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Original Research Article

Study on awareness of human papillomavirus vaccine

Arunkumar P.¹, Kohila K.^{2*}

¹Saveetha Medical College and Hospital, Thandalam, Chennai, Tamil Nadu, India

²Department of Obstetrics and Gynecology, Saveetha Medical College and Hospital, Thandalam, Chennai, Tamil Nadu, India

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*Correspondence:

Dr. Kohila K.,

E-mail: kohilakalimuthu@gmail.com

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ABSTRACT

Background: Cervical cancer is the second most common cancer among women in India. Despite the various interventions, prevention is always better than cure. Vaccination is the most effective way of preventing it. The objective of this study was to assess the knowledge, attitude and practice related to HPV vaccination among adolescents and reproductive age women.

Methods: The data collected were used for the study. It was a community based cross sectional study involving 201 women as study participants who attended the obstetrics and gynecology department of Saveetha Medical College Hospital during the period of January 2022-March 2022 using a pretested, semi structured questionnaire tool.

Results: Among the study population, 64.7% had knowledge about cervical cancer and 62.2% knew about vaccines and their effects. More than 60% of the study population were willing to get vaccinated.

Conclusions: As a primordial prevention, we should create awareness among young population to get vaccinated against HPV, and sexually active women to take pap smear. This will prevent the incidence of cervical cancer in India.

Keywords: OCPs, Multiple pregnancies, Pap smear

INTRODUCTION

Cancer of uterine cervix is the second most common cancer in India and fourth most common cancer among women worldwide. As per WHO study in 2020, more than 300,000 people died worldwide due to uterine cancer, 90% of the deaths in low- and middle-income countries and projected to increase up to 400 000 deaths in 2030.¹ In high income countries, vaccination and screening programmes are in place for girls and effective screening to identify precancerous lesions in treatable stages. But in low-and middle-income countries, there is limitation to access preventive measures and less awareness for screening the lesion.

Human papillomavirus (HPV) is the most common sexually transmitted infection which is the primary cause of precancerous and cancerous cervical lesions. Many HPV infections are asymptomatic and 90% of them

resolve after 2 years. HPV is of more than 100 types, of which HPV 16 and 18 are the most oncogenic types causing about 70% of cervical cancer worldwide. HPV 6 and 11 are low risk strains, causing genital warts which can rarely develop into cancer. Most common methods of spreading are direct skin-skin contact like vaginal and anal sex. Risk factors are of early age of first sexual intercourse, multiple pregnancies, and smoking, prolonged use of OCPs, poor perineal hygiene, poor immune status, low socioeconomic status and HIV infection.

Three HPV vaccines-Gardasil 9 (9 valent vaccine), quadrivalent Gardasil protects against 6, 11, 16, 18; bivalent cervarix protects against HPV types 16 and 18 that cause most HPV cancers.² The Indian academy of pediatrics committee on immunization (IAPCOI) recommends offering HPV vaccine to all females who can afford the vaccine. Vaccination can be given to females as young as 9 years as well as in those aged 13-26 years who have not previously completed vaccination. HPV vaccine

has shown good efficacy to prevent cervical cancers. Vaccination of a large population develops herd immunity and shows a decrease in infection spread.³

METHODS

This was a community based cross sectional study conducted from January to March 2022 at department of obstetrics and gynecology, Saveetha Medical College And Hospital, Chennai, Tamil Nadu. Study consisted of 201 women who attended the obstetrics and gynecology department OPD during the study period as the population studied. Informed written consent was obtained from all the study participants after explaining the aim of study, benefits, and confidentiality of the research study.

Data containing the demographic details, knowledge of cervical cancer, HPV and awareness about HPV vaccine and opinion about vaccination and the other information required was collected using a pre-tested semi-structured questionnaire and investigators performed a pilot testing. Principal investigator cross-checked all the data collected and rectified all the mistakes to maintain the quality of the data.

The data was entered in Microsoft excel and analyzed using SPSS software version 22. Analytical statistics such as the chi-square test was used to find association and to elicit knowledge, attitude on HPV vaccination.

Inclusion criteria

All the women attending OPD, age group between 13 to 25 (eligible to get vaccination) were included in study.

Exclusion criteria

Women already diagnosed and treated for advanced stages of carcinoma cervix, critically ill patient, age group 26 and above patients were excluded from the study.

RESULTS

The study comprised a total of 201 women of reproductive age.

Majority of the study participants (31.8%) were in 22 to 25 as shown in Table 1 and the mean age is 19.

Table 1: Sociodemographic characteristics of study participants.

Variables	Total	Percentage (%)
Age (years)	13-15	12.9
	16-18	25.9
	19-21	29.4
	22-25	31.8
Family history	Yes	29.5
	No	70.5

In our study population, the majority of the women, 141 (70.1%), had no family history of carcinoma cervix, whereas the remaining 60 (29.9%) had a family history of carcinoma cervix.

The meaning of cervical cancer was known to 64.7% percent of the population (Table 2).

Table 2: Knowledge on cervical carcinoma.

Knowledge on cervical carcinoma	Total	Percent (%)
Meaning of cervical carcinoma	Pain in the cervix	5
	Swelling in cervix	10.9
	Abnormal growth of the cells in the cervix	64.7
	Wound in the cervix	8.5
	Don't know	10.9

More than 60% percent of the study population knows that the virus is the causal organism (Figure 1). The majority of women 113 (56.2%) believe that cervical cancer is preventable, while 50 (24.9%) participants believe it is not preventable.

