Global Journal of
Health Science
(GJHS)

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IPRJB
INTERNATIONAL PEER REVIEWED
JOURNAL AND BOOK PUBLISHING

Global Journal of Health Sciences

ISSN 2519-0210 (Online)
Vol 9, Issue 4, No.4, pp 40 - 53, 2024

www.iprjb.org

Factors Associated with Cancer Screening Practices among Women in Kitale Municipality

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Article History

Received 9th May 2024

Received in Revised Form 16th June 2024

Accepted 25th July 2024

How to cite in APA format:

Makunja, S., Aluoch, J., & Ngugi, C. (2024). Factors Associated with Cancer Screening Practices among Women in Kitale Municipality. *Global Journal of Health Sciences*, *9*(4), 40–53. https://doi.org/10.47604/gjhs.2792

Abstract

Purpose: The aim of the study was to assess cervical cancer screening practice and factors associated with cervical cancer screening among women in Kitale Municipality.

Methodology: A cross-sectional study using stratified simple sampling to select a sample of 422 women aged 30-69 years old was adopted. A Structured questionnaire was used to collect data. Data entry and coding was done in SPSS v20. Subsequent content analysis was used to descriptively summarize and compute proportions, mean and standard deviation in reporting socio-demographic data. To test the association between dependent and independent variables, Chi-square was used while Multiple Logistic Regression analysis was used to generate adjusted odds ratios of association. Data was presented in form of tables and figures.

Findings: Findings suggest that 76% (321) knew about cervical cancer screening. Results revealed that only 27% (114) had ever gone for cervical cancer screening. There was a crude significant association between awareness of cervical cancer risk factors and screening (OR=1.08, *p*=0.000). Awareness therefore encouraged screening. Unawareness of cervical cancer risk factors & screening tests available, low socio-economic status and socio-demographic factors were associated with low screening practice. In conclusion, this study found that there was modest awareness about cervical cancer but low screening practice among women in this Municipality.

Unique Contribution to Theory, Practice and Policy: The study recommends scale up for cervical cancer awareness and screening campaigns by stakeholders. The current study has added knowledge that will be used by stakeholders advocating for cervical cancer awareness and screening that will aid in uptake important in early detection and treatment of cervical cancer cases, and hence reducing case morbidity and mortality.

Keywords: *Cervical Cancer, Screening Practice, Factors, Women*

Global Journal of Health Sciences

ISSN 2519-0210 (Online)
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INTRODUCTION

Cervical cancer contributes varying percentages to female mortality rates in different countries. It's the fourth leading cause of cancer deaths in women worldwide, with an estimated 270,000 deaths and 530,232 new cases annually (Jean *et al*., 2012; Ferlay *et al.*, 2010). Of the estimated deaths that occur from cervical cancer every year, more than 85% occur in developing countries representing 13% of all female cancers (WHO, 2010). According to the World Health Organisation (WHO) report for Global Alliance for Vaccine and Immunisation (GAVI) countries, the highest incidence rates of cervical cancer are found in Eastern and Western Africa (Sanjose *et al.*, 2012). Cervical cancer is projected to kill over 474,000 women annually worldwide by year 2030 and over 95% of these deaths are expected to be in low- and middle-income countries largely due to poor cervical cancer screening practice (Huchko *et al*., 2011). It is also projected that cervical cancer morbidity and mortality rates will double in sub-Saharan Africa by 2025 (WHO, 2014).

Cervical cancer screening is vital in prevention, early detection, and treatment of the disease. Awareness of cervical cancer by the women influences utilisation of cervical cancer screening services by women (Ombech *et al*., 2012; Cervical Cancer Action (CCA) Report Card, 2015). One of the most effective ways of preventing cervical cancer is increasing awareness and knowledge among women. It is reported that lack of cervical cancer awareness among women contributes to high incidence of cervical cancer in most developing countries (Kyle *et al*., 2013). In many developing countries, women's knowledge of cervical cancer and Pap smear is very limited. In a survey performed in Nigeria, only 15% had ever heard of cervical cancer while the knowledge of cervical cancer in Saudi Arabia is far behind that in the developed countries (Asmaa, 2013). In Kenya, the situation is not different. In a survey among women seeking reproductive services at Moi Teaching & Referral Hospital, only 12.3% of participants had ever gone for cervical cancer screening (Were *et al*., 2011). The awareness of cervical cancer among the women population in Kenya as well as in Kitale Municipality is not known.

