

Original Research Article

SCREENING AND PREVENTION OF CANCER UTERINE CERVIX: EDUCATION AMONG HEALTHCARE WOMEN STAFF IN A RURAL MEDICAL COLLEGE IN SOUTHERN INDIA

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Received : 07/07/2025
Received in revised form : 14/08/2025
Accepted : 04/09/2025

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DOI: 10.70034/ijmedph.2025.4.81

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (4); 449-454

ABSTRACT

Background: Lack of established screening programs for Cancer Uterine cervix in the developing countries shifts the onus of public education on the primary health care providers and their support staff. The attempt here is to note the education in healthcare female support staff in a rural medical college in Southern India about screening and prevention of cervical cancer.

Materials and Methods: All female health care support staff between 18 to 65 years was asked to fill a questionnaire regarding their views on screening and prevention of cancer cervix. A total of 242 women participated in the study.

Results: A total of 73.96% women were aware of Cancer cervix and 58.67% women staff knew it to be a preventable malignancy. Viral etiology of Cancer cervix was known by 46.69% women. Screening by Viral DNA tests and Pap smear was known by 42.56% and 60.33% subjects. Only 38.42% women had heard of vaccine against cancer cervix and its availability in India. Positively, 80.16% were aware that safe sexual practices prevent Carcinoma Cervix. But, only 9.5% had tested and 30.99% women had a Pap smear themselves. The main hurdle for Pap testing was found to be awareness of the procedure. On counselling, 71.48% women agreed to Pap testing and 80.16% favored Vaccination.

Conclusion: The gap in the awareness and practice of cancer prevention may be bridged by Education of the health care support staff to improve their personal practices and subsequently to motivate the society to participate in screening and vaccination programs.

Keywords: Cancer, cervix, screening, prevention, healthcare, women, HPV, vaccination.

INTRODUCTION

Carcinoma cervix ranks as the fourth most common cancer in women worldwide and is the leading cause of cancer deaths especially in sub Saharan Africa, South-east Asia and South America.^[1]

The World Health Organization (WHO) Global Strategy for Cervical Cancer Elimination has set a target incidence rate of below 4 per 100,000 women by 2030.^[2] The targets aim at 90% of all girls under age 15 to be complete vaccinated with Human papilloma virus (HPV) vaccine, 70% all women by 35 years to be screened with a high performance test

and 90% women identified with cervical disease to receive treatment.

HPV infection along with poor genital hygiene, high parity, smoking and other sexually transmitted infections like Human immunodeficiency virus and chlamydia have been the major factors in development of cancer cervix. Late diagnosis in advanced stages results in higher cancer mortality rates.

Cervical cancer is almost a completely preventable malignancy due to a highly effective and promising HPV vaccine and very simple reliable screening tests,^[1] like the Pap smear, visual inspection with

Acetic acid (VIA). Less than 30% of Low or Medium Income (LMIC) countries have national HPV vaccination programs and only 44% women in LMICs have ever been screened for cervical cancer, as compared to more than 80% in high income countries.^[1]

India contributes to one-fifth of the cervical cancer burden.^[3] A very high crude cervical cancer incidence of 18.7 per 100,000 women and cumulative risk of 2% for age 0-74 has been reported.^[4] HPV vaccination is not yet included in the national vaccination schedule. A national screening program for cervical cancer screening with a target age of 30 to 65 years and VIA as the offered test exists, but only less than 0.1% women have been actually screened as per the program.^[4]

Only 1.9% women in India have ever been screened for cervical cancer.^[5] This dismal statistics reflect the nonexistence of a single comprehensive national cervical cancer eradication program.

Opportunistic screening in gynecologic outpatient settings with a motivated gynecologist and primary health care provider still continues to be the mainstay.^[6] In our country, there is a significant information asymmetry and lack of preventive health awareness. Subsequently, screening for diseases where there are no obvious symptoms is perceived to be unnecessary, especially among the lower socioeconomic sections.

The onus of eradication hence depends on the front line health workers. They are the contact personnel, who if aware can act as the key personnel in educating the public at the most ground level and also help in screening, clinical handover for management and subsequent follow up. This, if backed up with documentation, cancer registries and regional cancer centres can bring down the cancer burden on the healthcare.

