

A Questionnaire-Based Survey Assessing Awareness Regarding Pap Smear Screening, Cancer Cervix and Human Papillomavirus Infection

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Abstract

Aim: The aim of the present study was to assess the awareness and knowledge about cervical cancer, Pap smear testing and its use and HPV among women living in urban women in Bihar region.

Methods: A questionnaire-based survey, using face-to-face interviews, was carried out at Department of obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar, India for one year. Women aged 16 years and above were approached in different public sites thus increasing the chance of covering women from different social groups. A total of 1000 women agreed to voluntarily participate in the study. The women were interviewed by two trained researchers who had extensive knowledge of cervical cancer, screening and HPV.

Results: Of the interviewed women, 51% reported never being married, 63% had a university level of education and 52% were employed. The majority of the women were of low income (70%). Of the 1000 participating women, 92% had heard of cervical cancer. Among these women, 64% felt moderately/extremely concerned about cervical cancer. Only 20% of women reported knowing the causes of cervical cancer. The most frequently cited causes of cervical cancer were abortion and sexually transmitted infection (including HPV) respectively in 30% and 28%. The less frequently cited causes of cervical cancer were early pregnancy and high parity (2%). When asked about the possibility of developing cervical cancer one day, 40% of women believed they had no risk. Participating women acquired information about cervical cancer mostly from either foreign media or medical workers was 28% and 27% respectively.

Conclusion: Our study highlights the lack of knowledge about cervical cancer in women. There is a real necessity to inform women about cervical cancer screening. Education campaigns involving the local media may be a good approach to inform women.

Keywords: Cervical cancer, Pap smear test, HPV, Knowledge, urban women

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Introduction

Most cervical cancer is caused by a virus called human papilloma virus (HPV). Human got HPV by having sexual contact with someone who is infected with HPV. There are many types of the HPV virus. Not all types of HPV cause cervical cancer. Some of them cause genital warts, but other types may not cause any symptoms. [1] Most adults have been infected with HPV at some time. An infection may go away on its own. But sometimes it can cause genital warts or lead to cervical cancer. That's why it's important for women to have regular Pap tests. A Pap test can find changes in cervical cells before they turn into cancer. If you treat these cell changes, you may prevent cervical cancer. [2] Cervical

cancer, in women, is the second most common cancer worldwide, next only to breast cancer. In India, cervical cancer is the most common woman related cancer, followed by breast cancer. Every year cervical cancer is diagnosed in about 500,000 women globally and is responsible for more than 280,000 deaths annually. [3]

The highest incidence rate of cervical cancer was observed in Guinea with nearly 6.5% of women developing cervical cancer before the age of 75 years. It affects women < 45 years more than the other major cancers. [4] It is also the leading cause of cancer deaths in Eastern and Central Africa. Most of these deaths can be prevented through universal

access to comprehensive cervical cancer prevention and control programs which can potentially reach all girls with HPV vaccination and all women who are at risk with screening and treatment for pre-cancer. [4,5] Persistent infection with around 15 high-risk HPV types is the major risk factor for cervical cancer with HPV-16 and HPV-18 infections accounting for about 70% of the total cases. Multiple sexual partners, younger age at first sexual intercourse, early marriage, poor dietary habit, immune suppression, and cigarette smoking also serve as risk factors to the HPV persistent infection and progression to cancer. [5,6]

A study on global cancer transitions according to the human development index reveals that cervical cancer is estimated to be more common than both breast and liver cancer. [7] The study also suggests that rapid socio-economic transition in many countries might reduce infection-related cancers. However, this might be replaced by an increasing number of new cases that are more associated with reproductive, dietary, and hormonal factors. [7] The burden of cervical cancer is reasonably low in the developed countries of the world. [8] However, the situation is quite the reverse in developing countries. While the incidence is decreasing in the former, it is on the increase in the latter. [6,7,9] In most parts of Sub-Saharan Africa, South America, the Caribbean, and Southern Asia, cervical cancer is the leading cause of cancer death and premature death among women. Despite the high prevalence of cervical cancer, many studies have shown that women's knowledge about HPV, cervical cancer and cervical screening is very low. [10-13] Moreover, the uptake and success of cervical cancer screening is determined by women's knowledge and awareness of cervical cancer. [13]

The aim of the present study was to assess the awareness and knowledge about cervical cancer, Pap smear testing and its use and HPV among women living in urban women in Bihar region.

Materials and Methods

A questionnaire-based survey, using face-to-face interviews, was carried out at Department of obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar, India for one year. Women aged 16 years and above were approached in different public sites thus increasing the chance of covering women from different social groups. A total of 1000 women agreed to voluntarily participate in the study. The women were interviewed by two trained researchers who had extensive knowledge of cervical cancer, screening and HPV. The interviews were conducted in Hindi, the national language of the country. All participants gave written consent and confidentiality was ensured through the use of code numbers rather than participants' names.