Screening, detection, and diagnosis of cervical cancer involve several methods. The most used method is the Papanicolau (Pap) test that was developed and introduced in the year 1949 (Sawaya, 1999). It basically involves cytologic examination of cells obtained from the cervix surface using a brush or wooden spatula. This is the most used cervical cancer screening method in developed countries. Other commonly used cervical cancer screening methods include HPV test, cervical biopsy, endocervical curettage, colposcopy, and pelvic examination.

In developing and low-income countries, alternative cancer screening methods are the most commonly used (Jean *et al.*, 2012). These involve two primary techniques: Visual Inspection using Acetic acid dilute solution (VIA) and Visual Inspection using Lugol's Iodine solution (VILI). Both involve application of the solutions on the cervical cells and visually inspecting the presence of malignant cells without magnification (Jean *et al.*, 2012).

The practice of cervical cancer screening varies globally and within individual countries. The practice is good in developed countries and poor in developing countries (CCA) Report Card, 2015). Over years, cervical cancer incidences and cause specific mortality rates have been falling in high income countries (Cervical Cancer Action [CCA] Report Card, 2015). This has been as a result of efficient national detection and screening programs in those countries (CCA Report Card, 2015). Early diagnosis and treatment by trained clinicians reduce the mortality rates associated

with cervical cancer. In many countries, these efforts have been complemented by public education, clinician training, improved cancer treatment and strong health information systems designed to capture data and assess the impact of programs and policies (Cervical Cancer Action (CCA) Report Card, 2015). However, the case is different in less developed countries that do not have effective national cervical cancer screening programs in place. It's approximated that less than 5% of women in developing countries have ever tested for cervical cancer compared to an average of 50 % in developed countries (Asmaa, 2013). The cervical cancer screening in Kenya is very low. It's estimated that the national coverage for cervical cancer screening for all women aged 18-69 years in Kenya is only 3.2% (MOH, 2013). The screening prevalence in Kitale Municipality is lower than the average national cervical cancer prevalence. Records at MOH indicate that only 2.23 % of women in Kitale have ever gone for cervical cancer screening (personal communication with MOH, 2015). However, the records available do not show how the women practice cervical cancer screening. WHO and MOH have guidelines that recommend how women especially those at risk of cervical cancer should practice cervical cancer screening to ensure early detection and treatment.

Cervical cancer screening is influenced by several factors either directly or inversely proportionate. Awareness, socioeconomic status, age, marital status and smoking status are some the factors that influence cervical cancer screening (Lee *et al.*, 2013; Ezechi *et al.*, 2013; Ombech *et al.*, 2012). However, factors associated with low cervical cancer screening practice among women in Kitale Municipality have not been established.

Statement of the Problem

Kitale Municipality has one of the highest cervical cancer cytology prevalence of 17.24% among women compared to the national cytology prevalence of 3.6% among the general women population according to MOH records. It also has one of the lowest cervical cancer screening prevalence (2.23%) among women according to the current MOH records of 2015. The high abnormal cytology prevalence among women versus the low uptake of cervical cancer screening in Kitale Municipality. This will form a basis for reviewing current cervical cancer awareness and screening programs and policy to increase uptake of cervical cancer and for helping individual change of behaviour among women at risk of cervical cancer in the municipality.

Practice of Cervical Cancer Screening

The practice of cervical cancer screening varies globally and within individual countries (WHO, 2012). A study conducted among Nigerian HIV+ women on their willingness and acceptability of cervical cancer risk factors found out that the practice of cervical cancer screening was very low (Ezechi *et al.*, 2013). In its findings, only 9.4% HIV+ women had ever tested for cervical cancer despite of that fact that HIV infection biologically increases women's risk of HPV infection, cervical neoplasia, and invasive cervical cancer (Palefsky, 2009). However, 79.8% of the HIV+ women accepted to take cervical cancer screening/test after being explained to about it. This shows that majority of women do not practice Pap smear testing or alternative cervical cancer screening largely because they are not aware of the test. This study was conducted only among HIV+ women who are a small segment of women population and hence cannot clearly establish the practice of cervical cancer among all women. The study also had weaknesses common with other clinical studies because it was based on women attending a HIV treatment centre in Lagos, Nigeria.