Our study here aims at understanding the education of frontline health care workers regarding cancer cervix. Nurses and hospital faculty are the most visible, frontline personnel providing health education to patients and health promotion in the general population. They influence cervical cancer screening adherence and health activities among most women. Recommendation of cervical cancer screening and prevention to individuals by medical professionals effectively improves screening coverage among the general population. Therefore,

nurses and health care workers should have current and accurate knowledge to promote informed decisions.

MATERIALS AND METHODS

This cross-sectional observational study was conducted amongst 242 female staff working at Subbaiah Institute of Medical Sciences, Shivamogga, Karnataka. The study population included 30 staff nurses, 46 housekeeping, 12 laboratory technicians, 14 interns, 77 medical students, 52 office clerks, 11 office attenders aged from 18 to 65 years.

The pre-designed questionnaire of 25 questions included demographic characteristics, knowledge about cervical cancer, Pap smear screening and HPV vaccines. The women were personally interviewed and a written informed consent was taken. They were also questioned regarding inhibitions and myths regarding screening and prevention of cervical cancer.

The women were then made aware about viral etiology, screening potential, early diagnosis and effective prevention of cervical cancer in our population. Also, stress was imprinted on them being the pivot for education of the general population with respect to preventive measures of cervical cancer.

Data was analyzed as descriptive statistics and expressed as percentages. Continuous variables were represented as mean $\pm$ Standard Deviation form.

RESULTS

Of the 242 women respondents, 223(92%) were in the active reproductive age group of 20 to 40 years. Hinduism was the commonly (84.7%) followed religion, followed by Christianity (9.5% and Islam (5.7%). Women were almost matching in being single (55.78%) and married (44.21%). One fourth (25.6%) of the women had education of 10th grade or less and about 6% had no basic schooling at all. The remaining (68.58%) had completed college. The women with no or only basic schooling were mostly (23.5%) working as housekeeping and attenders in the hospital and the others were working in the capacity of laboratory technicians, office clerks, staff nurses, and medical and nursing interns. [Table 1]

Table 1: Demography

Category	Number	Percentage
Age:		
<20yrs	1	0.41%
20-40yrs	223	92.00%
41-60yrs	18	7.43%
Religion: Hindu	205	84.71%
Muslim	14	5.78%
Christian	23	9.50%
Marital status:		
Single	135	55.78%
Married	107	44.21%
Widow	Nil	0%
Education:		
Grade 1-4	8	3.30%
	15	6.19%

Grade 5-9	13	5.37%
10th grade	26	10.74%
Pre-university Diploma	48	19.83%
Graduate	113	46.69%
Post graduate	5	2.06%
Illiterate	14	5.78%
Occupation: Housekeeping staff	46	19.00%
Staff nurse	30	12.39%
Clerical staff Interns	52	21.48%
Nursing students	14	5.78%
Attenders	77	31.81%
Laboratory	11	4.54%
Technician	12	4.95%

Table 2: Survey

Questions	Yes	No	Do not know
I have heard of cancer uterine cervix	179(73.96%)	63(26.03%)	-
Cancer uterine cervix is a preventable disease	142(58.67%)	100(41.32%)	-
Cancer uterine cervix is caused by a virus	113(46.69%)	50(20.66%)	79(32.64%)
This virus can be detected before it causes cancer	103(42.56%)	64(26.44%)	75(30.99%)
There is a test for detecting pre-cancerous lesion of cancer cervix	170(70.24%)	72(29.75%)	-
I have heard of pap smear	172(71.07%)	70(28.92%)	-
Pap smear can detect cancer cervix in early stages	146(60.33%)	27(11.15%)	69(28.51%)
If pre-cancerous disease is detected, cancer can be prevented	146(60.33%)	27(11.15%)	69(28.51%)
Cancer Cervix can be prevented by taking Vaccines	93(38.42%)	68(28.09%)	81(33.47%)
Vaccines are available in India	95(39.25%)	39(16.11%)	108(44.62%)
Safe sexual practices (condoms, single partner, good hygiene, regular check-ups) can prevent Cancer Cervix	194(80.16%)	29(11.98%)	19(7.85%)
All women should get a PAP smear done	100(41.32%)	92(38.01%)	50(20.66%)
I have got a PAP smear done as per screening schedule	23(9.50%)	203(83.88%)	15(6.19%)
Was PAP smear taken during any of your gynaecological consultations	75(30.99%)	150(61.98%)	17(7.02%)
If available, I would like to take HPV vaccination	194(80.16%)	33(13.63%)	15(6.19%)
If available, I would like to have a PAP smear taken	173(71.48%)	51(21.07%)	18(7.43%)

