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Journal of Women's Health and Reproductive Medicine

2022
Vol.6 No.5:45

Working towards a Cervical Cancer Free Society: Insights into Intention to Screen among Nigeria Women

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Received date: Dec 09, 2021, Manuscript No. IPWHRM-22-11950; **Editor assigned date:** July 14, 2022, PreQC No. IPWHRM-22-11950 (PQ); **Reviewed date:** July 22, 2022, QC No. IPWHRM-22-11950; **Revised date:** Aug 05, 2022, Manuscript No. IPWHRM-22-11950 (R); **Published date:** Aug 12, 2022, DOI: 10.36648/ IPWHRM.6.5.45

Citation: Oluwatosin IE, Aderonke AL, OB O (2022) Working towards a Cervical Cancer Free Society: Insights into Intention to Screen among Nigeria Women. J Women's Health Reprod Med Vol.6 No.5: 45

Abstract

Background: Detection of the premalignant forms of cancer through screening is one of the effective strategies in the prevention of the cervical cancer. This study investigated factors that influence women's intention to go for Cervical Cancer Screening (CCS) among heterogeneous group of women in Nigeria.

Subjects and Method: A cross-sectional survey was conducted among 852 women age between 18 and 65 years old. A structured questionnaire was adopted to collect data on interviewer-administered basis. Factors such as perceived susceptibility, source of information, age and marital status were considered as independent variables.

Results: Using SPSS version 20, Binary Logistic regression models and Chi-square were used to identify factors associated with the outcome variable. Knowledge of the disease signs, symptoms, risk factors and prevention methods were 4.2%. Majority of the subjects had inadequate level of knowledge of cervical cancer and its screening guidelines. Also, the reported source of information was principally from non-medical sources such as colleagues, relatives and friends. Perceived susceptibility and marital status were positively associated with intention to use CCS (OR = 0.411; 95% CI = 0.235-0.717) and (OR= 0.649; 95% CI =0 .477-.883) respectively. Pearson chi square coefficient showed the comparisons between the sources of information and intention to uptake CCS. Some of the sources were positively associated to intention to use the services with doctors/nurses ($p<0.05$), community health workers ($p< 0.05$).

Conclusion: Overall, the intention to use cervical cancer screening was a function of perceived susceptibility, and source of information on cervical cancer and screening.

Keywords: Cervical cancer.

Background

Cancer of the cervix is the most common, deadly genital cancer and one of the leading causes of morbidity and mortality among female population worldwide. It is estimated that over 275,000 females die annually from cervical cancer, with more than 500,000 new cervical cancer diagnoses each year (Jemal et al. 2011 and Nwabichie, Rosliza, Suriani, 2016). Worryingly, over 80% of cervical cancer cases occur in low- and middle-income countries (WHO, 2019) and the first ten (10) countries with highest rate of cervical cancer mortality are found in Africa (Jemal et al. 2011; CCGCC, 2013; Sharmila 2016). For instance, in sub-Saharan Africa, 34.8 new cases of cervical cancer are diagnosed per 100,000 women annually and 22.5 per 100,000 women die from the disease (Olubodun, Oluwakemi & Mobolanle 2019). These figures are far higher than what is obtainable in other parts of the world. Worse still, it has been projected that by 2030, about half a million women will die of cervical cancer, with over 98% of these deaths expected to occur in low- and middle-income countries (CCGCC, 2013).

Nigeria is not exempted from the menace of cervical cancer, with high incidence and mortality rates. Among Nigerian women, cervical cancer is reportedly the most common genital tract malignancy and a leading gynecological malignancy with high mortality (Cronje, 2004). As reported by the Cervical Cancer Global Crisis Card (CCGCC) in the year 2013, Nigeria ranks 10th in mortality rating from cervical cancer [1].

Although the rate of mortality arising from cervical cancer incidences is high, the cancer is preventable if detected early by screening for pre-malignant lesion. As mentioned earlier, the main cause of cervical cancer is the sexually transmitted Human Papilloma Virus (HPV), which is reportedly the most common viral infection of the female reproductive tract. Screening serves to identify abnormalities indicative of either a pre-cancer or specific cancer in individuals who may not have developed any symptoms. This would enhance prompt and proper diagnosis and treatment. Despite the palliative measures obtainable from cervical cancer through screening, many low-income countries find it extremely difficult to institutionalize comprehensive and successful screening programmes unlike most developed countries. This is due to: A lack of country-wide infrastructure

base, poverty, lack of resources, marginalization of women, and a high cost involve implementing and maintaining such programs (Brown, Breugelmans, Theodoratou, Benard, 2006; Denny, Quinn and Sankaranarayanan, 2016). This has resulted in low incidence as well as mortality rate of cervical cancer in high income countries. In fact, mortality rate from cervical cancer is reported to fall by 60%-90% in developed countries due to routine screening (American Cancer Society).