In another study carried out by Huchko *et al.* (2011) in Kisumu, Kenya, it was found that there's a low practice of cervical cancer screening among HIV+ women. In this study, 3642 women receiving HIV care at Family AIDS Care and Education Services (FACES) program-supported HIV care and treatment clinics from October 2007 to October 2010 in Kisumu were study participants. Among the 87% of women screened for cervical cancer, almost all accepted screening during the current visit (3496, 96%); the remaining women underwent screening on a first or second follow up visit. Reasons for declining screening included "needing to talk with their husband", "being on their menses", "needing to think about it", and expressing fear of the speculum exam. However, only 18 women (1%) who were approached reported having had screening in the past (Huchko *et al.*, 2011). This study was also conducted only among HIV+ women who are a small segment of women population and hence cannot clearly establish the practice of cervical cancer among women. The study also had weaknesses common with other clinical studies because it was based on women attending a HIV treatment centre in at Family AIDS Care and Education Services (FACES) program-supported HIV care and treatment clinics.

In another Cross-sectional study conducted within Kisumu Municipality, Kenya, in four health centres, it was found that few women (6%) seeking reproductive health services had ever been screened for cervical cancer (Smith *et al.*, 2013). Screened women tended to be older (37 years for the screened women versus 27 years for the unscreened), better educated (secondary or higher, have higher monthly incomes), have heard of cervical cancer and were less likely willing to be screened for cervical cancer in the future compared to the previously unscreened women. This study left out women who did not seek any reproductive services and being a health facility-based study, had weaknesses common with clinical studies.

Cervical cancer screening practice is generally low among the educated women in Kenya. In a study conducted among female primary school teachers in one of the divisions in Nairobi, it was found that only 41% had ever gone for a Pap smear test, while 59% had never had a Pap smear test (Ombech *et al.*, 2012). The female primary teachers who practice Pap smear testing have different reasons for doing so. The study found that among those who had ever gone for a Pap smear test, majority had the Pap smear test done as a preventive measure 49% while 25% did the Pap smear test because their doctor recommended, they do the test. They also observed that to 21% it was done for diagnostic purposes, while 14% heard about the test and decided to go for the test. The study also found that among participants, 47% had done the test only once, 19% twice, only 13% three times while 21% had done it more than three times. The time of performing the last test was more than 5 years ago to 26% and 3 years ago for 13% of them. Among them, 24% had their last test done 1 year ago. Others, 18%, had the last test 2 years ago while a similar number had the last test done less than a year ago. This study has brought useful insight into the awareness of cervical cancer, its risk factors and practice of cervical cancer. However, the study participants were only female primary school teachers who are not representative of all women. The study also focused on only one cervical cancer screening method i.e. Pap smear testing. The results from this study do not establish the awareness of cervical cancer, its risk factors and practice of cervical screening among all women.

Factors Associated with Cervical Cancer Screening among Women

Cervical cancer screening is influenced by various factors in both developed and developing regions. Some studies have tried to determine factors associated with low cervical cancer screening. In a study on socioeconomic disparity in cervical cancer screening among Korean women for a 12 year period, 1998-2010, it was found that higher educational level was associated with Pap smear testing (Lee *et al.,* 2013). A higher household income was also found to be associated with a higher OR in 2001, 2005, and 2010. Age was also found to be a statistically significant factor which was inversely related to cervical cancer screening during 1998–2010. Although marital status, health insurance type, and smoking status were statistically significant factors in one or two study years, their significance was either not as strong as socioeconomic status or somewhat inconsistent. Findings from this study varied from one year to another over the 12-year period of the study. As such, concrete conclusion cannot be drawn from this study. The study was also based on secondary data obtained from the 1998–2010 Korea National Health and Nutrition Examination Survey (KNHANES).

Another study conducted among female primary school teachers in Kenya explored factors associated with cervical low cancer screening (Ombech *et al.,* 2012). It was found out that awareness of cervical cancer, HPV, diet, and sexually transmitted infections are the predictor factors for the Pap smear testing. However, these findings were not significant ($p<0.05$). The age and age of the woman at the birth of the first child were the main socio demographic predictor factors for pap smear testing with a LRT of 0.03 and an increased odd of 1.2 (CI 0.7 – 2.4). However, this was not significant ($p=0.9$. The study also identified unawareness of Pap smear test (37%), high cost of the test (12%), embarrassment (10%) as other reasons why the female primary school teachers did not go for Pap smear Test. Findings from this study do not bring out factors associated with low cervical cancer screening among women because this study was conducted among female primary school teachers only. The results are not representative of all teachers as it leaves out secondary school teachers and all other women form a majority of the general women population in Kenya. There was a need to fill this gap by conducting a study to determine factors associated with low cervical cancer screening among all women.

