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Research Article

Barriers to Cervical Cancer Screening in India: A Knowledge Attitude Gap Analysis of Nurses in a Tertiary Hospital in Northern India

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A B S T R A C T

Background: Cervical cancer is potentially one of the most preventable and treatable cancers. Despite the known efficacy of cervical screening, a significant number of women in developing countries like India do not avail themselves of the procedure due to lack of awareness and sociocultural misconceptions.

Objectives: This study was conducted to elicit information on the Knowledge, Attitude and Practice (KAP) regarding cervical screening (Pap test) and to assess barriers to acceptance of the Pap test among nurses in a tertiary care hospital in Northern India. Awareness and acceptance for vaccination for Human Papilloma Virus (HPV) was also assessed.

Materials and Methods: A cross-sectional, descriptive study was conducted with semi-structured, self-administered questionnaire among female nurses. The study subjects were interviewed for KAP regarding risk factors for cancer cervix, Pap test and HPV vaccination for protection against carcinoma cervix. Descriptive statistics were used to characterize the study participants. Association between socio-demographic factors and awareness and practices were assessed using the chi square test. p-value <0.05 was considered significant.

Results: A large no of nurses had good knowledge about the risk factors and the importance of PAP test screening (95.9%). Many of the study subjects had a favourable attitude towards Pap test 92 (93.9%) and vaccination 82 (88.2%), but despite being in a centre with direct access to screening 68 (69.4%) of the study subjects never had a Pap test themselves and the most common reason cited was not finding the need to screen as they felt it was not applicable to them (45.6 %) not finding the need to screen as they felt it was not applicable to them. Acceptance for HPV vaccination was more 58 (59.2%) than Paps test 30 (31.4%).

Conclusion: In spite of good knowledge and attitudes towards prevention of cancer cervix, Pap test and HPV vaccination, practice remained low among the nurses. Acceptance of HPV vaccination was more than Pap test reflecting the lower acceptance of intimately invasive procedures.

Keywords: Delhi, HPV Vaccine, PAP Test

Introduction

Every year 570,000 women are diagnosed with cervical cancer globally leading to 280,000 deaths per year. It is the fourth most frequent cancer in women representing 6.6% of all female cancers. Approximately 90% of deaths from cervical cancer occurred in low-and middle-income countries.[1]

Although the effectiveness of the Pap smear in reducing cervical cancer incidence and mortality has already been demonstrated in many developed countries,[2,3] there is a wide disparity in rates of screening for cervical cancer in developing countries with the average screening coverage rate in developed countries at 63% compared to 19% in developing countries.[2]

One quarter of the worldwide burden of cervical cancer occurs in India alone. It accounts for 17% of all cancer deaths among women aged between 30 and 69 years. Estimates indicate that 1 in 53 Indian women will develop cervical cancer during their lifetime compared with 1 in 100 women in more developed regions of the world. This is due to lack of rigorous screening which leads to cervical cancer presenting at an advanced stage.[5]

The preventive strategies against cervical cancer include primary prevention in the form of Human Papilloma Virus (HPV) vaccination and secondary prevention in the form of Papanicolau screening (commonly known as Paps test) and visual inspection by acetic acid and Lugols Iodine (VIA-VILI screening).[6] Screening by Paps smear was introduced in the US in 1960 and has been shown to be a very effective method of screening. The incidence of cervical cancer has decreased significantly in the west due to the implementation of a rigorous screening program.[7]

Recognizing the magnitude of the problem, the Government of India launched The National Programme for Prevention of Diabetes, Cardiovascular Diseases, Cancer and Stroke (NPCDCS) in 2010 in which cervical screening is a very important component. Many organizations like The ISCCP (Indian Society of Cervical Cancer Prevention) are very actively involved in spreading awareness to increase the uptake of screening. Despite this, the uptake of screening remains very poor. The reasons are largely illiteracy, unawareness of the screening programmes and unavailability of screening facilities.[8] However, apart from these tangible factors, attitudes regarding screening also play a major role. Cultural beliefs, myths, social pressure, embarrassment and time constraints also play an important role as a barrier in uptake of screening.[9,10]

Nurses and physicians are the people most intimately involved in patient health. Their beliefs and attitudes have the potential of having a huge impact on the uptake of cervical screening. They are a role model for women and it stands to reason that their own practices will largely dictate the practices of the women they come in contact with. It is essential that our health care professionals are completely aware of the advances and the interventions that can be utilized especially in an under resourced set-up.[11]

There are very limited studies that assess the KAP of Paps screening and HPV vaccination among health care providers.[11]

Thus, this study was conducted in a group of nurses employed in a in a tertiary care hospital where they had direct access to Paps test, thus removing other logistical variables like travel, time, leave from work, availability of screening etc.

