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Original Research Article

Knowledge, attitudes, and practices among healthcare providers on cervical cancer, human papilloma virus and its vaccine at ESI PGIMSR, MGM Hospital Parel Mumbai, India

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ABSTRACT

Background: Cervical cancer is the second most common cause of cancer in females Worldwide and nearly 85% of the cervical cancer cases are diagnosed in developing countries. The health care providers can play an important role in promoting cervical cancer screening and knowledge about HPV vaccination. So this study was conducted to assess the knowledge, attitude and practices regarding cervical cancer screening and HPV vaccination and to analyze the factors influencing the knowledge about HPV vaccination, among nursing staff.

Methods: A cross-sectional study was conducted among 143 nurses and 75 nursing students (total 218) at ESIPGIMSR MGM Hospital, Parel Mumbai. Data was collected using Questionnaire, designed based on the study objectives.

Results: 73 (33.49%) of the nurses did received education on cervical cancer and HPV in the past. Most of the nurses, 184 (84.4%) considered that they were at no risk of cervical cancer. 143 (65.60%) nurses knew that Pap smear can be done to screen patients. Out of 141 married nurses, only 39 (27.28%) regularly had a gynaecological examination and 105 (74.47%) had never done Pap smear. In addition, 119 (54.59%) participants did not know at what age Pap smear should commence. Only 73 (33.49%) nurses knew about the route of transmission of HPV and 57 (26.15%) knew about HPV vaccine. 215 (98.62%) nurses did not receive an HPV vaccine.

Conclusions: The nurses and nursing students did not have prior adequate education on cervical cancer, HPV, and vaccine and the desired level of knowledge on risk factors and signs of cervical cancer and prevention of the disease.

Keywords: Cervical cancer screening, HPV vaccine, Nursing staff, Pap smear

INTRODUCTION

Cervical cancer is the second most common cause of cancer in females worldwide. Out of which, nearly 85% of the cervical cancer cases are diagnosed in developing countries.¹ In India, Cervical cancer is one of the most common causes of cancer among women. In 2010 approximately 74,000 new cases of cervical cancer were diagnosed in India. Out of these, 38% Women were in the reproductive age group (15-49 years), indicates involvement of relatively younger population. In 1980,

the mortality rate was 37 per 1000 new cases and in 2010, the mortality rate was 32 per 1000 new cases, so there was hardly any improvement in two decades.² In majority of cases, high mortality rates are because of late diagnosis of the disease or diagnosis at an advanced stage. According to a study nearly 70% of all cervical cancer cases in India are being diagnosed at an advanced stage (stage III or IV).³

Patients can be easily screened for cervical cancer by Pap smear or cytology. According to various reports, in

developed countries 68-84% of women being screened by Pap smear, but in India this proportion is 2.6-5% only.^{4,5} This is one of the main reason that in India patients are being diagnosed at advanced stages. The main risk factor for development of Cervical cancer is infection with human papilloma virus (HPV) types (HPV 16 and HPV 18), which can be detected by cytology.¹

Many clinical trials and systematic reviews all over the World, have shown the efficacy of vaccines 90-99%, against HPV types (HPV 16 and 18), in preventing cervical intraepithelial neoplasia (CIN). The safety of these vaccines is also sufficiently established by these studies.⁶⁻⁸

In spite of knowledge about the association of HPV with cervical cancer and efficacy of HPV based screening and vaccination as an effective modes for primary prevention of carcinoma cervix, the attitude towards cervical cancer screening and HPV vaccines is very poor in many developing countries, including India.⁹ Various studies had concluded that lack of appropriate knowledge, negative attitude towards HPV vaccination and screening is one of the most important factor for poor acceptance of these services.¹⁰ Studies have also documented that the intention to refer patients for screening and HPV vaccination are dependent heavily on the knowledge and perceptions of the Health care providers.¹¹

The health care providers can play an important role in promoting cervical cancer screening and knowledge about HPV vaccination. Lack of knowledge about cervical cancer among healthcare workers is a prime barrier for cervical cancer prevention.

