

RESEARCH ARTICLE

LACK OF AWARENESS AMONG CANDIDATE FEMALES HINDERS CERVICAL CANCER SCREENING; A COHORT STUDY FROM PERADENIYA AND KANDY TEACHING HOSPITALS

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Abstract

Background

Cervical cancer (CC) is the second leading type of cancer among females in Sri Lanka. Unawareness about risk factors, prevention methods, socio-cultural and economic factors hinder women from participating in screening programmes offered currently. This study intended to assess the factors associated with uptake of cervical cancer screening programmes by women, among a cohort of gynecology clinic attendees.



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Methods

A descriptive cross-sectional study was conducted on a cohort of conveniently sampled 150 women attending the outpatient gynecology clinics at the Teaching Hospitals in Kandy and Peradeniya. Knowledge, attitude and practices related to cervical cancer screening and prevention were assessed through a self-administered, structured and pre-tested questionnaire.

Results

Among the 150 women who participated, 48 % had had the Pap smear test previously, at least once. Age of the women, parity, marital status, awareness about the Pap test, overall knowledge and practices on cervical cancer screening and risk factors were significantly ($p < 0.05$) associated with Pap smear test uptake in the study group. Knowledge about cervical cancers and awareness about Pap smear test were significant predictors of screening uptake in the study cohort.

Conclusions

Low uptake of cervical cancer screening in the study group was mainly caused by lack of awareness about the disease, risk factors and preventative measures. Mass media and health care workers can play vital roles in raising awareness on cervical cancer screening and prevention among the public.

Keywords: Cervical Cancer, Screening, Awareness

Introduction

Cervical Cancers (CC) are reported to be the second leading type of cancers among females in Sri Lanka. Nearly 1800 new cervical cancer cases are diagnosed annually in Sri Lanka with nearly 600-700 being females with advanced disease, often accompanied by poor prognosis at the time of diagnosis¹. Persistent infection with Human papillomavirus (HPV) types with high oncogenic risk is known to be associated with occurrence of cervical cancer in 90% of the cases². Other known risk factors of cervical cancer are multiple sexual partners, initiating sexual activity at a very early age, multiple births, poor socio-economic status, immunosuppression and having a partner who participates in high risk sexual activities^{3,4,5}. Tobacco smoking, poor nutritional status and prolonged use of oral

contraceptive pills are also associated with residual effects on risk⁶.

A significant decline in cervical cancer incidence is attributable to widespread screening and high coverage. Survival rates of women with cervical cancers are high when diagnosed at early stages⁷. Sri Lanka has been screening women for cervical pre-cancerous changes using Papanicolaou test for over 20 years. This is currently offered in the well women clinics. The target population for this screening programme is women over 35-years of age. However, utilization of the existing screening service is low and remains only around 33.9% of the target population according to reports in 2013⁸. Women with a negative cytology result are recommended to be rescreened at 5-year time intervals. Triage testing and treatment are offered for women with positive cytology. A substantial number of

women avoid their recommended follow-up appointments leading to considerable losses to follow-up as well. Combining cytology with HPV DNA testing has emerged as a more sensitive alternative to testing with cytology alone in most developed countries⁹. However, HPV DNA testing is not available in the government sector in Sri Lanka. Only a few private sector laboratories offer HPV DNA testing facilities to women in Sri Lanka which is not affordable for many women. Recently, HPV vaccination was introduced in Sri Lanka as a long-term public health intervention in preventing cervical cancer. The vaccine is supposed to be administered to all schooling girls over 11-years of age, free of charge. The vaccine is currently available in the private sector for older women who are yet to marry, but it is also not affordable for many women. The benefits of vaccination over its substantial costs and strengthening screening have yet to be determined.

However, due to the fact that cervical cancer is categorized as a sexually transmitted disease, social stigma has been created about the screening process. Hence, lack of awareness, socio-economic and cultural factors¹⁰, poor attitude towards the disease and screening tests¹¹, prevention and risk factors can affect the screening practices and subsequently primary prevention by early detection and treatment of cervical cancer. Thus, the present study intended to assess knowledge, attitude and practices towards cervical cancer screening, risk reduction and prevention among a group of Sri Lankan women attending the outpatient gynecology clinics at two teaching hospitals in the central province of Sri Lanka, namely Teaching Hospital, Peradeniya and Teaching Hospital, Kandy. Furthermore, we investigated the factors and predictors related to increasing uptake of the cervical cancer screening service as well.