Questionnaire Data and Process

A questionnaire based on a literature review and a previously published questionnaire¹⁴ was designed in English. The questionnaire was translated into Hindi and then translated back into English for quality assurance. The items on the questionnaire were divided into four sections: (i) demographic characteristics of the participants, and awareness, knowledge, and information sources of (ii) cervical cancer, (iii) Pap smear testing and (iv) HPV. Information on age, marital status, occupation, number of children, level of education and monthly income was collected.

During the interview, if the participant had never heard about cervical cancer, she was asked if she had ever heard about Pap smear testing. If the answer was again no, she was asked if she had ever heard about Human Papillomavirus/HPV. If this answer was also no, the questionnaire was finished for this participant, to eliminate answers due to guessing. Two knowledge scores were created: one for the entire population of the study and one to measure the knowledge level about HPV for women who had heard about HPV. The participants received 1 point for correct answers and 0 for either wrong answers or when the answer was "I don't know". Questions regarding specific knowledge about cervical cancer, Pap smear testing and HPV were considered to create the overall knowledge score. The knowledge questions were grouped and the mean score was computed to determine the overall knowledge of participants. The participants who scored average or above were considered as "knowledgeable" and the others as "not knowledgeable". For participants who answered questions about HPV (on the basis that they had indicated that they had heard of HPV), three levels of knowledge were defined: a low level of knowledge (0–2 correct answers), a fair level of knowledge (3–4 correct answers) and an excellent level of knowledge (5–6 correct answers). At the end of the questionnaire, an information session about the disease was given to the participant when they answered 'yes' to the last question: "Do you think you need information about this disease?"

Data Analysis

Statistical analysis was performed using Epi info6 software. Logistic regression analysis was used to identify the effect of demographic characteristics on the level of knowledge about cervical cancer, Pap smear testing and HPV. Odds ratio and 95% confidence intervals were used to identify the strength of association. Associations were considered statistically significant at $p < 0.05$.

Results

Table 1: Characteristics of the study participants

Characteristics	N
Age	
<30	600 (60)
30-39	230 (23)
40-49	120 (12)
≥50	50 (5)
Marital status	
Never married	510 (51)
Ever married	490 (49)
Occupation	
Student	400 (40)
Unemployed/housewife/retired	80 (8)
Employed	520 (52)
Education	
No school	20 (2)
Primary school	30 (3)
Secondary school	320 (32)
University	630 (63)

Of the interviewed women, 51% reported never being married, 63% had a university level of education and 52% were employed.

Table 2: Participants' awareness and knowledge of cervical cancer, and information source about cervical cancer, Pap smear testing and HPV

Questions	N
Have you ever heard of cervical cancer?	
No	80 (8)
Yes	920 (92)
Are you concerned about having/developing cervical cancer?	
No	210 (21)
A little	150 (15)
Moderately	240 (24)
Extremely	400 (40)
Do you know the risk factors/causes of cervical cancer?	
No	800 (80)
Yes	200 (20)
Risk factors for cervical cancer cited by the respondents?	
Abortion	300 (30)
Sexually transmitted infection	280 (28)
Smoke	220 (22)
Multiple partners	200 (20)
Insert products/fingers into the vagina	180 (18)
Sex at an early age	150 (15)
Lack of hygiene	100 (10)
Alcohol/Drug	80 (8)
Excessive sex	40 (4)
Heredity	30 (3)
High parity	20 (2)
Early pregnancy	20 (2)
Self-perceived chance of developing cervical cancer?	
Non existent	400 (40)
Very low	200 (20)

low	120 (12)
moderate	140 (14)
High	140 (14)
Information source about cervical cancer?	
Foreign media	280 (28)
Local media	270 (27)
Medical staff	260 (26)
Family/friends	190 (19)
Information source about Pap smear test?	
Medical staff	520 (52)
Foreign media	230 (23)
Local media	120 (12)
Family/friends	130 (13)
Information source about HPV?	
Foreign media	650 (65)
Medical staff	350 (35)
Local media	0
Family/friends	0

Of the 1000 participating women, 92% had heard of cervical cancer. Among these women, 64% felt moderately/extremely concerned about cervical cancer. Only 20% of women reported knowing the causes of cervical cancer. The most frequently cited causes of cervical cancer were abortion and sexually transmitted infection (including HPV) respectively in 30% and 28%. The less frequently cited causes of

cervical cancer were early pregnancy and high parity (2%). When asked about the possibility of developing cervical cancer one day, 40% of women believed they had no risk. Participating women acquired information about cervical cancer mostly from either foreign media or medical workers was 28% and 27% respectively.

