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Original Research Article

A cross-sectional survey on knowledge attitude practice about screening and vaccination for cervical cancer among female health care providers in Puducherry

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Abstract

Background: India is accountable for one-fourth of the global cervical cancer burden. Cervical cancer prevention and control are dependent on public awareness, screening protocols, and preventive measures. Even in the most educated women belonging to healthcare sectors, there is less awareness about the screening options for cancer cervix and a lack of knowledge about the HPV vaccine.
Objective: To assess the knowledge attitude practice about screening and vaccination for cervical cancer among female health care providers employed in tertiary care hospitals of Puducherry.
Methodology: A cross-sectional study was conducted for three months among 238 female healthcare providers in selected medical colleges of Puducherry. A multi-stage sampling technique was followed. A self-administered questionnaire incorporated into Google forms was used for data collection and data analysis was done using SPSS version 16. Ethical clearance and written informed consent were obtained.
Results: Among 238 participants, 204 (85.7%) answered 15-45 years and 103 (43.3%) as the age group recommended for receiving HPV vaccination and screening for cervical cancer respectively. Nearly half of the respondents, 110 (46.2%) felt the HPV vaccine was expensive. The majority, 197 (82.8%) and 198 (83.2%) had never ever undergone PAP smear screening and vaccinated against HPV respectively.
Conclusion: The healthcare providers were aware of screening and vaccination for cervical cancer but the same has not been reflected in their practice.

Keywords: Screening, Vaccination, Cervical cancer, Female healthcare providers.

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1. Introduction

India is accountable for one-fourth of the global cervical cancer burden.[1-3] Cervical cancer is caused by a persistent infection with one of the high-risk (oncogenic) HPV strains.[4,5] Unlike malignancies occurring in other sites of the body, cervical cancer, and its precursor lesions could be detected early, and is curable in the early stages of the disease. Cervical cancer screening is critical since most women do not notice symptoms until the illness has progressed.[6] Despite the fact that screening procedures have been in place for more than five decades and population-based screening being performed under National Programme for Non-Communicable Diseases (NP-NCD), the cervical cancer burden in India has not decreased as projected.[7] As a result, reinforcing with another preventive strategy such as immunization is now recommended. In India, bivalent and quadrivalent HPV vaccinations are approved for usage.[8] While the HPV vaccine has been in use for more than a decade in India and despite WHO recommendations, the HPV vaccine is not currently included in India's national immunization schedule; however, the HPV vaccine has been available in the private sector since 2008. In addition, states such as Delhi and Punjab have introduced the HPV vaccine in their state immunization schedule from the year 2016.[9-12]

Even in the most educated women belonging to healthcare sectors, there is less awareness about the screening options for cancer cervix and a lack of knowledge about HPV vaccine dosage, schedule, and cost. Also, poor practice has been noticed regarding cervical cancer screening and HPV vaccination for themselves.[13] With this background, the

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present study aimed to assess the knowledge attitude practice about screening and vaccination for cervical cancer and to explore the factors influencing cervical cancer screening and vaccination among female healthcare providers in Puducherry.

2. Methodology

A facility-based, cross-sectional study was conducted for a period of three months from June to August 2023 among female healthcare providers employed as doctors and nurses in selected medical colleges of Puducherry. The sample size was estimated using the formulan $= \frac{z_{(1-\alpha/2)^2}pq}{d^2}$[14] where $Z_{(1-\alpha/2)}$= 1.96 at 95% of confidence interval; p = 92.2% of the femalehealthcare professionals exhibited very good knowledge about screening and vaccination for cervical cancer;[15] absolute precision = 5% and considering a non-response rate of 5% and design effect = 2, the minimum required sample size was calculated to be 238. A multi-stage sampling technique was followed. In stage one, all the medical colleges in Puducherry were stratified into government and private institutions. In stage two, one medical college from each stratum was chosen by simple random sampling and in stage three, 119 eligible female health care providers from each selected institute were included to achieve the sample size. A pre-tested, semi-structured, face-validated, self-administered questionnaire incorporated into Google forms was used for data collection and data analysis was done using SPSS version 16.Descriptive data was represented as mean ± SD for numeric variables, percentages and proportions for categorical variables. Clearance for the study was obtained from the Institutional Research Committee and Institutional Ethical Committee before commencement of the study (Refn. MGMCRI/2023/IRC/55/04/IHEC/21). Besides, written informed consent was taken from each participant and confidentiality of the information collected was ensured.

3. Results

The socio-demographic profile of the healthcare providers included in the study has been provided in **Table 1**. The mean ± SD age of the healthcare providers was found to be 32.91 ± 7.49 years. The mean± SD of the healthcare providers' work experience was determined to be 6.06 ± 6.95 months.