Materials and Methods

Ethical clearance was obtained from the Ethical Review Committee, Faculty of Medicine, University of Peradeniya (ERC). A descriptive cross-sectional study was conducted on a cohort of conveniently sampled 150 women attending outpatient gynecology clinics at Teaching Hospital, Kandy and Teaching Hospital, Peradeniya, on voluntary basis in parallel with a Human papillomavirus prevalence study. Females between 19 to 65 years of age were included in the study. Women diagnosed with cervical cancer previously, those mentally challenged or who had problems with verbal communication were excluded. A self-administered, structured and pretested questionnaire covering socio-demographic characteristics, knowledge and practices related to cervical cancer screening, prevention and risk factors was administered (available in Sinhala, Tamil and English languages). Knowledge and attitudes on cervical cancer, risk factors, screening and prevention were assessed. Practices related to participation in screening and vaccination programmes, use of oral contraceptives and safe sexual relationships were assessed and scored. In the questionnaire, each response was scored by giving 1 mark for each correct answer and 0 for each incorrect or “Do not know” answer and the respondents were grouped in to two major categories (High and Low) based on their performance in assessing overall knowledge and practices (level of score was considered “high” when above 50%, “low” when below 50%)^{12, 13}. The overall score for knowledge and overall score for practices were calculated and categorized as “high” or “low”. The association between scores of cervical cancer awareness and practices with different demographic variables (age, parity, education status, marital status etc.) and Pap smear uptake were assessed using chi square test. Binary logistic regression analysis was performed to determine

predictors of CC screening uptake among participants (using statistical software for social sciences (SPSS version 20.0).

Results

One hundred and fifty women aged between 19-65 years participated in the study.

Socio Demographic Characteristics of the study cohort

The mean age of the participants was 38 ± 9 years. Of the 150 women, 43.5% had education up to senior secondary level (Advanced Level). Majority of the women were married (86.2%) and unemployed (70.6%) (Table1).

Awareness about Cervical Cancer

Only about one quarter of the women (27%) had a high level of knowledge on cervical cancers and related risk factors,

whereas 73% of the women had low overall knowledge.

The knowledge on preventative measures of cervical cancer was less and only 17% of the women had high knowledge on cervical cancer prevention based on the ranking. About 80% of the women reported that they have heard about cervical cancer. Among women who had heard about cervical cancer, half of the women knew it was fatal but 82.5% did not know that it is a sexually transmitted disease. Majority (68.9%) of these women were unable to recognize it as a disease caused by a viral infection.

Awareness on risk factors

Women were less aware of the risk factors of cervical cancers. Only 39% of the women knew Human Papillomavirus as the causative agent of cervical cancer. Knowledge on other risk factors of CC associated with sexual and reproductive behavior was also low (Table 2).

Table 1: Socio demographic characteristics of the participants

Characteristics	Percentage
Age	
20-35	47.4%
36-50	46.6%
51-65	06%
Marital status	
Married	86.2%
Unmarried	11%
Divorced	1.4%
widowed	0.7%
Employment Status	
Employed	28.7%
Unemployed	70.6%
Education	
Up to Ordinary Level	44.9%
Up to Advanced Level	43.5%
University Education	11.6%
Ethnicity	
Sinhala	91.8%
Muslim	5.4%
Tamil	2.7%

Table 2: The awareness about cervical cancer risk factors

Risk Factors	Percentage of women identified the true risk factors
Multiple sexual partners	37%
Early at marriage	20%
Parity	16%
History with other sexually transmitted disease	32%
Human papillomavirus infection	38.8%
Unhealthy diet	32%
Prolonged use of oral contraceptives	38%

Awareness on screening and preventative measures

Only 66.7% of the women knew that CC was a preventable disease. Only half of the women (50.3%) knew the Pap smear test as a cervical cancer screening method. Only 20% of the women knew HPV vaccination as a preventative measure. Among women less than 35-years of age, 45% did not know the exact age to initiate cervical cancer screening (Table 3). Ninety percent of the women were unaware of any other testing methods except Pap test for cervical cancer prevention.

