuscript.

References

- Anorlu RI. Tumours of the cervix uteri. In: Agboola A (Ed) textbook of Obstetrics and Gynaecology for Medical Students. 2nd Edition, Heinemann Educational Books Nigeria Plc, Ibadan. 2006; 2: 167-182.
- WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papilloma virus and related cancers in Nigeria. Summary Report 2010. Geneva. World Health Organization. 2010.
- World Health Organization. Global Health Estimates: Deaths by Cause, Age, Sex and Country, 2000-2012. Geneva; WHO 2014.
- Bruni 1, Barrionuevo-Rosas L, Alberto G, et al. Human Papilloma Virus and Related Diseases in Africa. Summary Report 27. CO Information Centre on HPV and Cancer (HPV Information Centre); 2017.
- Abotchie PN, Shokar NK. Cervical cancer screening among college students in Ghana: knowledge and health beliefs. *Int J Gynecol Cancer*. 2009; 19: 412-416.
- Kahesa C, Mwaiselage J, Wabinga HR, Ngoma T, Kalyango JN, Karamagi C, et al. Association between invasive cancer of the cervix and HIV-1 infection in Tanzania: the need for dual screening. *BMC Public Health*. 2008; 8: 262.
- Jedy-Agba E, Curado MP, Ogunbiyi O, et al. Cancer incidence in Nigeria, a report from population based cancer registries. *Cancer Epidemiol*. 2012; 36: 271-278.
- Awodele O, Adeyomoye AA, Awodele DF, Fayankinnu VB, Dolapo DC. Cancer distribution pattern in South-Western Nigeria. *Tanzania J Health Res*. 2011; 13: 125-131.
- Hildesheim A, Herrero R, Castle PE, Bratti MC, Rodriguez AC. HPV co-factors related to the development of cervical cancer from a population-based study in Costa-Rica. *British J Cancer*. 2001; 84: 1219-1226.
- World Health Organisation. Comprehensive Cervical Cancer Control: A Guide to Essential Practice. Switzerland; WHO Press. 2006.
- Peirson L, Fitzpatrick- Lewis D, Cliska D, Warren R. Screening for cervical cancer: a systematic review and meta-analysis. *Syst Rev*. 2013; 2: 35.
- Wright KO, Aiyedehin O, Akinyinka MR, Ilozumba O. Cervical cancer: community perception and preventive practices in an urban neighbourhood of Lagos (Nigeria) *ISRN Prev. Med*. 2014; 950534: 9.
- Bakari M, Takai IU, Bukar M. Awareness and utilization of Pap Smear among health care workers in Maiduguri, Nigeria. *Niger J Basic Clin Sci*. 2015; 12: 34-38.
- Udigwe GO. Knowledge, attitude and practice of cervical cancer screening (Pap Smear) among female nurses in Nnewi, South-Eastern Nigeria. *Niger J Clin Pract*. 2006; 9: 40-43.
- Bukar M, Takai IU, Audu BM. Determinants of utilization of Papanicolaou's smear among outpatient clinic attendees in North-Eastern Nigeria. *Africa J Med Sci*. 2012; 41: 183-189.
- Oyebode TA, Sagay SA, Ekwempu CC, Daru PH. The possible role of the gynaecologist in the poor awareness and non-utilization of the Pap smear among female health workers. *Trop J Obstet Gynaecol*. 2006; 23: 520.
- Aboyeji PA, Ijaiya MA, Jimoh AA. Knowledge, attitude and practice of cervical smear as a screening procedure for cervical cancer in Ilorin, Nigeria. *Trop J Obstet Gynaecol*. 2004; 114-117.
- Bukar M, Audu BM. Women's attitude towards cervical cancer screening in North Eastern Nigeria. *Niger Med Pract*. 2011; 60: 13-18.
- Parkin DM, Fray F, Ferlay J, Pisani P. Global cancer Statistics. *Cancer J Clin*. 2002; 2005: 74-108.
- Ajenifuja KO, Adepiti CA. Knowledge of cervical cancer and utilization of Pap's smear among patients in a tertiary centre in Southwestern Nigeria. *Ibom Med J*. 2008; 3: 56-60.
- Ezem BU. Awareness and uptake of cervical cancer screening in Owerri, South-Eastern Nigeria. *Ann Afr Med*. 2007; 6: 94-98.
- Mbamara U, Ikpeze O, Okonkwo J, Onyiaorah I, Ukah C. Knowledge, attitude and practice of cervical cancer screening among women attending gynecology clinics in a tertiary level medical care center in South Eastern Nigeria. *J Reprod Med*. 2011; 56: 491-496.