Appropriate knowledge, positive attitude and high acceptance of these interventions among health care provider are very important for screening and HPV vaccination.

So, this study was conducted to assess the knowledge, attitude and practices regarding cervical cancer screening and HPV vaccination and to analyze the factors influencing the knowledge about HPV vaccination, among nursing staff.

METHODS

A cross-sectional, interview- based survey was conducted in ESI PGIMS MGM Hospital, Parel in Mumbai, among nursing students (>18 years) and nurses working in the above-mentioned hospital who gave consent to be a part of study. An attempt was made to include all nursing students and staff nurses, hence no sampling was done. Nurses who were on long leave, or who declined to participate were excluded.

After getting approval from the institutional ethical committee, the purpose and nature of the study was

explained to the subjects and written informed consent was obtained from all the subjects.

Out of 150 nursing staff 143 and out of 80 nursing students 75 participated in the study (total 218).

Data was collected using Questionnaire, designed based on the study objectives, taking help from the previous literature and studies available on the topic. The questionnaire was divided into 2 main parts, first dealing with the socio-demographic profile of the subjects (eg. age, education, obstetric history etc.) and second consisted of the questions regarding the knowledge, screening, risk factors, symptoms and signs of cervical cancer, and awareness about HPV vaccine and practices of nurses.

Statistical analysis

Data was analysed by Epi info 7 and descriptive statistics - frequencies and percentage were calculated.

RESULTS

Of the 230 (150 nurses + 80 student nurses) at the institute 218 (94.78%) participated in the study.

All the participants were females and 75 (34.40%) of them were aged between 19-24 years, 94 (43.12%) between 25-39 years and 49 (22.48%) were ≥ 40 years. Moreover, 10 (4.6%) participants did high school, 65 (29.81%) did 12th, 106 (48.62%) did associate degree (nursing) and 37 (16.97%) did B.Sc. nursing.

Besides, 80 (36.69%) nurses had work experience of <5 years and 71 (32.57%) had experience of 6-15 years. Furthermore, 141 (64.68%) participants were married, 77 (35.32%) had never been pregnant, 19 (8.71%) had one child, 117 (53.67%) gave live birth to two children and 5 (2.29%) had 3 or >children.

73 (33.49%) of the nurses reported that they received education on cervical cancer and HPV in the past. Most of the nurses, i.e. 184(84.4%) considered that they were at no risk of cervical cancer. Out of married nurses 20 (14.18%) were not using any contraception (Table 1).

Furthermore, 175 (80.28%) of the nurses knew that cervical cancer is globally the second most frequent cancer in women. The most frequent four risk factors of cervical cancer described by the nurses were cigarette smoking 83 (38.07%), unprotected sex 117 (53.67%), multiparity 84 (38.53%) and poor hygiene 149 (68.35%) and the most frequent two symptoms of cervical cancer mentioned were post menopausal bleeding 103 (47.25%) and foul smelling vaginal discharge 187 (85.78%). The most common responses to the question, "What can be done to prevent cervical cancer?" were Pap smear test 143 (65.60%), education 193 (88.53%), and decreasing the number of deliveries 103 (47.25%). In addition, 119

(54.59%) participants did not know at what age Pap smear tests should commence, while 15 (6.88%) asserted that it should be performed in women who are sexually active for last three years. 174 (79.82%) nurses knew that cervical biopsy can be done to detect CaCx and only 24 (11.01%) were aware about visual inspection after acetic acid as screening method.

Table 1: Socio-demographic features of participants.