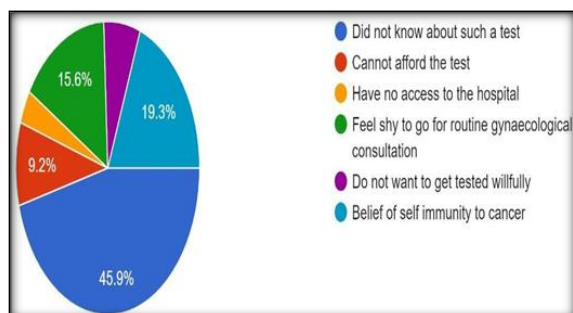


Figure 1: Justification for not practicing screening for cancer cervix

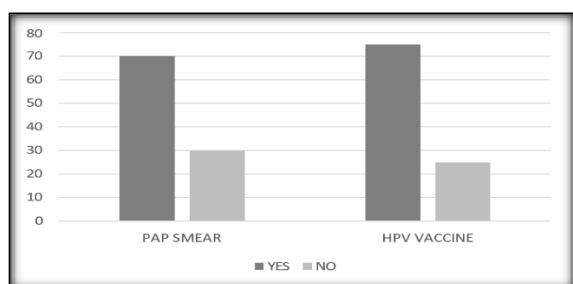


Figure 2: Acceptance of screening (PAP smear) and prevention (HPV vaccination) after counselling.

Though 179(73.96%) women were aware of cervical cancer, only 142(58.67%) knew it to be preventable. Viral etiology of cancer cervix was known by 46.6% women and the remaining were unaware (32.64%) or refused to believe (20.66%) it. Only 42.56% participants believed the virus to be detected before it caused malignancy. Positively, 71.07% women had

heard of Pap smear, but they (39.62%) did not know that it detected early precancerous lesions and that the malignancy could be averted. Only 38.42% women knew about Human Papilloma Virus (HPV) vaccines against cervix cancer and its availability in India. Awareness regarding safe sexual practices to prevent cancer cervix was understood by 80.1% participants. [Table 2]

Only 41% subjects believed that all women should have a Pap smear done. One tenth (9.5%) of the women had Pap testing done for themselves, whereas 90% had never undergone Pap screening. This depicts the lacuna in being aware and being practical. Though 71% women had heard of Pap smear and 41% believed that pap testing should be offered to all women, only 9.5% had actually practiced it.

Interestingly, when asked about the reason for not having a Pap test, 19.3% women believed themselves to be self-immune to cancer, 9.2% could not afford the test, 15.6% were reluctant to pelvic examination, 45.9% were not aware that they can ask for a Pap test and the remaining willfully refused any testing. [Figure 1]

After counselling, 80.16% women voted for getting vaccinated and 71.4% for Pap testing. Around 13.6% refused vaccination and 21% still refused Pap testing, the remaining being equivocal. [Figure 2]

DISCUSSION

There is need to identify gaps in public awareness and practice, to take account of local culture and

behaviour which will later reflect in the success of the program and control or eradication of the disease. Though guidelines for screening for cervical Cancer are clear and its role in averting malignancy is proven, a universal screening program worldwide is yet to materialise, especially in the developing countries.^[2]

The burden of community counselling, education and influencing preventive medicine is still on the shoulders of the primary health care providers. Most of the hospital based studies on knowledge and attitudes regarding cancer cervix have targeted medical students,^[7-10] nurses and nursing students,^[8,11,12] doctors,^[12,13] and community health workers.^[14] In our study, Inclusion of Paraclinical (laboratory technicians) and hospital support staff (office clerks, house-keeping) along with staff nurses, medical and nursing interns and final year medical students was intentional. It is noted that people working in any capacity in hospitals are always relied upon to provide sound advice on varied levels of medical care in their respective localities and societies.