It is an attempt to better understand barriers to the uptake of cervical screening and identify that perhaps it is not only the logistical issues but also the sociocultural issues that are a major deterrent in the success of cervical screening in our country. It is possible that understanding the impact of attitudes could be a key factor in increasing uptake of cervical cancer screening and helping to reduce mortality due to this preventable cancer.

Material and Methods

A cross sectional descriptive study was conducted in a tertiary hospital of Delhi between September to November 2016. It is a multispecialty 980 bedded hospital which primarily caters to a population of about 18 lacs-largely from Northern part of Delhi, though its services are also utilized by patients from rural areas, towns from neighbouring states. The hospital also caters to the medical and health needs of a number of referred patients from various dispensaries, colony hospitals and nearby public hospitals managed by state administration and many charitable and private institutions.

Inclusion Criteria

All the female health workers/ nurses employed in the hospital for at least a year.

- Women aged 21 to 60 years
- Willing to participate in the study after informed written consent

Exclusion Criteria

- <21 years or >60 years
- Not working in the hospital
- Not willing to participate in the study
- Diagnosed cases of any kind of malignancy
- Family history of malignancy of uterus, cervix breast or colon.

The total number of nurses employed in the hospital was ascertained from matron office and found to be 323 including the sister in charges.

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Nurses working in the clinical departments were randomly selected for the study on proportionate basis.

A structured questionnaire consisting of 21 questions related to demographic features, knowledge and attitudes towards cervical screening and HPV vaccination with their personal practices was developed for data collection.

The questionnaire was in English and the questions were short and clear with close ended responses. The content validity of the questionnaire was confirmed through extensive literature review and the expert opinions of doctors specialized in gynaecology, public health (community medicine) and medical education. The first 10 questions were related to demographic features like age, education, religion and occupation, marital/ relationship status, no of children etc. The next 6 questions were to assess the knowledge about general facts related to cervical cancer like availability of screening, risk factors and screening recommendations.

There were 5 questions about personal screening practices on whether it had been done and if not, then what were the reasons cited. The next 5 questions were about HPV vaccination beliefs; whether it had been administered to self or others and what were the reasons for not accepting it.

The last 1-2 questions were related to other screening attitudes e.g. mammography and medical disorders and whether the respondents felt that the questionnaire was of any significance.

The questionnaire was distributed to 112 nurses meeting the inclusion criteria working as nursing staff in the hospital. Out of these, 102 respondents were willing to participate. The questionnaire was given personally by 2 post-graduate doctors working in the Department of Obstetrics and Gynaecology using an individualized approach on a one to one basis. They were available to answer any queries raised by the participants based on their participation to find the necessary information.

A written consent was taken and each respondent was assured the questionnaire was completely confidential. No personal details like name, address, phone number or email address were entered.

Each respondent received information about the objectives and potential benefits of the study in a non-judgemental manner. They were further assured that their participation was completely voluntary and they had the right to withdraw from the study at any time.

Every respondent was given an opportunity to ask further questions and an email id was given for answering any further queries related to cervical screening.

Statistical Analysis

The data was compiled, entered in Microsoft Excel 2010 and analysed using the Statistical Package for Social Services (SPSS) version 17.0. Descriptive statistics were used to characterize the study participants. Association between socio-demographic factors, awareness and practices were assessed using the chi square test. A p-value < 0.05 wa conosdered significant.

Ethical Consideration

The study participants were explained about the objectives and purpose of the study. Informed written consent was taken from each participant prior to data collection. Privacy and confidentiality of each participant was assured. The study received ethical approval from the Institutional ethics committee.

Result

Table 1.Socio-demographic profile of study participants

Variables	Nurses N (%)
Total	102
Age	
<=30 years	24 (23.5)
31-40 years	40(39.2)
41-60 years	38(37.3)
Education status	
12th pass	22 (21.6)
Graduate	74 (72.5)
Post graduate	6 (5.9)
Marital status	
Married	90 (88.2)
Unmarried	12 (11.8)
Cohabitation or sexually active	88 (86.3)
Number of Children	N=90
0	16 (17.8)
1	10 (11.1)
2	58 (64.5)
3	4 (4.4)
4	2 (2.2)
Age of sexual debut	
15-20 years	4 (3.9)
21-25 years	48 (47.1)
26-30 years	32 (31.5)
> 30 years	6 (5.9)
Not yet	12 (11.8)
	12 (11.8)

*p-value <0.05.