METHODOLOGY

This was a descriptive cross-sectional study. The study population was women aged between 30-69 years old living or working in Kitale Municipality and are sexually active women. The study used Stratified simple random sampling technique. The sample size was 422 with 10% of 384 added to cater for a possible non-response rate. Structured questionnaire (Appendix III) was used to collect data. The questionnaire had both open and closed ended type of questions. Qualitative data was mainly women's knowledge of cervical cancer risk factors. Analysis was done using Statistical Package for Social Sciences (SPSS) version 20. Data was presented in form of tables and figures.

RESULTS

Practice of Cervical Cancer Screening among Women

Of the women interviewed, 76% (321) said they had heard of cervical cancer screening whereas 24 % (101) had not. Of those who had knowledge of cervical cancer screening, 63% (202) knew

of Pap smear method, 31 % (100) knew of VILI while 4% (13) knew VIA. Others (2%) had heard of screening but could not recall the method they heard of.

Concerning practice of cervical cancer screening, only 27% (114) of the women interviewed had gone for cervical cancer screening at least once while most of the women, 73% (308) had never gone for cervical cancer screening. On the frequency of cervical cancer screening among women who had gone for screening, the mean number of times the respondents had gone for screening is 1.52 with a standard deviation of 0.85. The 95% confidence limits of the mean number of cervical cancer screening times being 1.37 and 1.68. Figure 1 below summarizes these findings.

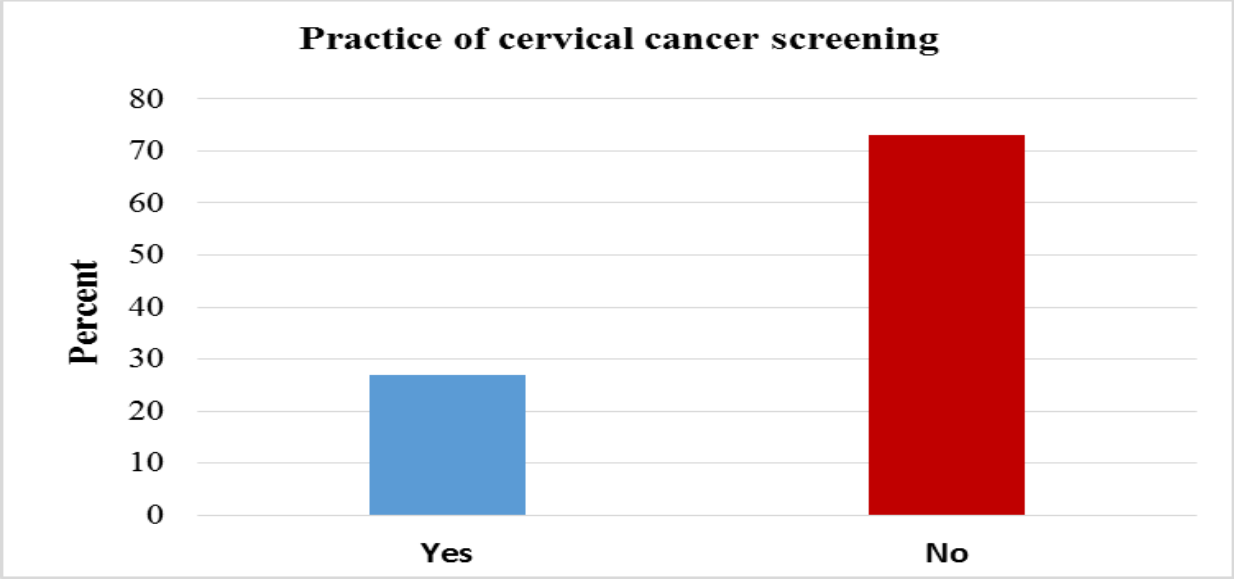

Figure 1: Practice of Cervical Cancer Screening among Women in Kitale Municipality

On when was the last time the respondents had gone for cervical cancer screening, almost half 46% (52) had been recently screened one year ago, 25% (29) had been recently screened two years ago, 20% (23) 0-6 months ago, 5% (6) had been recently screened five years ago and more than five years ago as shown by Figure 2 below.