Table 3: Knowledge and attitudes toward the Pap smear test

Questions	N
Have you ever heard about Pap smear test?	
No	720 (72)
Yes	280 (28)
We use pap smear test	
To prevent cervical cancer	840 (84)
To prevent infection in genital tract of women	270 (27)
To prevent sexual transmitted infection in general	50 (5)
Undergone a pap smear test	
No	350 (35)
Yes	650 (65)
How many times?	
At one time	480 (48)
2-3 times	420 (42)
>3times	100 (10)
Motivation to undergone a pap smear test	
On demand of doctor	700 (70)
By yourself	120 (12)
Both	180 (18)
Feel pain during Pap smear test?	
Yes	350 (35)
No	650 (65)
Feel embarrassed?	
Yes	600 (60)
No	400 (40)
Normal frequency for doing pap smear test	
Every year	780 (78)

Every 2-3years	220 (22)
Reasons for not making pap smear test:	
negligence	500 (50)
I don't have the financial resources	120 (12)
I think it is not important	140 (14)
I am afraid to discover a grave disease	140 (14)
I am afraid of pain	100 (10)

Only 28% of the study participants had heard about cervical cancer prevention through screening. Among these, 65% had a Pap smear previously. The principal motivation to undergo Pap smear testing as cited by these women was "the demand of their doctor" (70%). Some women reported being

embarrassed about the test (60%) and had experienced pain during screening (35%). The main reason given by women who had never been screened for cervical cancer but had heard about it was neglect (50%).

Table 4: Participants' knowledge of HPV

Questions	Participant's correct answer
HPV can cause urinary infection?	200 (20%)
HPV is the principal risk factor of cervical cancer?	650 (65%)
HPV can cause genital warts?	500 (50%)
HPV infect only women?	400 (40%)
HPV is a sexually transmitted infection?	700 (70%)
HPV can cause genital warts?	500 (50%)
Condom gives total protection against HPV?	500 (50%)

The majority of respondents reported that HPV is the principal risk factor of cervical cancer (65%) and was acquired sexually (70%).

Discussion

Cervical cancer is the fourth most common cancer among women worldwide, with an estimated 528,000 new cases and 266,000 deaths in 2012. [15] Human papillomavirus (HPV) is thought to be the most common sexually transmitted infection worldwide and more than 75% of sexually active adults have had HPV infection in their lifetime. [16] The correlation between the presence of this virus and the development of precancerous lesions that may lead to cervical cancer is clearly established. Cervical cancer is one of the few preventable human cancers, its prevention is based on the early diagnosis of precancerous lesions whose treatment generally makes the development of cancer almost impossible. [17]

The most common cause of cervical cancer is Human Papillomavirus (HPV) infection, which is the most common sexually transmitted infection worldwide with women having multiple sex partners or who have sex with men who had many other partners. [19] Though there are 140 types of HPV virus, it is found that only 40 of them are sexually transmitted, and among them only two high risks HPV types 16 and 18 are reported to be responsible for more than 80% of cervical cancer in India. [18,19] Of the interviewed women, 51% reported never being married, 63% had a university level of education and 52% were employed. Of the 1000

participating women, 92% had heard of cervical cancer. Among these women, 64% felt moderately/extremely concerned about cervical cancer. Only 20% of women reported knowing the causes of cervical cancer. The most frequently cited causes of cervical cancer were abortion and sexually transmitted infection (including HPV) respectively in 30% and 28%. The less frequently cited causes of cervical cancer were early pregnancy and high parity (2%). When asked about the possibility of developing cervical cancer one day, 40% of women believed they had no risk. Participating women acquired information about cervical cancer mostly from either foreign media or medical workers was 28% and 27% respectively. Only 28% of the study participants had heard about cervical cancer prevention through screening. The risk factors that were most frequently cited included abortion, sexually transmitted infection, smoking, multiple sexual partners, inserting products/fingers into the vagina, sex at an early age and lack of hygiene. In African societies, incorrect risk factors for cervical cancer such as abortion, lack of hygiene and the insertion of products/fingers into the vagina are commonly cited by women. [20,21] This suggests that accurate information about cervical cancer and its causes needs to be available to women through mass campaigns that also dispel false traditional beliefs about cervical cancer. The other risk factors commonly cited by women were related to sexual comportment and were identified in the literature as risk factors for cervical cancer. [22]

Among these, 65% had a Pap smear previously. The principal motivation to undergo Pap smear testing as cited by these women was “the demand of their doctor” (70%). Some women reported being embarrassed about the test (60%) and had experienced pain during screening (35%). The main reason given by women who had never been screened for cervical cancer but had heard about it was neglect (50%). The majority of respondents reported that HPV is the principal risk factor of cervical cancer (65%) and was acquired sexually (70%). In the present study, the major barrier cited by women in use for cervical cancer screening was negligence; fear of discovering a serious disease was also cited by the interviewed women. These barriers to screening were mentioned in previous studies.²³ Negligence may suggest the need for an aggressive information campaign about this disease. However, fear reflects a poor understanding of the natural history of cervical cancer and of the principle behind cervical cancer screening. Moreover, this suggests that the acceptability of cervical screening could be high if women were simply informed.

Conclusion

Our study highlights the lack of knowledge about cervical cancer in women. There is a real necessity to inform women about cervical cancer screening. Education campaigns involving the local media may be a good approach to inform women.

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