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As shown in table 1, Most respondents were between 31-40 years of age (39.2%), while 41-60 years comprised 37.3%. 23.5% respondents were less than 30 years. Though all respondents belonged to well-educated class, it was observed that, 72.5% were graduates, 21.6% had cleared high school (12th std) and 5.9% of respondents were postgraduates. 88.2% respondents were married and 82.2% had children indicating an active sexual life.

As shown in table 2, in our study, 94.1% of respondents were aware that cervical cancer is the most common cancer of women in India and 90.2% of nurses were aware that cervical cancer can be prevented .88.9% respondents were aware that screening for cervical cancer is available.

Table 2.Awareness about cervical cancer screening among study participants

Variables	Nurses N (%)
Total	102
Awareness about cervical cancer being most common (Yes)	96 (94.1)
Awareness about availability of cancer screening (Yes)	90 (88.9)
Recommended age of cervical cancer screening	
<30 years	22 (21.6)
>30 years	62 (60.8)
After becoming sexually active	12 (11.8)
Don't Know	6 (5.9)
Screening interval	
Every year	70 (68.5)
Every 2 years	10 (9.8)
Every 3 years	14 (13.7)
Don't Know	8 (7.9)
Awareness about upper age limit of screening	
40 years	10 (9.8)
60 years	22 (21.6)
All life	40 (39.2)
Till it is negative three times	8 (7.8)
Till it is negative once	4 (3.8)
Don't know	18 (17.8)
Risk factors for cervical cancer	
Smoking	4 (3.9)
Many sexual partners	52 (51)
Human Papilloma Virus (HPV)	50 (49.5)
No regular check ups	30 (29.4)
Sexually Transmitted Diseases	50 (49.5)
Awareness about cervical cancer being preventable (Yes)	92 (90.2)
Awareness about HPV vaccination (Yes)	66 (64.7)
Awareness about recommended age of giving HPV vaccine (Yes)	64 (62.7)

*p-value<0.05.

Most of the respondents (60.8%) felt that screening should begin after the age of 30 years while 21.6% thought that the appropriate age was <30 years. 11.8% respondents believed that screening for cervical cancer should begin after sexual activity and 5.9% respondents were not sure. This shows that though general awareness regarding cervical screening was present it was not adequate.

Most respondents (68.5%) believed that screening for cervical cancer should be done every year. 13.7% participants were aware that cervical screening is recommended every 3rd year, while 9.8% believed that the appropriate screening interval was every two years. 39.2% respondents were of the opinion that screening should be done all life. 21.6% believed it appropriate to screen till the age of 60 years while 17.8% were not sure. 7.8% respondents believed that cervical screening should be done till it is negative 3 times. This also reflects inadequate awareness regarding screening recommendations.

When the awareness regarding risk factors for cervical cancer was analysed, it was found that 51% believed multiple sexual partners and 49.5 % thought sexually transmitted diseases were important. 49.5% considered HPV an important risk factor. 3.9 % respondents thought that smoking was an important risk factor for developing cervical cancer. The current study demonstrated that knowledge regarding risk factors was good.

Our study also demonstrated that 64.7% respondents were aware of the possibility of HPV vaccination and 62.7% were aware of the appropriate age for this vaccination (Table 2).

Table 3 demonstrates that only 31.4% of the study participants had undergone cervical screening. Thus, the percentage of nurses screened was very low despite awareness about cervical cancer being preventable being 90.2%.

Screening within 3 years indicate recent practice. 75% respondents who had undergone screening, underwent this within last 3 years. This shows that though not a very large number of respondents had undergone screening, 80% of the ones who did were up-to-date with their screening. At the same time, the study also demonstrated that 62.5% had done the cervical screening at recommended intervals. This indicates that the respondents who did go for screening were aware of the importance of screening and probably did not just have a one-time opportunistic screening.

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Table 3.Practices related to prevention of cervical cancer among study participants

Variables	N (%)
Total	102
Ever been screened for cervical cancer (Yes)	32 (31.4)
Cervical cancer screening for themselves in last 3 year	24 (75) (n=32)
Cervical cancer screening at recommended intervals (Yes)	20 (62.5) (n=32)
Reasons for not getting cervical screening done	(n=70)
Didn't feel the need to	18 (25.7)
Unaware of it	4 (5.7)
Unavailability of good doctor	6 (8.6)
Find it embarrassing	15 (21.4)
Afraid it would be painful	9 (12.9)
Afraid of the results	5 (7.1)
Uterus removed	13 (18.6)
Advise to any other family member about cancer screening (Yes)	36 (35.3)
Consider HPV vaccination for yourself (Yes)	46 (45.1)
Reasons for not considering yourself for HPV vaccine	(n=56)
Inadequate information	20 (35.7)
Inappropriate age for me	14 (25)
Not convinced about its efficacy	2 (3.6)
Cost factor	20 (35.7)
Willing to consider HPV vaccine for family members (Yes)	52 (51.0)
Recommended HPV to others	24 (23.5)
Feel important to be screened for cervical cancer (Yes)	90 (88.2)
Ever been screened for following diseases: (Yes)	
Breast Cancer	36 (35.3)
Diabetes Mellitus	78 (76.5)
Hypertension	70 (68.5)