A review of hospital and community based cross-sectional studies from 2012 to 2020 included 7688 women in age range of 12- 65 years.^[15] These include rural and urban community surveys, school surveys and hospital based Outpatient studies. Most of the working hospital staff studies,^[7-14] had participants in the younger age group of up to 50 years. The age of our study subjects ranged from 20 to 60 years and 92% were in the active reproductive group wherein need for screening of cancer cervix is most relevant. Hinduism was the more practiced (84.7%) religion followed by Christianity (9.5%) and Islam (5.7%). This is similar to the study population of Ganju et al,^[8] where 96.5% participants comprised of Hindus. Our women subjects were almost matched in being single (55.78%) and married (44.21%). The previous studies mostly dealt with either a married population or a predominantly un-married study subjects as depicted in the comprehensive review by Taneja N et al.^[15]

Level of education determines level of knowledge. Still, experience and life lessons also widen the horizon of the mind. This is found to be true when we assess the practical knowledge of our study subjects. Though one fourth (25.6%) of our women had only basic schooling and another 6% had no schooling at all, it was worth noting that almost three fourth (73.96%) of our participants were aware of cervical cancer and 58.67% knew it to be preventable. Moreover, 71.07% women had heard of Pap smear. Interestingly, our students and nursing faculty had obtained information through standard medical literature like textbooks followed by media forums, whereas, other hospital faculty had gained knowledge from hospital bulletins, direct conversations among hospital staff, hospital based health camps and schemes and media forums. This observation is in alignment with Singh J et al,^[7] where majority of the study participants had learned information via

standard medical textbooks (65.3%) followed by internet forums (43.8%) and radio broadcasts. However, Awareness of cancer cervix ranged from 15% to 80% across various cross-sectional studies done across India and across both rural and urban masses and illiterate to a literate population.^[15]

Knowledge regarding Pap test ranged between 2% to 15% and practice of preventive medicine (5%- 13%) was even more dismal in cross sectional studies done across India from 2012 to 2020.^[15] Here, we found that though 71% women had heard of Pap smear, 39.62% women did not know that it detected precancerous lesions and that with early intervention, malignancy could be averted. Only one tenth (9.5%) of our women had Pap testing done for themselves. There was a huge gap in knowledge and practice of screening methods, as is evident in most of the studies across our country.^[15]

Studies done among medical and nursing students,^[7,8] showed that knowledge of cancer cervix was fairly good (70-80%). Medical students had much in-depth knowledge of cancer cervix, vaccine and its side effects when compared to dental and nursing students^[9]. Females fared better,^[7,9] especially regarding screening and were more willing to get vaccinated. Males fared better,^[8] with basic cancer information but were more sceptical regarding screening and vaccination. Undergraduate female medical and paramedical students in Ethiopia,^[10] had good knowledge in 59.3% but less than 1% had ever been screened for cervical cancer.

In a study among female healthcare professionals in a tertiary care hospital in India,^[12] it was noted that doctors had much better knowledge about cancer cervix risk factors and Pap test than nurses. Also, 52.6% doctors had had a Pap test as compared to 11.2% nurses. The reason for not getting screened was told to be absence of symptoms (31%) followed by a notion of immunity to cancer (29%). Here, none of the women had received HPV vaccination, probably due to the mean age being 36 years in nurses and 41 years in doctors. Almost one-fifth (19.3%) of women in our study believed themselves to be self-immune to cancer, one tenth (9.2%) could not afford the test, 15.3% were reluctant for a pelvic exam and 45.9% were not aware that they can ask for a Pap test without any symptoms. The remaining just willfully refused any testing. This depicts that there is a serious difference in making a strategy and actual implementation. On one hand is the WHO Global Strategy for cervical cancer elimination^[2] and Indian National program for Cervical cancer Screening^[4] and on the other is the fewer than one in ten women who have actually been screened under this program. Among nurses, midwives and clinical officers in rural Uganda,^[11] it was seen that 60% of 286 participants had adequate knowledge of cancer cervix and 75% of female participants have undergone screening. It was noted here that who had received training on cervical cancer screening had better knowledge and positive attitude regarding screening. Community health workers in Northern India,^[14] had good knowledge

and perception with a practice of less than 10%. It was perceived here that introducing more educational programs and encouraging their participation in screening campaigns may narrow this gap.

Cancer prevention by vaccination further needs to be advertised and the population educated. Even among the well-read people, vaccination in adults is still held sceptical and remains challenged often. HPV is a proven etiology of Cancer cervix and timely vaccination in young girls (9-15 years) does prevent future malignancy. In India, though bivalent and quadrivalent vaccines are available since 2008, its inclusion in National Immunization programme is still pending^[4]. However, focal efforts in some Indian states are promising.^[3] The indigenous quadrivalent vaccine funded by the Indian government and authorized by Drugs Controller General of India (DCGI) is to be imminently included in the National Immunization program and will further the fight against cervical cancer.