Variables	n	%
Age		
19-24	75	34.40
25-29	25	11.47
30-34	32	14.68
35-39	37	16.97
≥40	49	22.48
Educational level		
High school	10	4.6
12th	65	29.81
Associate degree (nursing)	106	48.62
B.Sc. nursing	37	16.97
Work experience		
<1 year	30	13.76
1-5 year	50	22.93
6-10 year	25	11.47
11-15 year	46	21.10
>15 year	67	30.73
Marital status		
Unmarried	77	35.32
Married	141	64.68
No. of pregnancies		
0	77	35.32
1	19	8.71
2	117	53.67
≥3	5	2.29
Status of education on subject		
No	145	66.51
Yes	73	33.49
Consider themselves in high risk group		
No	184	84.40
Yes	34	15.60
Contraceptive use*		
Natural	7	4.96
Pills	15	10.63
Injections	3	2.13
Barrier	26	18.43
IUCD	45	31.91
Permanent	25	17.73
None	20	14.18

*Married participants only

The most commonly reported risk factors for HPV were unprotected sex 143 (65.60%), multiple sexual partners 106 (48.62%) and being sexually active from an early age 93 (42.66%). Only 73 (33.49%) nurses knew about the route of transmission of HPV and 57 (26.15%) knew about HPV vaccine (Table 2).

Table 2: Knowledge of participants about cervical cancer (Ca Cx), HPV and its Vaccine.

Knowledge about Ca Cx, HPV and its Vaccine	n	%
CaCx second most common cause of cancer in females		
No	43	19.72
Yes	175	80.28
Risk factors for CaCx*		
Cigarette smoking	83	38.07
Multiple partners	67	30.73
Early age at coitus	63	28.90
Unprotected sex	117	53.67
Multi parity	84	38.53
Poor hygiene	149	68.35
HPV infection	73	33.49
Symptoms of CaCx*		
Asymptomatic	39	17.89
Post coital bleeding	82	37.61
Post menopausal bleeding	103	47.25
Intermenstrual bleeding	84	38.53
Foul smelling vaginal discharge	187	85.78
What can be done for prevention*		
Pap smear test	143	65.60
Pap can detect precancerous lesions	85	38.99
Decrease no. Of pregnancy	103	47.25
HPV vaccine	29	13.30
Safe sex	134	61.47
Barrier contraceptives	84	38.53
Education	193	88.53
Monogamy	69	31.65
Prevent early age at pregnancy	96	44.04
HPV risk factors		
Early sex	93	42.66
Early age at birth	67	30.73
Cigarette smoking	74	33.94
Polygamy	106	48.62
Unprotected sex	143	65.60
Know route of HPV transmission		
Yes	73	33.49
No	145	66.51
What age screening should commence for CaCx		
Did not know		
Women ≥30 year	119	54.59
Women ≥21 year who are sexually active for last 3 year	84	38.53
	15	6.88
Diagnostic modalities other than pap*		
VIA**	24	11.01
Cervical biopsy	174	79.82
Colposcopy	54	24.77
Know about HPV vaccine		
Yes	57	26.15
No	161	73.85

*Participants had more than one answer so total percentage may be more than 100, **Visual inspection after Acetic acid

Out of 141 married staff nurses, only 39 (27.28%) regularly had a gynaecological examination and 105 (74.47%) had never done pap smear. 2 (1.42%), 5 (3.50%), 16 (11.34%), 13 (9.22%) participants had a Pap smear test, annually and regularly, every 3-5 years, when they had any complaints and when a doctor advised respectively. When the reasons for not having a Pap smear were evaluated, 77 (35.32%) stated that they were sexually inactive and among 141 married participants who never did pap, the common responses were having inadequate knowledge 33 (31.43%), not feeling at risk 25 (23.8%) being shy about it 19 (18.1%), no reason for a pap smear 17 (16.19%) and lack of symptoms 11 (10.48%) each. The reasons why they are not screening patients were, this is a doctor's job 181 (83.03%), no indication 24 (11.01%) and lack of vaginal speculum 13 (5.96%). Also, 215 (98.62%) nurses reported that they did not receive an HPV vaccine (Table 3).

Table 3: Practices and attitude of nursing staff about Cervical Cancer and HPV vaccine.