*p-value<0.05.

On examining the causes cited for not having undergone screening, 25.7% respondents felt that there was no need for them to get screened and that screening was not applicable for them. 5.7% participants were unaware of the screening and 18.6% respondents reported that they did not get themselves screened because they had already undergone hysterectomy. 21.4% participants admitted to finding it embarrassing to get the screening done while 8.6% also felt they would be unable to find a good doctor. Only 12.9% felt it would be painful and 7.1% thought they would be afraid of the results. This probably reflects their familiarity with the treatment options as they were themselves health personnel.

Further, the study observed that 88.2% respondents felt it was important to get screened for cervical cancer. Despite this only 35.3% respondents would recommend getting the screening done to their family members.

The current study demonstrated that 54.9% were unwilling to consider HPV vaccination for themselves with 45.1% respondents willing to consider it. This is in stark contrast to the apparent reluctance to undergo secondary screening i.e. Paps smear (only 31.4% respondents had been screened). The most common reason cited for not considering HPV vaccination was cost factor (35.7%) and possessing inadequate information (35.7%). 25% respondents felt that they were at the inappropriate age while only 3.6% of the respondents were not convinced about its efficacy. These findings suggest that health workers are very receptive to the idea of HPV vaccination and with better awareness they may help play a crucial role in increasing its uptake.

Our study also demonstrated that 51% respondents would be willing to consider vaccinating their family members and 23.5% had recommended the vaccination to somebody including peers, friends and patients (Table 3).

Table 4.Association of cervical cancer screening with socio-demographic factors

Variables	Cervical cancer screening done	Cervical cancer screening not done	p-value
Total	32	70	
Age			
<=30 years	0 (0)	20 (28.6)	Ref
31-40 years	8 (25)	26 (37.1)	0.02*
41-60 years	24 (75)	24 (34.3)	<0.001*
Education status			
12th pass	4 (12.5)	18 (25.7)	Ref
Graduate	24 (75)	50 (71.4)	0.21
Post graduate	4 (12.5)	2 (2.9)	0.04*
Marital status			
Married	32 (100)	58 (82.9)	0.007*
Unmarried	0	12 (17.1)	
Religion			
Hindu	22 (68.8)	44 (62.9)	0.58
Other	10 (31.2)	26 (37.1)	

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This table 4, shows that as the age increased, the screening practices also increased. The number of women screened in the ages 31-40 years and 41-60 years was significantly more than those <30 years (p-value 0.02 and <0.001 respectively). Likewise, with better education the screening practices also increased with the percentage of postgraduates screened was statistically more than graduates (p-value 0.04). Married women were more likely to be screened than unmarried women (p-value 0.007).

Discussion

Cancer cervix is a preventable disease and one of the most important tools is increasing awareness among the public regarding its screening possibilities and modalities available. To enable this, it is imperative that healthcare providers and women involved in the intimate care of women like physicians and nurses have adequate knowledge on the different methods of prevention and screening.

Sociodemographic Profile

Most respondents were between 31-40 years of age (40.2%), reflecting an active reproductive period which was similar to a study by Kosambiya RJ et al.[12] They were all well-educated and it was observed that as education level increased, screening practices also increased (p-value significant). This observation is also supported by a meta-analysis by Gianfranco Daminai et al. that clearly demonstrated that screening practices for both cervical and breast cancer was more among better educated women.[13] 88.2% respondents were married. It is observed that only married women had undergone screening which was statistically significant. This may be explained by the fact that cervical cancer is perceived to be disease for the sexually active and therefore unmarried women do not come forward for screening due to the social stigma associated. This was supported by other studies as well.[12,14-17] 82.2% of the respondents had children which is similar to Kosambiya RJ et al.[12]

Knowledge and Awareness

94.1% of respondents in the present study were aware that cervical cancer is the most common cancer of women in India, 90.2% were aware it can be prevented and 88.9% were aware that screening for cervical cancer is available. This reflects good awareness and most studies conducted among nurses also show that they have good knowledge regarding the magnitude of the problem[12, 18-20] and availability of screening.[21-24]