Furthermore, in countries where cervical cancer screening programs are available, many factors affect or influence the level of awareness and consequent uptake of cervical cancer screening by women [2-4]. This becomes evident given the disparity in mortality from Cervical Cancer (CC) among certain ethnic minorities and lower socio-economic groups with lower access to screening which is adduced to differences in the uptake of screening (Downs et al., 2008; Hopkins and Wood, 2013).

In Nigeria, awareness and uptake of cervical cancer screening is reportedly low. Although screening centres exist in many metropolitan cities, there are no established screening programmes in most rural areas. The low level of cervical cancer screening uptake have made mortality and morbidity associated with the disease to remain high in the country (Cronje, 2004; Ilevbare, Adegoke, Onifade, 2018). Furthermore, the behavioural intention among a population is important when planning an intervention. According to the Theory of Planned Behaviour behaviour is best predicted by simply asking an individual if they plan to behave in a certain way in future. This implies that most of the time, an intention to behave usually results in actual action/behaviour. In order to ascertain this statement, the present study measures women's future intention regarding uptake of cervical cancer screening [5].

Several studies have established the relationship between willingness, uptake, success of cervical cancer screening and women's awareness and knowledge sources. Invariably, cervical cancer screening among women is influenced by knowledge of cervical cancer, role of health care providers, sources of information, awareness and availability of facilities (Kumar and Tanya, 2014). In many African nations, poor or low level of knowledge of cervical cancer and screening has been reported Tebeu et al. 2008; Chumnan et al. 2009; Getahun, Mazengia, Abuhay, Birhanu, 2013, Saad Ahmed, Suleiman, Rukaiya (2013). Women obtained knowledge about cervical cancer and its screening through different means or channels, although this has been correlated with educational and socio-economic status. Principal among these is through health care provider/ medical worker. For instance, recommendation of a doctor is reportedly a strong motivation to be screened for cervical cancer [6]. Internet and mass media such as radio/ television is another important source of information even for those in rural areas. Other studies also reported the role of family and friends, lecture and seminars attendance; religious gatherings, sensitisation at public places such as market, among others (Austin et al. 2002; Biobaku, Fatusi, Afolabi, 2015; Obi et al. 2007; Akpo et al. 2016).

Many studies globally and in Nigeria have reported the various factors influencing the intention and actual uptake of cervical screening exercise. The success of any screening program as well as uptake depends on factors such as perceived quality of health care services, access to health care, health professionals, easy availability, socio-economic barriers, cost of screening, employment status, residential area, educational levels, as well as the awareness and attitude of women at the receiving end (Claeys et al. 2002; Watkins et al. 2002; Arrossi et al. 2008; Soneji and Fukui 2013; Oluwole et al. 2017, Elamuragan, Rajendran, Thangamani, 2016).

Age has been shown to play a pivot role in the incidence and progression of cancer, Ma and Yu (2006) reported that the incidence rate of cancer increased substantially with age, the authors opined that cancer is a disease of old age. Several studies in different part of the world, although with inconsistent findings have reported the correlation between age and attitude to cervical cancer screening. For instance, Tapera et al. (2019) reported that cervical cancer patients aged 45 years and above have poor knowledge of causes of cervical cancer in Zimbabwe. In a study in India, Elamuragan, Rajendran, Thangamani, (2016) reported that all (100) high school teachers aged between 20 to 59 years surveyed had knowledge of cervical cancer, 98% knew about the availability of some screening method for cervical cancer, and 79% about Pap smear. In addition, only 52% of the teachers agreed that women above 30 years required Pap smear and only 38% of teachers had undergone screening [7]. In Ethiopia, the incidence of cervical cancer is more among women between 15 and 44 years of age. In another study, it was reported that majority of women within age 21- 23 years had heard about cervical cancer, and a higher proportion of the women knew about its causes, symptoms and prevention. the study further showed that women aged 17– 20 years were more likely to have positive attitude towards cervical cancer screening (WHO, 2010; Tsegaye, Mengistu, Gultie, 2018).