Attitudes

Only 67% of the women accepted cervical cancer as a preventable disease. Among

those who had undergone screening before, 65% of the women claimed that the procedure was painless and did not cause any discomfort. Only about 20 % had felt it as a painful procedure. Among women who had not under gone screening ever, 48% did not know that there is such a test. 20% believed that there is no need of such testing for cervical cancer for them, as they are not at risk of such a disease. Less than 4% reported that they have restrictions from their family for such testing.

Sources of Information

The majority of women (63%) had gained knowledge about cervical cancer through mass media. Only 20% of the women had gained knowledge through health care workers (consultant gynecologists, general practitioner or nurse). Further, 71% of the

Table 3: Awareness on cervical cancer preventive measures

Preventative measure	Percentage of awareness on each preventative measures
Human papillomavirus vaccine	20%
Pap smear testing	50.3%
Use of condoms	14%
Delaying age of initiation of sexual intercourse	13%

women preferred consultant gynecologists and media to deliver information regarding cervical cancer screening and prevention to the public.

Practices of women related to risk factors and preventative measures of cervical cancer

Among women who qualify for cytology based cervical cancer screening according to the guidelines in Sri Lanka (over 35-years-old and having initiated sexual activities), only 48% of the women had had the test previously at least once. The Pap test uptake decreased with increasing age of the women. There was a significant relationship ($p<0.05$) between awareness of Pap smear and getting a pap test done.

Even though 20% of the women claimed that they had heard about HPV vaccination as a cervical cancer prevention method, only 1.4 % of the women had got the vaccination (Table 4).

Factors and Predictors of Cervical Cancer screening uptake among women of the study cohort

Several factors have been associated with Pap smear uptake among the study cohort. Age of women, parity, marital status, awareness of Pap test, overall knowledge on cervical cancer and risk factors were significantly ($p<0.05$) related with Pap smear uptake among the study cohort in univariate analysis with the chi square test.

Table 4: Practices related to cervical cancer screening and prevention among participating women

Practices related to cervical cancer screening and prevention	Percentage of women
Human papillomavirus vaccine	1.4 %
Pap smear testing	48 %
Having multiple sexual partners	2.2 %
Use of oral contraceptives for more than 2 years	15.8 %
Delaying age of initiation of sexual intercourse	13%

Table 5: Effect of factors associated with Pap smear uptake (N=150)

Factors	P value	Odds ratio and 95% CI
Age	0.063	1.061 (0.997-1.128)
Heard about Pap test	<0.05	6.791 (2.386-19.328)
Knowledge on cervical cancer and risk factors	<0.05	0.291 (0.109-0.778)
Marital status	0.126	0.165 (0.016-1.655)
Parity	0.933	1.021 (0.624-1.671)

Significance level $p<0.05$

Education level was not significantly related with Pap smear uptake ($p>0.05$). Table 5 shows the results of the logistic regression analysis for the prediction of Pap smear uptake. Females who had heard about Pap test had a significantly higher probability of getting a Pap smear done. Having higher overall knowledge using the questionnaire used was also associated with more Pap smears.

Discussion

Incidence and mortality of cervical cancer has reduced substantially in high income countries in the past 40 years largely due to effective screening. However, this strategy has failed to achieve similar results in developing countries due to issues related to logistics and resource limitations. The crude cervical cancer screening coverage in low income countries is on average 44.7% compared to 93.6% in high income countries¹⁴. The main reasons for failure to implement successful screening programmes in low income countries is related to limited access to information, lack of knowledge on CC, requirement for sustained health care infrastructure for screening and other social, cultural and religious taboos that hinder women participating in CC prevention.