The age to recommend screening varied with majority (60.8%) feeling that screening should begin after the age of 30 year while 21.6 % thought that the appropriate age was <30 years. Studies by Ananthnarayan VV et al.[25] and Arulogun et al.[26] also indicate that nurses have varied views on when screening should be done. Most of the respondents (68.5%) believed that cervical cancer screening should be done every year which is similar to those reported by Goyal A et al.[16] The latest guidelines by FOGSI recommends screening after the age of 25 years every 3 years with no additional benefit of screening earlier than that or more frequently than that.[27] This shows that though general awareness regarding cervical screening was present, it was not adequate.

The most common risk factor identified as a risk factor for cervical cancer was multiple sexual partners (51%) and sexually transmitted diseases including HPV (49.5%). Similar findings were reported by Goyal A et al., Dhodapkar SB et al., Ali SF et al., Wamai RG et al.[16,19,28,29] Some studies showed less knowledge of risk factors.[24,30] As most nurses were aware that the risk factors are related to sexual activity, it may create a bias towards screening practices.

64.7% of our respondents were aware of HPV vaccination and 62.7% of its appropriate age recommendation. This was higher than some earlier studies indicating good awareness.[12,30,31]

Practices

In this study, only 31.4% of the study participants had undergone cervical screening. Thus, the percent of nurses screened was very low despite awareness being 90.2%. This was higher than what was reported by Tran NT et al.[32] and Addah AO et al.[21]

The most common reason cited (25%) was not feeling a need for them to get screened. It can be postulated that a large number of respondents felt that since they did not have any of the risk factors for cervical screening, they may have felt that screening is not relevant for them.18.8 % participants admitted to finding it embarrassing to get the screening done. This is similar to causes mentioned by other authors.[6,12,14,21-23] Goyal A et al.[16] documents that 70% nurses never underwent pap smear; most common reasons being not thought about it (28.6%) or no time for it (17.8%).

The present study observed that while 88.2% respondents felt it was important to get screened for cervical cancer, only 35.3% respondents would recommend getting the screening done to their family members which was similar to Goyal A et al.[16] This attitude may reflect one of the major barriers in the uptake of screening. Awareness must be generated that screening must be done even in the absence of any risk factors as per national recommendations and FOGSI GCPR guidelines.

HPV Vaccination Practices

As compared to pap smear uptake (31.4%), more respondents (45.1%) would be willing to consider HPV vaccination for themselves. The most common reason cited for not considering HPV vaccination was cost (35.7%) and

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possessing inadequate information (35.7%). These findings suggest that health workers are more receptive to the idea of HPV vaccination which is significant considering WHO and FOGSI GCPR recommends primary HPV vaccination as a feasible acceptable preventive strategy though it is definitely not a replacement for secondary screening. 51% respondents would be willing to consider vaccinating their family members and 23.5% had recommended the vaccination to somebody including peers, friends and patients. This was similar to other studies.[34] On the other hand, Wamai R et al.[30] reported that willingness to recommend the HPV vaccine was moderate, with 69.7% intentionally initiating discussions with patients about the subject. This reflects that with adequate awareness and motivation, the uptake for HPV vaccination may be possible.

Limitations

This study was undertaken in an urban tertiary care hospital, thus the nurses interviewed may have been better informed than their peers in a rural setup.

All departments were sampled but it may have been possible that those nurses working in the department of obstetrics and gynaecology were better informed and had different screening practices than those working in the other departments. Future studies which include only nurses working in the Department of Obstetrics and Gynaecology may provide more accurate information.

The sample size was small and larger studies should be undertaken for better evaluation.

The responses were based on recall and not validated by the respondent's medical records. This may lead to recall bias.

Conclusion

Our study concludes that though the knowledge regarding the need for cervical screening is present, its actual uptake is not adequate. Only 31.4% nurses had been screened despite awareness being 92%. Spreading awareness alone is insufficient without addressing the sociocultural concerns of women in our country.

As this study was descriptive, qualitative studies should be undertaken which can further explore the understanding of the health workers and the very low uptake of cervical screening, despite having a good knowledge and direct access to screening facilities.

This study clearly demonstrates the need for addressing the misconceptions and incorrect practices of health workers. The health workers should be targeted for screening for cervical cancer as they are essential for the successful implementation of our well envisioned health care programmes. As society looks up to these women for support and guidance, it is imperative that they take up their part as effective role models for all women in society.

Conflict of Interest: None

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