Of great importance is the need to promote cervical cancer screening behaviour among women. This requires accurate understanding of the factors that influence women's motivation towards the essential health service. This study investigated the factors that can influence intention to use cervical cancer screening among heterogeneous group of women between ages 18-65yrs in Nigeria. To achieve this, the following objectives were set: To examine the screening intention among women in the study area; to identify the extent of knowledge and various sources of information of subjects on cervical cancer and screening; to investigate the relationship between marital status and intention to screen for CC and lastly, to establish the relationship between perceived susceptibility and intention to utilize cervical cancer screening [8].

Subjects and Method

Study design

The study employed a descriptive, cross-sectional research design.

Population and sample

For this study, information on cervical cancer screening utilization and intention to screen was elicited from women in Ibadan, Nigeria. Ibadan is a major city in the South West, Nigeria with individuals of diverse and heterogenous characteristics. The city also possesses an aggregate of diverse ethnic, religious and socio-economic profiles useful for the variables of interest. The study's subjects were approached to participate in the survey from their places of work including market places. The rationale for this was to ensure an all-inclusive sample frame of women of different socio-economic background.

Study variables

The dependent variable used in this study is the intention of subject to uptake cervical cancer screening in the nearest future as a preventive measure against cervical cancer. This is envisaged to have been influenced by the source of information on cervical cancer and cervical cancer screening in the past. And the extent an individual perceives herself to be susceptible to the disease (cervical cancer) as well as the marital status of the subjects. Positive and negative response to the question on intention to uptake cervical cancer was represented with the values 1 and 0, respectively. The independent variables are Knowledge of cervical cancer and its screening guidelines, Age and Perceived susceptibility towards cervical cancer. Subjects were examined on their knowledge of the symptoms of cervical cancer, risk factors, preventive measures and responses on source of information on cervical cancer and cervical cancer screening were grouped into medical and non-medical sources. For instance, the medical sources include information from doctors, nurses and community health workers while non-medical sources include information from friends, relatives, colleagues and news media outlets. In terms of age, subjects were grouped into three categories as: Young adult women (18-35 years), middle aged women (36-54 years) and older adult women (55-65 years) (Petry, 2002). Lastly, in terms of perceived susceptibility (High or Low), women who perceive themselves as highly susceptible to a disease have been reported as more likely to utilize a health preventive service such as cervical cancer screening. Therefore, this study explored the extent to which a woman considers herself to be susceptible to cervical cancer and how it influences their intention to utilize cervical cancer screening. Subjects were grouped into two categories that are those who perceive themselves to be highly susceptible to cervical cancer and otherwise [9-11]. This was operationalized by 1 and 0 respectively for high and low.

Operational definition of variables

Intention to screen for cervical cancer herein refers to respondent's plan to uptake cervical cancer screening in the nearest future. Perceived Susceptibility in this study describes the extent to which an individual sees herself likely to have cervical cancer. Sources of information on cervical cancer and its screening refer to the various sources where the study subjects got to hear and learn about cervical cancer and cervical cancer screening.

Study instruments

The comprehensive survey instrument had different sections comprising of subjects' screening behavior, their intention to screen as well as their knowledge, attitudes and beliefs towards cervical cancer and screening. However, this article focuses on subject's intention to screen. Out of these, only 782 subjects responded to the enquiry of ever heard about cervical cancer and its screening guidelines. Out of these, about 73% of the subjects reported to have ever heard of cervical cancer as well as cervical cancer screening. Therefore, since the study deals with intention to screen for cervical cancer and subjects level of knowledge, the rest of the analysis is based on the 73% of 782 respondents which is 571 subjects.

Data Analysis

Descriptive statistics using means, standard deviations, skewness, and kurtosis indices were employed to examine each of the independent variables. All preliminary data analyses were conducted using SPSS version 20.0. A chi-square analysis was conducted to establish association between an independent factor and dependent variable. In addition, correlation coefficients and indices of reliability were computed. All subsequent analyses were conducted using binary logistic regression. The binary logistic regression is best suited for dichotomous dependent variable. However, in order to ascertain reliability (or internal consistency) of a number of items that form each of the scales, we carried out a reliability test of the scales which was verified through the Cronbach alpha coefficient [12-15]. However, the minimum coefficient was 0.76 and the maximum 0.93 which were all within the acceptable values of 0.7. This indicates that the problems of reliability and validity do not exist in any of the models.