Practices on CaCx and HPV	n	%
Had regular gynaecological examination *		
Yes	39	27.28
No	102	71.32
Having Pap smear test done*		
Once a year	2	1.42
Every 3-5 year	5	3.50
When complaint	16	11.34
When Doctor advised	13	9.22
Never done	105	74.47
Reason for not getting Pap smear done on self		
No reason	17	16.19
Not feeling at risk	25	23.80
Being shy to have Pap smear	19	18.10
Lack of symptoms	11	10.48
Having inadequate knowledge	33	31.43
Responses for not screening patients		
No indication	24	11.01
Lack of vaginal speculum	13	5.96
It's doctor's job	181	83.03
HPV vaccine received		
Yes	3	1.38
No	215	98.62

*Only married participants

DISCUSSION

Cervical cancer is the second most common cause of cancer in females worldwide. Out of which, nearly 85% of the cervical cancer cases are diagnosed in developing countries.¹ It has a very high mortality rate when not diagnosed in the early phase.³ Deaths due to cervical cancer, which are widespread in the community, can be reduced by increasing awareness among women. Knowledge of cervical cancer risk and education are very important in the diagnosis and treatment of the disease. In this respect, healthcare personnel, nurses in particular,

have a burden of responsibility. This study was conducted to determine nurses' knowledge on this subject and status of nurses working and providing care to women at a hospital.

In present study majority of nurses (80.28%) were aware that cervical cancer is among the most common cause of cancer in females but majority of the nurses (66.51%) was found to have no prior education on cervical cancer, HPV or the vaccine. Knowledge of risk factors, signs and prevention methods of cervical cancer plays an important role in taking necessary precautions and avoiding behaviour deemed to be risky for cervical cancer.

Many participants (65.60%) knew that pap smear can detect cervical cancer but only 38.99% participants were aware that it can detect precancerous lesions, which resembles with the two previous studies.^{12,13} Only 33.49% staff listed HPV as a risk factor despite many of them has listed unprotected sex as a risk factor. Many studies conducted in India had shown the association of HPV 16/18 with cervical cancer.^{14,15}

Although knowledge is precursor of behaviour but attitude play an important role in formulating behaviour.¹⁶

In the present study, although the nurses considered Pap smear test as one of the most important practices in prevention of cervical cancer, the rate of having a Pap smear test was low. This suggested that the role of Pap smear test was underrated. In this study, a majority of the nurses (71.32%) was found not to have regular gynaecological examinations and more than half of the nurses (74.47%) have not done Pap smear screening previously. It is consistent with the studies which have indicated 74% in nurses and 86.8% in doctors, 86.7% in nurses did not go for pap smear.^{17,18} A study conducted among female doctors and nurses found out that only 13.9% of them had regular pap smear done.¹⁹ It is obvious that the number of women having Pap smear tests is very low, even among health care personnel.

Many authors have also suggested that HPV vaccine can reduce health and economic impact by reducing CaCx incidences.^{14,20} But in present study 26.57% of participants knew about HPV vaccine and because of inadequate knowledge only 1.38% have received vaccine. One study reported that, 69.5% of the medical school students knew that HPV vaccine prevented approximately 70.0% of cervical cancers; however, only 13.9% of the students were found to receive at least one HPV vaccine.²¹

The nurses' level of knowledge on the subject is a significant parameter when considering education of a society. A study reported that acceptance of the HPV vaccine in a society is affected by positive health policies motivating the use of the vaccine and they emphasised the role played by healthcare personnel in training

programmes on HPV.²² The findings of the present study are comparable with the literature and have established insufficient knowledge of the nurses on HPV and its vaccine.

The current study has its limitations since its results cannot be generalised as it was conducted in a single hospital and the results of the study are limited to the period when data was collected.

In the light of the findings of the study, the nurses' level of knowledge on CaCx, its risk factors, signs and prevention methods, Pap smear, and HPV and its vaccine should be increased, since healthcare personnel, in addition to the therapeutic services they provide, are responsible for providing preventive healthcare services and education and guidance for society.

CONCLUSION

The majority of the nurses and nursing students had no prior adequate education on cervical cancer, HPV, and vaccine and had inadequate knowledge and insufficient practical training on Pap smears. They did not have the desired level of knowledge on risk factors and signs of cervical cancer and prevention of the disease.

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