Global Journal of Health Sciences

ISSN 2519-0210 (Online)
Vol 9, Issue 4, No.4, pp 40 - 53, 2024

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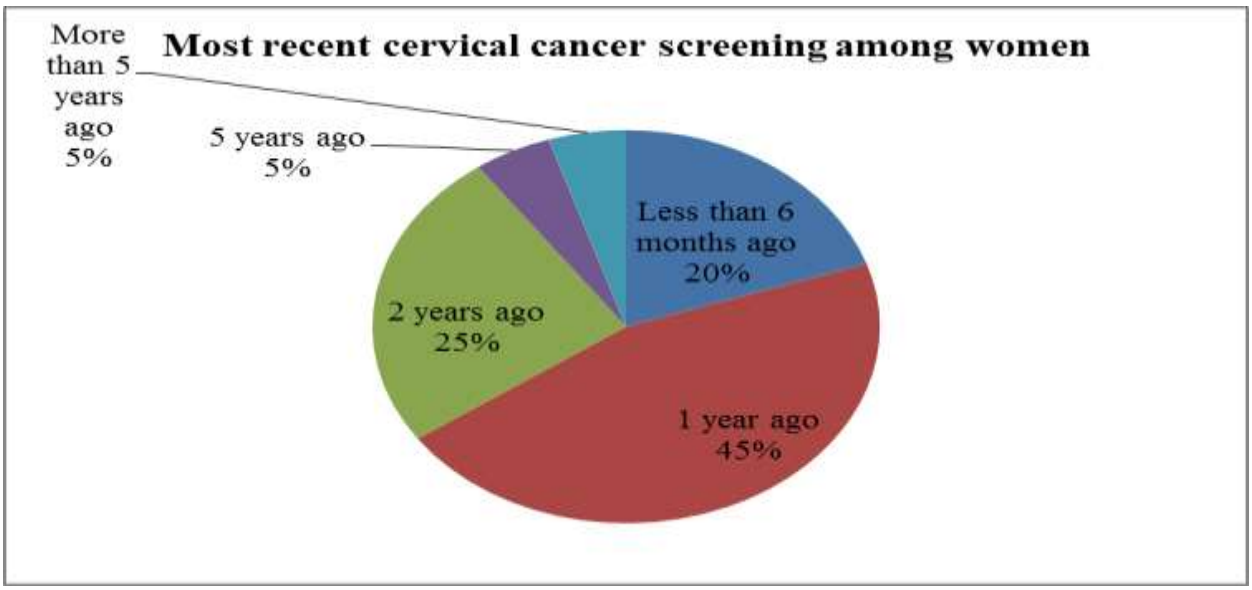

Figure 2: Most Recent Cervical Cancer Screening

Factors Associated with Low Practice of Cervical Cancer Screening

Regarding the reasons why women did not go for cervical cancer screening, 33% (139) cited absence of sickness, 18% (76) felt the screening process is embarrassing while 16% (68) said they did not know where to go for screening because they did not have time. Ten percent (42) reported that they did not go for screening because they did not know where to go for screening, 13% (38) had never heard of the test, 6%(25) said the screening test is too expensive for them, 2% (8) said they fear the outcome of the test while 1% (4) said their husbands did not support the test as shown in figure 3 below.