Research ethics

Approval to carry out this study was sought for and received from the institutional ethical review committee of Obafemi Awolowo University, Nigeria under the Institute of Public Health. The study was approved to be carried out with approval number IPH/OAU/879. In addition, permission was obtained from the market leaders of the respective markets visited and permissions were also obtained from the Chairmen of the Local government secretariats where questionnaires were administered. Furthermore, written and signed informed consent was obtained from each respondent and anonymity was maintained.

Results

This section consists of two parts; the demographic characteristics of sample including variables under study, while the subsequent sections discuss the results of the inferential analysis, correlation and regression analysis where important determinants of screening intention are elaborated. Scale consistency was assessed for each construct; most achieved a Cronbach's of >0.6

Sample characteristics

A total of 852 women between the ages of 18-65yrs completed the questionnaires. Table 1 gives a description and distribution on the characteristics of the women surveyed.

Characteristics	Category	Frequency	Percentage
Age	18-35 years old	354	62%
	36-54 years old	159	27.8%
	55-65 years old	58	10.2%
Percieved Susceptibility			
	Highly susceptible	426	76.30%
	Lowly susceptibile	145	23.70%
Screening Intention	Positive Intention	462	80.80%
	Negative Intention	109	19.20%
Knowledge Sources of Information on cervical cancer	Radio/Television	257	46.8%
*Multiple response			
	Doctors/Nurses	199	37.3%
	Colleagues	46	8.7%
	Community Health workers	106	18.6%
	Relatives	53	9.3%
	Friends	60	11.4%
Marital Status	Single	196	34.3%
	Married	358	62.7%
	Seperated	17	3%

Table 1: Sample characteristics of categorical variables.

Table 1 explains the sample characteristics of variables, such as intention to screen, marital status, level of knowledge, sources of knowledge in the study area. Majority of the women (61.7%) surveyed were between the ages of 18 and 35, that is young adult women. Also, women were categorized into two groups of those with positive intention to utilize screening in the future and women with non-intention to uptake. From the data analysis, out of the 571 responses analyzed, over 80% of the women affirmed positively to intend to uptake cervical cancer screening in the near future considering the benefits attached to early screening [16,17]. Furthermore, the respondents were grouped into women that perceive them to be highly susceptible to cervical cancer and otherwise.

In terms of sources of information on cervical cancer and screening, this study explored the possible varieties where such health information can be sourced. In Table 1, the sources of information can be further explained as medical and non-medical sources. In this study, the medical sources of information are from doctors, nurses and community health workers. The information from these sources is likely to be more accurate and timely than those from non-medical sources. However, more respondents received information about cervical cancer and cervical cancer screening guidelines from non-medical sources (Table 2).

Knowledge Rating	Frequency	Percentage
Poor	535	93.7%
Good	36	6.3%

Table 2: Knowledge of Women on Cervical Cancer and its Screening.

Respondents' depth of knowledge on specificities of cervical cancer and cervical cancer screening was investigated in this study. This investigation was carried out among women that

reported to have heard about cervical cancer and its screening methods before the study [18,19]. This is necessary to examine the extent to which individual respondents have correct and adequate information on the causes, symptoms, preventive measures and risk factors of cervical cancer as well as their knowledge of screening guidelines.

The general knowledge level of respondents regarding various aspects of cervical cancer and screening are presented in Table 2. Overall, a significant number of respondents had poor knowledge of the variables considered. From the breakdown of respondent's knowledge of symptoms of cervical cancer, our analysis implies poor knowledge of the signs and symptoms of cervical cancer among the study participants.

Regarding the knowledge of factors that predispose a woman to having cervical cancer, the respondents displayed a good knowledge. A good percentage (60.8%) of the study respondents reported multiple sexual partners as a risk factor. However, respondents did not display adequate knowledge in terms of other risk factors such as type of diet, alcohol consumption and genetic factors. As expected, majority (90%) of the respondents are unware of number of children being a risk factor for cervical cancer. This was also the case for long-term use of contraceptive, as 69% of the respondents reported it as nonrisk factor for cervical cancer [20]. Interestingly only 43.2% and 33.2% of the respondents reported cigarette smoking and excessive alcohol consumption to be risk factors of cervical cancer respectively. In addition, some of the respondents (55%) are aware that sexually active women of 18 years and above are more prone to cervical cancer. A good number of respondents opined that all sexually active women above 18 years of age should be screened for cervical cancer.