None of the female doctors or nurses in a tertiary care hospital in metropolitan city of Southern India had been vaccinated with HPV vaccine.^[12] In a medical college hospital in north India, 80% of the 400 respondent medical and nursing students were aware of HPV vaccine, but only 5.5% were vaccinated, the major concerns being safety, efficacy, availability and cost of the vaccine. Female medical students had better knowledge score and intent to get vaccinated, the major concerns being availability of vaccine in India and the doses required.^[7] Though medical students had in depth knowledge of cancer cervix and HPV, HPV vaccine knowledge and intention to take the vaccine was more among the female respondents.^[9] Most males were unaware of the availability of HPV vaccine. And, cultural barriers and high vaccine cost was of concern in accepting vaccine. This study advocated educating male students and those in dental and nursing courses, healthcare provider recommendation for vaccine promotion and emphasizing their role as a future healthcare provider. In the review of various cross-sectional studies across India from 2012 to 2020,^[15] the knowledge of HPV vaccine was as low as less than 1% in urban slums to as high as 32% among urban adolescents across India. Of the 318 health care professional participants among tertiary hospitals across Chennai in south India,^[13] 30 % of eligible respondents underwent screening tests, 19.8% were vaccinated for HPV and 77.2% were willing for vaccination and to recommend it to their family. Lack of awareness among healthcare professionals was the main hindrance to HPV vaccination. In our study, almost 38.4% women knew about HPV vaccine and its availability in India.

The role of personal hygiene and safe sexual practices is being acknowledged as one prime preventive measure across studies,^[7,8,15] and was also emphasized by 80.1% of our study women.

After an interactive session, 80.16% women voted for vaccine uptake for themselves and their family. Also, 71.4% women agreed for Pap testing. This

emphasises the need for informative interactive and positive promotional sessions among the existing hospital staff who in turn can be our messengers in the society so that the fight against cancer cervix will be boosted. A preventable malignancy can be made an extinct malignancy.

India is estimated to be the country with world's highest expected burden of cervical cancer,^[16] and has very poor access to cancer preventive measures.^[17] Public health decisions to set health targets and allocate adequate resources for screening, diagnosis and vaccination will depend on actual burden of disease in a particular population. For cancer cervix epidemiology, the key aspects are sexual behaviour, HPV prevalence and cervical cancer incidence. By applying Footprinting framework,^[18] available data in cancer registries and community survey in local population can be extrapolated to those populations who have similar characters and having no available data. In the Indian context, by this Footprinting technique, India was divided into two groups of 19 and 6 states with low and high cancer cervix incidence. As expected, it was seen that individuals, especially men in high incidence areas had more sexual activity with non-regular partners and here, cancer cervix incidence and HPV positivity was also higher. This Indian case study was in contrast to GLOBOCAN1 as the nationwide cervical cancer incidence derived from aggregating state specific data was lower than the estimate by GLOBOCAN. This is because here, data from 17 additional cancer registries with lower incidence were also included. Lack of data and missing data is always a challenge when preventive strategies are planned.

Local studies and surveys go a long way in understanding the basic culture, behavioural patterns, and acceptance of interventions in preventable diseases. Now, with advent and increasing acceptance of screening tests and vaccination, carcinoma cervix may be categorized as a preventable malignancy. Though our women were always ahead in the education or knowledge aspect, there is definitely a gap in being aware and in being practical.

CONCLUSION

Our hospital based study included all those women who are the first contact individuals (nurses, final year medical students, medical interns, laboratory technicians, clerks, housekeeping staff) other than the treating doctor. They are the ones who take care of the people when they come to the hospital and make their visit a comfortable one. They listen kindly to the patient's woes and add to their recovery, be it in the out-patient department or as an in-patient. Their role as representatives of health care is crucial and improving their knowledge and attitudes about preventive interventions is essential. Specially, the hospital workers other than doctors usually belong to

the local population and their data may be extrapolated to the entire area. And, hence, based on these studies, we may be able to plan our strategy in screening the eligible women in our area and vaccinate those young girls to make the now preventable cancer cervix extinct.

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