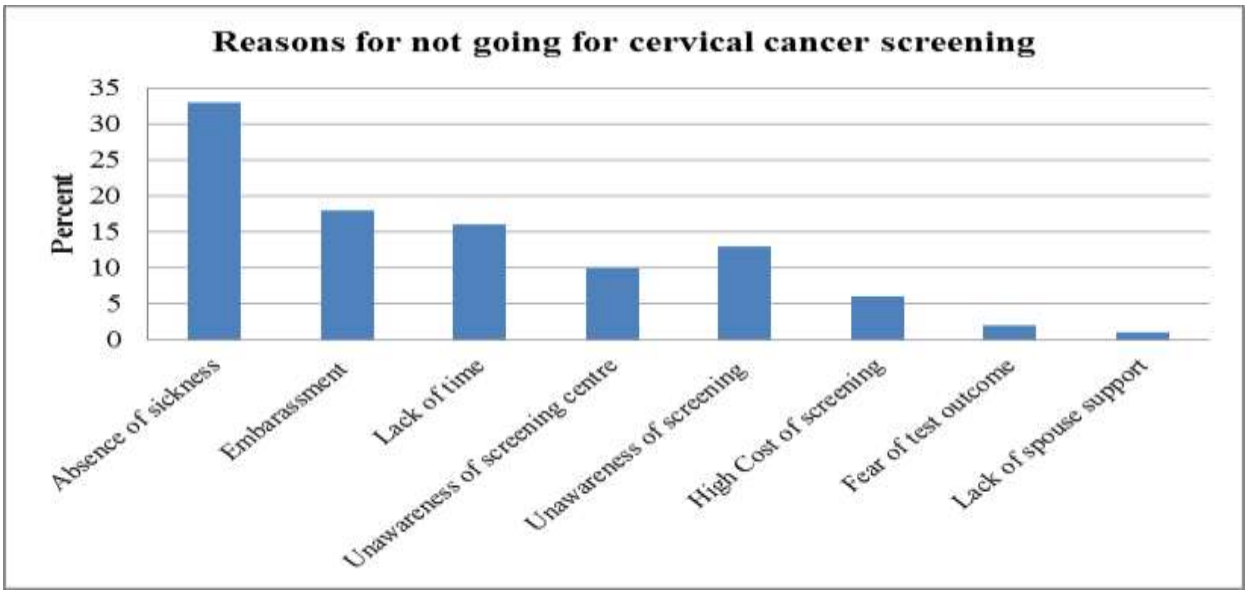

Figure 3: Reasons for Not Going for Cervical Cancer Screening

Global Journal of Health Sciences

ISSN 2519-0210 (Online)
Vol 9, Issue 4, No.4, pp 40 - 53, 2024

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Among respondents who went for cervical cancer screening, 48% (55) did it as diagnostic measure, 43% (49) as a preventive measure while the doctor's recommendation accounted for 9% (10) as shown in figure 4 below.

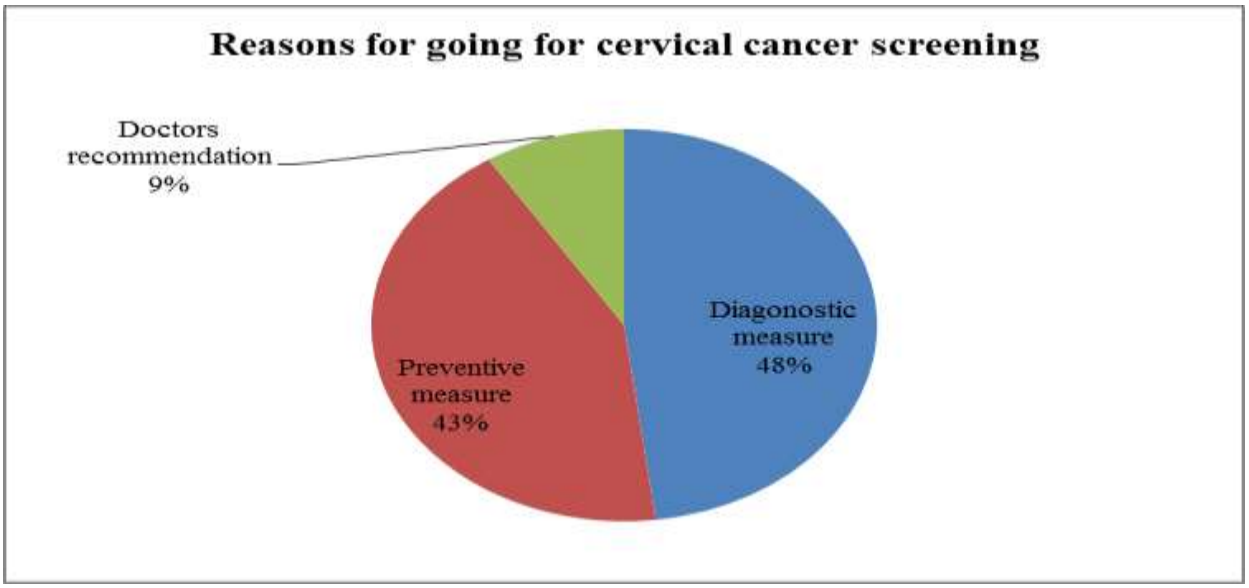

Figure 4: Reasons for Going for Cervical Cancer

Chi Square test was used to test association between awareness of cervical cancer and practice of cervical cancer screening. It was found that there was crude association between awareness of cervical cancer screening and practice with 1.08 increased odds of having cervical cancer screening if a woman knew about cervical cancer screening. This association was significant (p=0.000). Table 1 below summarizes the association between awareness and practice of cervical cancer screening.

Table 1: Association between Awareness and Practice of Cervical Cancer Screening

	Gone for screening (%)		Chi	P-value	Crude OR
Heard of screening	**No**	**Yes**			
No	24.0 (101)	0.0 (0)			
Yes	49.3 (208)	26.6 (112)	52.565*(1)	0.000	1.08

Note: * indicates significance at 5% level, () indicate degree of freedom.