Even though Sri Lanka has a cytology based CC screening programme, coverage of screening remains low. Therefore, this study investigated potential factors and predictors related to low screening coverage among women in screening age using a cohort of gynecology clinic attendees. The information generated in this study is important in designing appropriate interventions and expanding cervical cancer screening and prevention programmes towards sustainable development.

Cervical cancer screening uptake was higher among women who participated in

this study (48%) than those reported among similar studies in India (5%)¹⁷ and China (15%)¹⁸. As we detected low screening coverage among females over 35 years in our study cohort, we recommend considering a population based study to determine the country's cervical cancer screening coverage status among eligible women as a follow-up study. Despite of having a good educational background, the majority of participants had a low level of overall knowledge on cervical cancer screening and prevention. Even though 80% of the women had heard about cervical cancer, overall knowledge on CC and risk factors were low (high level of knowledge only in 27%). Knowledge on preventive measures (Pap smear and vaccination, 50% and 20% respectively) was also low. Over 80% of the women could not identify it as a sexually transmitted diseases or disease caused by a viral infection. These results were consistent with findings of studies conducted among rural females in Anuradhapura and Rathnapura districts in Sri Lanka^{15,16}. However, the awareness on cervical cancer (44%), risk factors (11%) and prevention (Pap smear and vaccination was only 12% and 2.8% respectively) was better than values reported in a similar study conducted in India¹⁷. A significant proportion of women (80%) had self-perceived risk of CC. Among women who had undergone screening, the majority (80%) had not thought of it as a painful procedure. So, fear of the procedure is highly unlikely to be a reason for low uptake among females. The major source of information was through mass media (Television and Newspapers). Health care workers have caused less impact in raising awareness about CC screening and prevention among the general public.

The information is particularly significant as acceptance of vaccination is directly related to HPV knowledge and none of the previous studies conducted in Sri Lanka had evaluated awareness and practices

related to HPV vaccination among females in Sri Lanka. Only 1.4% women had got the HPV vaccination and it is similar to the rates reported in Cambodia¹⁹, a country without an HPV vaccination policy. Even though HPV vaccination is available in the private sector in Sri Lanka, it has not caused much impact at national level. This might be due to cost and lack of awareness among the public.

Socio-demographic factors like age, parity and marital status was related with Pap smear uptake among the participants and the results were consistent with other studies conducted in Sri Lanka^{15,16}. Similar factors were found to be responsible for low uptake in to screening programs in other developing countries in the world as well^{20,21,22}. Screening reduced with increasing age and having more children. This can be explained by increasing family responsibilities on women forming barriers in taking prevailing screening services. Unmarried women are less likely to get screened due to social and cultural reasons and low perceived risk. In our study, a significant relationship between education level and Pap smear uptake was not shown which is consistent with the study by Hong and his colleagues¹⁸ in China but in contrast to the finding of studies showing education level determining the level of awareness about CC screening and prevention in Sri Lanka¹⁶. Hence, having heard about cervical cancers or having a good education background do not indicate that they are well aware of cervical cancers. However, awareness of Pap test, overall knowledge on cervical cancer, risk factors and screening were significantly related with Pap smear uptake among the study cohort. This indicates that our school education system has not contributed much in raising awareness about CC screening and prevention among the public. So, we recommend considerations for inclusion of knowledge related to CC screening and prevention into school education curriculum. The main reason for not

attending cancer screening was the unawareness of the screening tests. Only few felt it as unnecessary for them to get tested. Social, cultural and religious pressures were not as intense as expected to prevent women participating in screening programs. Even though overall awareness of cervical cancer, risk factors and prevention was low in the female study cohort, most of them had low risk sexual and reproductive behaviors towards cervical cancer occurrence. This might be due to the cultural and religious influences of the society.

Increasing awareness is an effective measure of increasing the uptake into cervical cancer screening programs in Sri Lanka. It is important to target educating all women on cervical cancer screening and prevention irrespective of their education status as high level of education had not helped much in increasing awareness. Finally, low uptake of cervical cancer screening is mainly caused by lack of awareness about the disease, risk factors and preventative measures rather than by poor attitude, social, cultural and religious taboos. Mass media and Health care workers can play vital roles in raising awareness on cervical cancer screening and prevention among the public.

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