Furthermore, this study finds that majority (71.7%) of the respondents had good knowledge of eligibility for cervical cancer screening. Generally, the analysis reveals a relatively unequal level of knowledge among respondents; the knowledge of who can have cervical cancer and who should be screened were relatively good when compared with knowledge in other sections. For each knowledge sub-section, items were computed to obtain a mean score [21,22]. Accordingly, only 36 (4.2%) of the respondents who answered above the mean were considered as adequately knowledgeable on cervical cancer screening. Nevertheless, the overall knowledge was poor across the various categories investigated.

Bivariate analysis

This section presents the results of data analyses on the association of study variables (Table 3).

Variable	Intention to screen				OR	P
	No		Yes			
	N	%	N	%		
Knowledge source of information						
Relatives	77		29		0.65	0.03
Doctors/Nurses	54		104			
	69		35			
Friends	70		23			
Colleagues						
Community Health workers 60 56						
Radio/Television/Newspaper 45 148						

Table 3: Determinants of Intention to screen for cervical cancer (an analysis by chi square)

This study also explored the respondents' sources of information on cervical cancer and preventive measures. This was necessary in order to explain the necessity of awareness and intervention programmes on health promoting services such as cervical cancer screening. The highest percentage of respondents reported to have heard about cervical cancer and the screening procedures to detect the disease was mostly from the news media such as radio stations, television sets and on newspapers. This implies that the health professionals and community health workers should intensify efforts of sensitizing the populace on the benefits of early screening to prevent cervical cancer [23]. Health information from medical sources has been proven to be more accurate and beneficial to health seekers. Medical sources of information are more respected and the directives are mostly adhered to when compared with the information from non-medical sources which could enhance intention to screen for cervical cancer. Services such as cervical cancer screening could be propagated among women in ante- and post-natal clinic, family planning clinic as well as other avenues in the hospitals. This would help disseminate accurate and useful information about cervical cancer, its risk factors, benefits of early detection and preventive measures and the various screening procedures (Table 4).

Independent Variables	OR	95% CI		p
		Lower limit	Upper limit	
Perceived susceptibility	0.411	0.235	0.717	0.002
Age	0.711	0.423	1.194	0.711
Marital Status	0.649	0.477	0.883	0.006
Level of knowledge	0.785	0.218	2.834	0.712
N observation= 361				
-2 log likelihood= 337.105				
Nagelkerke R2= .078				

Table 4: The result of binary logistic regression analysis

In the logistic regression analyses (Table 4), the predictors of intention to screen for cervical cancer were perceived susceptibility to cervical cancer, marital status and level of knowledge of the women sampled. Perceived susceptibility (OR = 0.411; 95% CI =0 .235-0.717) and marital status of women (OR = 0.649; 95% CI = .477-.883) were found to have statistically significant relationship with the intention to utilize cervical cancer screening While the level of knowledge did not influence the intention to utilize cervical cancer screening [24].

Discussion

This study extensively examined the intention to utilize cervical cancer screening among a group of heterogeneous women aged between 18 and 65 years in Ibadan, Nigeria. Since a growing body of literature links socio-demographics and beliefs to health seeking behaviour, we therefore hypothesized marital status, perceived susceptibility to cervical cancer and level of knowledge on cervical cancer to influence participants' intentions to screen for cervical cancer. The intention to screen is an important step in planning an intervention programme towards promoting screening behaviour among the women.

From the analysis, over 80% of the women affirmed positively to intend to uptake cervical cancer screening in the near future considering the benefits attached to early screening. This is encouraging as intention, according to the "theory of planned behaviour" will likely lead to actual behaviour. In order to reduce the incidence and mortality accrued to late presentation of cervical cancer in Nigerian hospitals, intervention programme needs to pay close attention to intention and utilization of preventive health services. The findings of this study is a clear evidence that majority of women are willing to uptake cervical cancer screening when there is regular awareness and sensitization on the consequences of positive or negative health seeking behaviour [25,26].