Table 1: Socio-demographic profile of the healthcare providers

Variables	Total	Government Medical college	Private Medical college
	N = 238 (100%)	n = 119 (100%)	n = 119 (100%)
Age (in years)			
< 30 years	58 (24.0)	31 (26.0)	27 (22.6)
≥ 30 years	180 (76.0)	88 (74.0)	92(77.4)
Profession			
Medicine	165 (69.3)	80 (67.3)	85(71.4)
Nursing	73 (30.6)	39 (32.7)	34 (28.6)
Educational status			
Undergraduate degree	103 (43.2)	48 (40.3)	55(46.2)
Postgraduate degree	135 (56.7)	71(59.7)	64 (53.8)
Marital status			
Married	164 (68.9)	77 (64.7)	87 (73.1)
Single	72 (30.3)	42 (35.3)	30 (25.2)
Widow /Divorced/ Separated	2 (0.8)	0 (0.0)	2 (1.7)
Number of children			
No children	110 (46.2)	52(43.7)	58 (48.7)
1child	69 (29.0)	40 (33.6)	29 (24.4)
2 children	57 (23.9)	25 (21.0)	32 (26.9)
3 children	2 (0.8)	2 (1.7)	0 (0.0)
Family history of cervical cancer			
No	227 (95.4)	110 (92.4)	117 (98.3)
Yes	11 (4.6)	9 (7.6)	2 (1.7)
Religion			
Hindu	189 (79.4)	95(79.8)	94(78.9)
Christian	44 (18.5)	22(18.5)	22(18.6)
Muslim	5 (2.1)	2 (1.7)	3(2.5)

Table 2: Knowledge of the healthcare providers on screening and vaccination for cervical cancer

Variables	Total	Government Medical college	Private Medical college
	N = 238 (100%)	n = 119 (100%)	n = 119 (100%)
Human Papilloma Virus (HPV) vaccination prevents cancer cervix			
Yes	216 (90.8)	105 (88.2)	111 (93.3)
No	6 (2.5)	3 (2.5)	3 (2.5)
Don't know	16 (6.7)	11 (9.3)	5 (4.2)
Age group recommended for receiving HPV vaccination			
9-12 years	12 (5.0)	5 (4.2)	7 (5.9)
12-15 years	16 (6.7)	12 (10.0)	4 (3.4)
15-45 years	204 (85.7)	98 (82.4)	106 (89.0)
Don't know	6 (2.5)	4 (3.4)	2 (1.7)
Availability of HPV vaccination at respective institutions			
Yes	67 (28.2)	35 (29.4)	32 (26.9)
No	117 (49.2)	50 (42.0)	67 (56.3)
Don't know	54 (22.7)	34 (28.6)	20 (16.8)
Screening and early detection of cancer cervix is done by			
PAP smear	62 (26.0)	32 (26.9)	30 (25.2)
Visual inspection of cervix	58 (24.3)	25 (21.0)	33 (27.7)
HPV testing	53 (22.2)	26 (21.8)	27 (22.7)
PAP smear &Visual inspection of cervix	16 (6.7)	9 (7.6)	7 (5.9)
HPV testing &Visual inspection of cervix	14 (5.8)	8 (6.7)	6 (5.1)
PAP smear & HPV testing	17 (7.1)	9 (7.6)	8 (6.7)
All	18 (7.5)	10 (8.4)	8 (6.7)
Recommended age group for PAP smear testing to screen for cervical cancer			
≤ 25 years	73 (30.7)	38 (31.9)	35 (29.4)
26-30 years	103 (43.3)	40 (33.6)	63 (53.0)
31-35 years	45 (18.9)	29 (24.4)	16 (13.4)
36-45 years	17 (7.1)	12 (10.1)	5 (4.2)
Frequency of PAP smear screening to be done for normal women			
Every 1 year	68 (28.6)	33 (27.7)	35 (29.4)
Every 3 years	113 (47.5)	55 (46.2)	58 (48.8)
Every 5 years	57 (23.9)	31 (26.1)	26 (21.8)
Best time for doing PAP smear screening			
A week after period	213 (89.5)	111 (93.2)	102 (85.7)
During menstrual flow	6 (2.5)	2 (1.7)	4 (3.4)
Not sure	19 (8.0)	6 (5.1)	13 (10.9)

The **Table 2-Table 4** depict the knowledge, attitude and practice of the participants regarding screening and vaccination for cervical cancer. Among 238 respondents, 41 (17.2%) of them had have undergone PAP smear screening for cancer cervix in the past. Out of those, 19 (46.3%), 8 (19.5%) and 14 (34.1%) had undergone PAP smear screening only once, yearly and once in three years respectively.

In 238 females, 197 (82.8%) had never undergone PAP smear screening for cancer cervix in the past. The common reasons for not undergoing PAP smear screening were lack of awareness in 47 (23.8%), lack of interest in 45 (22.8%), doubtful on efficacy in 42 (21.3%), fear of side effects in 35 (17.7%) and assumed as an expensive test in 28 (14.2%).