Chi Square test was also used to test association between awareness of cervical cancer risk factors and practice of cervical cancer screening. It was found that there was association between cervical cancer screening and having many sexual partners (p=0.007). It was also observed that there was association between cervical cancer screening and early sexual intercourse (p=0.012). However, there was no association between awareness of the remaining risk factors (obesity, use of oral contraceptives, weakened immunity, old age, and multi-parity). Table 4.5.2 below summarizes the association between awareness of cervical cancer risk factors and practice of cervical cancer screening.

Discussion

Practice of Cervical Cancer Screening among Women

The practice of cervical cancer screening varies globally and within individual countries (Ezechi *et al*., 2013). Generally, cervical cancer screening prevalence is low in developing countries as compared to developed countries (CCA Report Card, 2015). The current study found out that only a small percentage of women practice cervical cancer screening. This concurs with study findings among HIV+ women in Nigeria which found that only 9.8% of HIV+ women had ever been screened despite an increased risk of cervical cancer due to their immune-suppressed state (Ezechi *et al*., 2013; Palefsky, 2009). It also concurs with a study conducted in Kenya among HIV+ women that found out that only 1% reported having had cervical cancer screening in the past (Huchko *et al*., 2009). This study finding also concurs with findings of a study among Female primary school teachers by Ombech *et al*. 2012 that reported that only 41% had ever had a Pap smear test done.

It has been reported that majority of women in developing countries know very little about cervical cancer screening (Ayayi & Adewole, 1998; Kidanto, 2002). However, the current study found a high (76%) level of cervical cancer screening awareness among women. This was attributed to the outreach campaigns on cervical cancer that had been done prior to the study. The current study also sought the most known cervical cancer screening method. The level of awareness of Pap smear test was the highest among women probably due to the fact it's the most discussed test in mass media. These findings concur with a study conducted among female primary teachers in Kenya that found out that most female primary 75% knew about the Pap smear test (Ombech *et al.*, 2012).

Recommendations on how frequent women should go for cervical cancer screening vary depending on available resources and health status of a woman (WHO, 2014; MOH, 2012). Most cervical cancer screening programmes recommend that women should go for screening every three years. The current study sought to find out the frequency of cervical cancer screening based on this recommendation by the MOH, Kenya. It was observed that the mean number of times women who had gone for screening was 1.52. This showed that the frequency of cervical cancer screening is not adequate as recommended by WHO, MOH and other health organisations. This study also found that most women had last gone for cervical cancer between one to two years. A few had gone for the test six months ago or more than five years ago. The peak in cervical cancer screening coincided with the cervical cancer screening campaigns that had been conducted prior to the study. However, very few women were planning to go for cervical cancer screening as recommended largely because they felt there was no need as their results were negative. This finding concurred with a study done among female primary school teachers in Kenya (Ombech *et al.*, 2012) that found that among those who had done the Pap smear test, 47% had done the test only once, 19% had done it twice, 13% had done the test three times while only 21% had done it more than three times. The effectiveness of any screening programme as a preventive measure against any disease or condition lies in the compliance with the best practices based on well researched recommendations. For this reason, the inadequate frequency of cervical cancer screening practice among women is worrying. The more frequent a woman goes for screening, the more chances of detecting lesions in their early stages. Therefore, the success of treatment and management of

cervical cancer also lies in early detection and diagnosis which is only made possible by good screening practices.

Factors Associated with Cervical Cancer Screening among Women

Cervical cancer screening is influenced by various factors in both developed and developing regions. The current study sought to find out the factors associated with low cervical cancer screening. This study found out that lack of awareness about cervical cancer as one of the main factors associated with low cervical cancer screening among women. Most women identified lack of sickness to warrant going for screening. This finding portrayed a clear lack of knowledge and understanding about the aetiology and the fact that it does not show signs and symptoms until at an advanced state of the disease. The study also found out that the 'embarrassing' screening procedure was another factor associated with low cervical cancer screening among women. This showed that the cervical cancer screening campaigns have not done enough to allay fears associated with the screening procedure among women. The finding echoes the findings of a study among female primary teachers in Thika, Kenya by Ombech *et al.* (2012) in which women identified lack of knowledge where the test is done, lack of sickness to necessitate going for the test, and embarrassment go for the test. These findings of the current study and others point out the need for enhanced health education as a means of improving the cervical cancer screening practice among women. Lyimo and Beran (2012) in a study in Tanzania also found out embarrassment and distance (more than 5km) to cervical cancer screening services are some of the reasons women do not go for cervical cancer screening.