This study further examined respondents' level of knowledge on cervical cancer and cervical cancer screening with respect to symptoms, risk factors, prevention and frequency of screening. According to existing literature, individual's levels of knowledge do likely influence their intention to engage in positive health behaviour (Baskaran and Subramanian, 2013). Knowledge of cervical cancer, the risk factors, symptoms, screening guidelines and prevention techniques are central to the efforts to influencing screening among all women. More importantly, the level of women's knowledge on cervical cancer and its management is likely to influence the intention to screen among women that has never been screened for cervical cancer. However, limited knowledge and a lot of misconceptions about cervical cancer screening were revealed in the study as deterrent to screening.

Furthermore, marital status of women had influence on their intention to uptake screening in the nearest future. This finding is in line with studies, which attested to the beneficial role of marriage in promoting intention to screen for cancer. It could be argued that factors such as getting approval of husband's consent in uptaking such an invasive health service is contributory evidence. Also, some women reported that relative and friend's perception of been promiscuous if one goes for such preventive health services as one of the barriers of uptaking cervical cancer screening.

Similar to our current findings regarding perceived susceptibility, a number of other studies have examined the noteworthy association between perceived susceptibility beliefs and intention to utilize cervical cancer screening among women in Nigeria and Africa. For instance, McQueen et al. (2010) conducted a longitudinal study among 1001 white male automotive workers for intention to utilize colorectal cancer screening. Using a longitudinal path model, perceived susceptibility interacted differently with psychosocial constructs to predict colorectal cancer screening intention or behaviour.

Furthermore, a descriptive, cross-sectional survey by Baskaran and Subramanian (2013) among 369 women attending an outpatient centre in Malaysia reported perceived susceptibility and levels of knowledge to be significantly associated with barriers to cervical cancer screening. Accordingly, future research should consider developing and testing better measures of intending screening behaviour to influence development of more effective educational interventions.

Findings from this study are valuable for improving intention to uptake cervical cancer screening among Nigeria women. However, the study's limitations should be considered. First, a convenience-sampling plan was utilized for this cross-sectional

study, data were only collected in a state fair setting, and participation was limited to women living in Ibadan. Therefore, causation cannot be demonstrated and generalizing these findings to a larger population of Nigeria women is not feasible.

This study is however limited by the number of respondents sampled compared to the entire population of women in Nigeria and the categories of women covered was limited to certain categories.

In conclusion, the findings of this study indicate that perceived susceptibility and marital status are contributory factors to women's intention to utilize cervical cancer screening. Also, the women are aware of the benefits and necessity of cervical cancer screening as this is a key element for women to understand the safety, accuracy and acceptability of cervical cancer early screening.

This indicates that substantial efforts should be made to ensure that the intention to screen leads to actual positive behaviour of utilizing the different forms of screening. Our findings also indicate that women's decision-making group include husband, friends and peers as well as groups that have established roles in cancer prevention. Agencies with mandates on cancer prevention, screening and treatment should adopt strong messages that endorse and support early testing for cervical cancer. Additionally, education efforts should not be solely targeted at less educated women, but should also include their peers and family members, as these individuals are influential agents in women's decisions about screening. Finally, screening centres should be easily accessible in neigbourhood and women should be made to understand how they can access screening in order to translate intention to actual behaviour.

Financial Support and Sponsorship

None.

Acknowledgement

The authors hereby acknowledge all the survey respondents for their time in filling the research instrument as well as the field officers of the survey.

Conflict of Interest

No conflict of interest declared.