Table 3: Attitude of the healthcare providers towards screening and vaccination for cervical cancer

Variables	Total	Government Medical college	Private Medical college
	N = 238 (100%)	n = 119 (100%)	n = 119 (100%)
Screening for cervical cancer is expensive			
Agree	17 (7.1)	12 (10.0)	5 (4.2)
Neutral	16 (6.7)	9 (7.6)	7 (5.9)
Disagree	205 (86.1)	98 (82.4)	107 (89.9)
Willingness to undergo screening for cervical cancer if an opportunity is given			
Agree	217 (91.2)	110 (92.4)	107 (90.0)
Neutral	19 (8.0)	8 (6.7)	11 (9.2)
Disagree	2 (0.8)	1 (0.8)	1 (0.8)
HPV vaccination helps in prevention of carcinoma of the cervix			
Agree	227 (95.4)	114 (95.7)	113 (95.0)
Neutral	11 (4.6)	5 (4.3)	6 (5.0)
HPV vaccine causes no harm to the female			
Agree	211 (88.7)	105 (88.3)	106 (89.1)
Neutral	13 (5.5)	6 (5.0)	7 (5.9)
Disagree	14 (5.9)	8 (6.7)	6 (5.0)
HPV vaccine for cervical cancer is expensive			
Agree	110 (46.2)	58 (48.7)	52 (43.7)
Neutral	47 (19.7)	22 (18.5)	25 (21.0)
Disagree	81 (34.0)	39 (32.8)	42 (35.3)
Willingness to receive HPV vaccine if an opportunity is given			
Agree	184 (77.3)	91 (76.5)	93 (78.1)
Neutral	7 (2.9)	3 (2.5)	4 (3.4)
Disagree	47 (19.7)	25 (21.0)	22 (18.5)

Table 4: Practice of the healthcare providers regarding screening and vaccination for cervical cancer

Variables	Total	Government Medical college	Private Medical college
	N = 238 (100%)	n = 119 (100%)	n = 119 (100%)
Have ever undergone PAP smear screening for cancer cervix			
Yes	41 (17.2)	24 (20.2)	17 (14.3)
No	197 (82.8)	95 (79.8)	102 (85.7)
Have ever been vaccinated against human papillomavirus			
Yes	40 (16.8)	22 (18.5)	18 (15.1)
No	198 (83.2)	97 (81.5)	101 (84.9)
Have ever advised your female friends/ relatives/ patients to get vaccinated against HPV			
Yes	59 (24.8)	30 (25.2)	29 (24.4)
No	179 (75.2)	89 (74.8)	90 (75.6)
Have ever advised your female friends/ relatives/ patients to get screened for cancer cervix			
Yes	32 (13.4)	18 (15.1)	14 (11.7)
No	206 (86.6)	101 (84.9)	105 (88.3)

4. Discussion

In the present study, the mean ± SD age of the healthcare providers was found to be 32.91±7.49 years. This is comparable to the respondents' age characteristics as reported in a similar study by Chawla et al among healthcare workers in New Delhi.[16]

The present study revealed that the majority of the healthcare providers 216 (90.8%) were aware that HPV vaccination prevents cancer cervix. This was similar to a study by Chawla et al where the majority of respondents (81%) were found to be aware of the existence of vaccines for cervical cancer prevention.[16]

The respondents in our study showed good knowledge with regard to cervical cancer screening and vaccination but poor attitude and practice towards the same. These findings were similar to a study conducted among 318 healthcare workers of a medical university in Chennai, Tamil Nadu, by Chellapandian et al which reported that even though 83.3% were aware that the PAP smear test detects cervical cancer and 86.2% of the respondents knew that HPV causes cervical cancer but only 29.2% of the eligible respondents underwent the screening against cervical cancer, and 19.8% of the study participants were vaccinated for HPV.[17] In contrast to these findings, 75% of the female participants in that study self-reported having been screened for cervical cancer in a study by Obol et al in Northern Uganda. The study also documented that 60% and 66% of participants had adequate knowledge of cervical cancer and showed positive attitude toward cervical cancer screening respectively.[18]

In the present study, only 17% of healthcare providers had ever undergone PAP smear screening. These findings were in contrast to a study from Cyprus, an island in the Mediterranean which reported that only 10% of the participants had not ever undergone a PAP test. This might be due to differences in the population characteristics plus differences in the healthcare system in Cyprus where compulsory screening mandated by health insurance companies might have probably resulted in more people undergoing the same.[19]

Some of the existing studies witnessed that most of the healthcare workers in spite of possessing adequate knowledge regarding cervical cancer and its causes and prevention, showed poor attitude and practices when it came to adopting preventive measures towards the same.[20,21]

The current study included both government and private health sectors with an adequate sample size making the study findings generalizable. For a better understanding of the perceptions of healthcare providers on screening and vaccination for cervical cancer qualitative study could have been conducted in addition to this survey.

The healthcare providers were aware of screening and vaccination for cervical cancer but the same has not been reflected in their practice. In conclusion, several amenable barriers exist against PAP smear screening and HPV vaccination among healthcare providers despite having good awareness and a better attitude towards the same. This needs to be focused on and acted upon by first sensitizing the healthcare providers for undergoing PAP smear screening and uptake of the HPV vaccine as their role is pivotal in the implementation of the same for the actual larger community. Sufficient funding needs to be provided to non-governmental and volunteer organizations in the health sector that raise public and healthcare provider awareness regarding the importance of screening and vaccination for cervical cancer.

5. Source of Funding

Nil.

6. Conflicts of Interest

None declared

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