- Adekanle DA, Adeyemi AS, Afolabi AF. Knowledge, attitude and cervical cancer screening among female secondary school teachers in Osogbo, Southwest Nigeria. *AJCR*. 2011; 4: 24-28.
- Okunowo AA, Daramola ES, Soibi-Harry AP, Ezenwankwo FC, Kuku JO, Okunade SK, et al. Women's knowledge of cervical cancer and uptake of Pap smear testing and the factors influencing it in a Nigerian tertiary hospital. *Journal of cancer Research and Practice*. 2018.
- Mutyaba T, Mmiro FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. *BMC Med Educ*. 2006; 6: 13.
- National Population Commission (NPC). Lagos State Population Document. 2006.
- Al-Meer FM, Aseel MT, Al-Khalaf J, Al-Kuwari MG, Ismail MFS. Knowledge, attitude and practices regarding cervical cancer and screening among women visiting primary health care in Qatar. *East Mediterr Health J*. 2011; 17: 855-861.
- Abramson JH, Galinger PM. Computer Programs for Epidemiologists (PEPI) version 3.01. Llanidloes: Brixton Books. 1999.
- Ajah LO, Iyoke CA, Ezeonu PO, Ugwu GO, Onoh RC, Ibo CC. Association between knowledge of cervical cancer/screening and attitude of teachers to immunization of adolescent girls with Human Papilloma Virus vaccine in Abakaliki, Nigeria. *Am J Cancer Prev*. 2015; 3: 8-12.
- Akujobi N, Ikechebelu I, Onunkwo I, Onyiairah V. Knowledge, attitude and practice of screening for cervical cancer among female students of a tertiary institution in South Eastern Nigeria. *Niger J Clin Pract*. 2008; 11: 216-219.
- Nseem MB, Amal IH. The knowledge, attitude and practice of pap smear among local school teachers in Sharjah District. *MEJFM*. 2004; 4: 1-16.
- Mukama T, Ndeji R, Musabyimana A, Halage AA, Musoke D. Women's knowledge and attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda. *BMC Women's Health*. 2017; 17: 9.
- Awodele O, Adeyomoye A, Awodele DE, Kwashi V, Awodele IO, Dolapo DC, et al. A study on cervical cancer screening amongst nurses in Lagos University Teaching Hospital, Lagos Nigeria. *J Canc Educ*. 2011; 26: 497-504.
- Eftyhia GV, Efterpi T, Angeliki M, Athanasia BN. The knowledge of women in a Greek province regarding cervical cancer, its prevention capabilities and the Pap test. *Health Sci J*. 2010; 4: 101-109.
- Abiodun O, Fatungase O, Olu-Abiodun O, Idowu-Ajiboye B, Awosile J. An assessment of women's awareness and knowledge about cervical cancer and screening and the barriers to cervical screening in Ogun State, Nigeria. *J Dent Med Sci*. 2013; 10: 52-58.
- Obiageli N, Erinsho L, Mustapha J, Olaniyi O, Adelaiye R, Lawson L, et al. Knowledge and attitudes towards cervical cancer and human papillomavirus: a Nigerian pilot study. *Afr J Reprod Health*. 2010; 14: 96-106.
- Saith KH. Attitudes, knowledge, and practices in relation to cervical cancer and its screening among women in Saudi Arabia. *Saudi Med J*. 2009; 30: 1208-1211.
- Adejuyigbe F, Balogun B, Sekoni A, Adegbola A. Cervical cancer and human papilloma virus knowledge and acceptance of vaccination among medical students in Southwest Nigeria. *AJRH*. 2015; 19: 140-148.

39. Dhendup T, Tshering P. Cervical cancer knowledge and screening behaviours among female university graduates of year 2012 attending national graduate orientation program, Bhutan. *BMC Women's Health*. 2014; 14: 44.
40. Leung SK, Ivy L, Shing LK. Cervical cancer screening: knowledge, health perception and attendance rate among Hong Kong Chinese women. *Int J Women's Health*. 2010; 2: 221-228.
41. Ahmed S, Sabitu K, Idris S, Ahmed R. Knowledge, attitude and practice of cervical cancer screening among market women in Zaria, Nigeria. *Niger Med J*. 2013; 54: 316-319.
42. Ezomo OT. Knowledge, attitude and practice of cervical cancer preventive strategies among market women in Ibadan, Nigeria. In: proceedings of the Thirteenth Annual AACR International Conference on Frontiers in Cancer Prevention Research; 2014; New Orleans, LA. Philadelphia (PA): AACR; *Can Prev Res* 2015; 8: Abstract no B13.