References

1. Ajzen I, Fishebein M (1980) Understanding attitudes and predicting social behavior. Prentice-Hall: New York, United States.
2. Arrossi S, Ramos S, Paolino M, Sankaranarayanan R (2008) Social inequality in Pap smear coverage: Identifying under-users of cervical cancer screening in Argentina. Reprod Health Matters 16: 50–58.
3. Assoumou SZ, Mabika BM, Mbiguino AN, Mouallif M, Khattabi A et al. (2015) Awareness and knowledge regarding of cervical cancer, Pap smear screening and human papillomavirus infection in Gabonese women. BMC Women's Health 15: p37.
4. Austin LT, Ahmad F, McNally MJ, Stewart DE (2002) Breast and cervical cancer screening in Hispanic women: A literature review using the health belief model. Womens Health Issues 12: 122–128.
5. Baskaran AJ, Subramanian H (2013) Perceived Susceptibility, and Cervical Cancer Screening Barriers in Malaysian Women Visiting Outpatient Clinics. Asian Pac J Cancer Prev 14: 7693-7699.
6. Brown RE, Breugelmans JG, Theodoratou D, Benard S (2006) Costs of detection and treatment of cervical cancer, cervical dysplasia and genital warts in the UK. Curr Med Res Opin 22: 663–670.
7. Chumnan KYP, Kriangsak J, Usanee S, Jatupol S (2009) Knowledge, awareness and attitudes of female sex workers toward HPV infection, cervical cancer, and cervical smears in Thailand. Int J Gynecol Obstet 107: 216–219.
8. Claeys P, Gonzalez C, Gonzalez M, Page H, Bello RE, et al. (2002) Determinants of cervical cancer screening in a poor area: Results of a population-based survey in Rivas, Nicaragua. Trop Med Int Health 7: 935-941.
9. Cronje HS (2004) Screening for cervical cancer in developing countries. Int J Gynaecol Obstet 84: 101-108.
10. Denny L, Quinn M, Sankaranarayanan R (2016) Screening for cervical cancer in Developing countries. Vaccine 24: 71-77.
11. Downs LS, Smith JS, Scarinci I, Flowers L, Parham G (2008) The disparity of cervical cancer in diverse populations. Gynecol Oncology; 109: 22–30.
12. Getahun F, Mazengia F, Abuhay M, Birhanu Z (2018) Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia. Reprod Health 15: p29.
13. Hopkins TG, Wood N (2013) Female human papillomavirus (HPV) vaccination: Global uptake and the impact of attitudes. Vaccine, 31: 1673–1679.
14. Ilevbare OE, Adegoke AA, Onifade OJ (2018) Adopting Innovative appraoches to cervical cancer screening among women in developed countries: Evidence from Nigeria. International Journal of Behavioural and Healthcare Research 6: 268-287.
15. Jemal A, Bray F, Center MM, Ferlay J, Ward E, et al. (2011) Global cancer statistics. CA Cancer J Clin 61: 69–90.
16. Kumar HN, Tanya S (2014) A study on knowledge and screening for cervical cancer among women in Mangalore city. Ann Med Health Sci Research 4: 751– 756.
17. McQueen A, Vernon SW, Rothman AJ, Norman GJ, Myers RE et al. (2010) Examining the role of perceived susceptibility on colorectal cancer screening intention and behavior. Annals of Behavioral Medicine 40: 205–217.
18. Obi SN, Ozumba BC, Nwokocha AR, Waboso PA (2007) Participation in highly subsidized cervical cancer screening by women in Enugu, South-east Nigeria. J Obstet Gynaecol 27: 305–307.
19. Olubodun T, Oluwakemi OO, Mobolanle RB (2019) Knowledge, attitude and practice of cervical cancer prevention, among women residing in an urban slum in Lagos, South West, Nigeria. Pan African Medical Journal 32:130.
20. Petry NM (2002) A comparison of young, middle-aged, and older adult treatment-seeking pathological gamblers. The Gerontologist 42(1): 92-99.
21. Saad Ahmed KS, Suleiman I, Rukaiya A (2013) Knowledge, attitude and practice of cervical cancer screening among market women in Zaria, Nigeria. Niger Med J 54: 316.

22. Sharmila P, Gauravi M, Surendra S (2016) Global strategies for cervical cancer prevention. Current Opinion in Obstetrics and Gynecology. 28: 4-10.

23. Soneji S, Fukui N (2013) Socio-economic determinants of cervical cancer screening in Latin America. Rev Panam Salud Publica 33: 174-182.

24. Tapera O, Dreyer G, Kadzatsa W, Nyakabau AM, Stray-Pedersen B et al. (2019) Cervical cancer knowledge, attitudes, beliefs and practices of women aged at least 25 years in Harare, Zimbabwe. BMC Women's health 19: p91.

25. Tebeu PM, Major AL, Rapiti E, Petignat P, Bouchardy C, et al. (2008) The attitude and knowledge of cervical cancer by Cameroonian women: A clinical survey conducted in Maroua, the capital of Far North Province of Cameroon. Int J Gynecol Cancer 8: 761–765.

26. Watkins MM, Gabali C, Winkleby M, Gaona E, Lebaron S (2002) Barriers to cervical cancer screening in rural Mexico. Int J Gynecol Cancer 12: 475–479.