Several factors have been associated with the practice of cervical cancer screening either directly or inversely proportionate (Lee *et al.*, 2013). This study found out that unawareness of cervical cancer screening is another factor associated with low cervical cancer screening among women. Women who did not go for cervical cancer screening cited unawareness of the screening tests and where they are done as one of the reasons they did not go for screening. The study also found a positive association between awareness of cervical cancer screening and practice of cervical cancer screening (OR 1.08, p=0.000). These findings concur with a study conducted in Tanzania that reported that awareness of cervical cancer was positively associated with screening acceptance (Lyimo and Beran, 2012). These underscored the need to increase the awareness cervical cancer among women as a means of improving the uptake of cervical cancer screening services.

Low awareness level of cervical cancer risk factors was another factor that was found to be associated with low cervical cancer screening among women. This study found that screening was more likely if women knew HPV infection (AOR 1.41), use of oral contraceptives (AOR 1.06), obesity (AOR 1.59) and early sexual intercourse (AOR 1.86), as cervical cancer risk factors. The study also found a positive association between awareness of multiple sexual partners (p=0.004) as a risk factor and screening. This finding showed that women who were aware of cervical cancer risk factors were more likely to go for cervical cancer screening than those who were not aware of them. Basically, women who were aware of cervical cancer risk factors were more likely to recognise the perceived risk of cervical and be prompted to go for cervical cancer screening. The efforts to improve uptake of cervical cancer screening services should hence also be directed at making women aware of the risks they face that are likely to increase the likelihood of them suffering from cervical cancer. These findings partly concurred with findings of a study among

Tanzanian women that found that women's knowledge of cervical cancer risk factors was also found to be a determining factor for screening attendance (Lyimo and Beran, 2012).

Another factor that was found to be associated with low cervical cancer screening among women was a low socio-economic status. Level of education and occupation were the main socio-economic factors that were found to be influencing cervical cancer screening. It was observed that there was strong association between cervical cancer screening and a higher level of education (p=0.000) implying that well educated women were more likely to go for cervical cancer screening as opposed to the less educated. This could probably be attributed to the fact that the more educated women were more informed of cervical cancer and its screening. This study also found a strong association between cervical cancer screening and occupation (p=0.000) inferring that women in better occupations were likely to go for cancer screening as opposed to those with none. These findings concur with a study on socioeconomic disparity in cervical cancer screening among Korean women that found out the association between socio-economic factors and cervical cancer screening (Lee *et al.*, 2013).

Socio-demographic factors especially age was also found to be another factor associated with low cervical cancer screening. It was also observed that there was association between cervical cancer screening and advancing age (p=0.002). This meant that as women aged, they got more informed of cervical cancer screening and were more likely to go for a screening test. However, this study findings contradicts with those of Lee *et al.* 2013 who found that age was a statistically significant factor which was inversely related to cervical cancer screening suggesting that older women were less likely to participate in screening (Lee *et al.*, 2013).

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

Awareness was influenced by demographic and socio-economic factors mainly age, occupation, and education. Findings from this study also showed that the practice of cervical cancer screening among women was poor and not adequate as recommended. A combination of cultural, demographic, and socio-economic factors seemed to play a key role in women's practice of cervical cancer screening with age, level of education, occupation and number of children being significantly associated with screening. This study also found lack of awareness of cervical cancer, unawareness of screening tests available, low socio-economic status and socio-demographic factors (mainly younger age) as factors associated with low cervical cancer screening among women.

Conclusion

The practice of cervical cancer screening among women is low and not adequate as recommended among women in Kitale Municipality, Kenya. A combination of cultural, demographic and socio-economic factors plays a key role in women's practice of cervical cancer screening with age, education, occupation and number of children standing out as major factors.

The low cervical cancer screening among women in Kitale Municipality is associated with several factors i.e. unawareness of cervical cancer & its risk factors, unawareness of the screening tests available, low socio-economic status and socio-demographic factors.

Recommendations

The current cervical screening programmes should be redesigned and be implemented with involvement of key stakeholders to enhance uptake of cervical cancer screening services.

The Ministry of Health should scale up efforts to sensitize women about cervical cancer, cervical cancer risk factors and screening as well as ensure free cervical cancer screening services are available in all health facilities.

Recommendations for Further Studies

i. The influence of culture on the practice of cervical cancer screening should be assessed.
ii. The effectiveness of different cervical cancer sensitisation campaign approaches used by different health institutions/organisations should be evaluated.

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