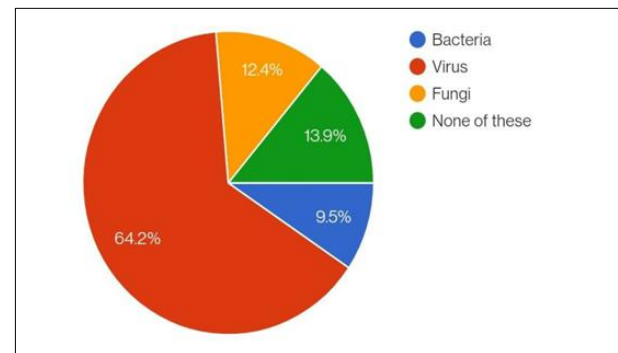


Figure 1: Cause of carcinoma cervix.

Most of the participants 118 (58.7%) have known that HPV is transmitted through sexual contact and the minimum number of participants 5 (2.5%) thinks that it spreads cough and sneeze.

Risk factors for the cervical cancer in the study lists sexually transmitted infections (118; 58.7%), cigarettes/tobacco consumption (112; 55.7%), multiple sexual partners (109; 54.2%), poor perineal hygiene (108; 53.7%), early marriage and sexual exposure (102; 50.7%). Less than 10% of the participants are not conscious about the risk factors of cervical cancer shown in Figure 2.

The knowledge about signs and symptoms of cervical cancer in the study population shows post coital bleeding (103; 51.2%), intermenstrual bleeding (100; 49.8%), foul smelling vaginal discharge (141; 70.1%), lower abdominal pain (124; 61.7%), painful intercourse (92; 45.8%). Around 25 participants were unaware of the signs and symptoms of the HPV infection as shown in Figure 3.

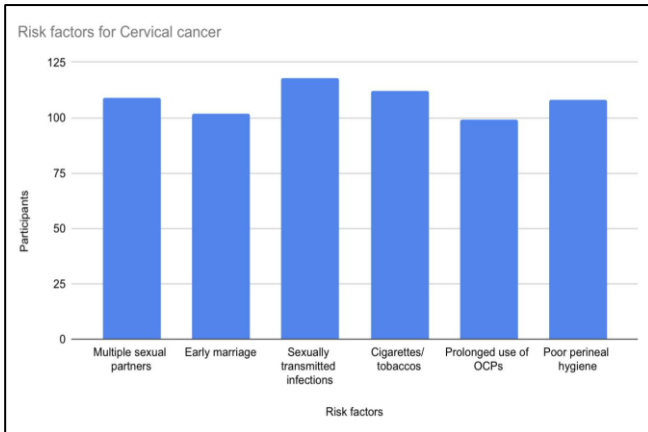


Figure 2: Risk factors for cervical cancer.

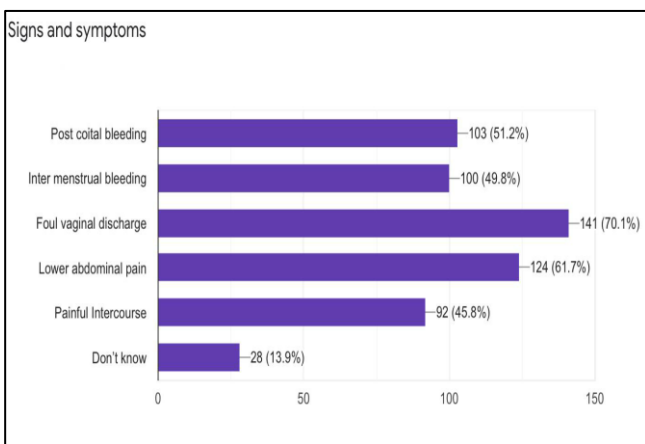


Figure 3: Signs and symptoms of cervical cancer.

Knowledge regarding the preventive measures shows participants consider more of maintaining perineal hygiene (149; 74.1%) and vaccination against virus (145; 72.1%) are helpful.

Knowledge, attitude, acceptance on HPV vaccination

The majority of the study participants 125 (62.2%) knew about HPV vaccination and its accessibility, as well as the age at which it should be provided and how it should be administered during pregnancy (Table 3).

Table 3: Knowledge about HPV vaccination.

Knowledge on HPV vaccination	Total	Percent (%)
Availability of HPV vaccination	Yes	125 (62.2)
	No	42 (20.9)
	Don't know	34 (16.9)
Age group to be given (years)	0-10	17 (8.5)
	10-30	121 (60.2)
	30-50	47 (23.4)
	>50	16 (8)
Pregnancy is a contraindication	True	161 (80.1)
	False	40 (19.9)

Figure 4 shows how people learned about HPV vaccination from various sources, with the health care workers accounting for the most (37.3%), and newspaper accounting for the least (5%).

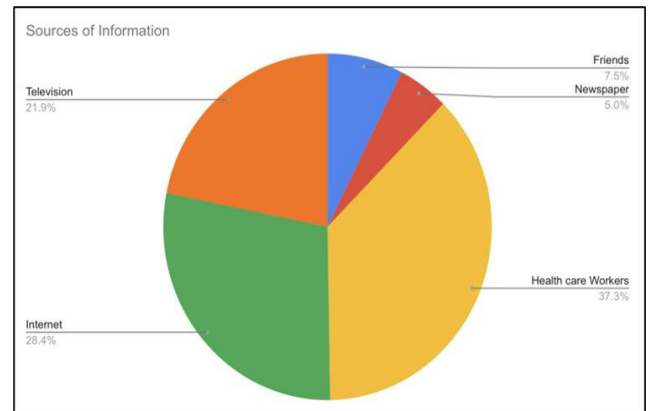


Figure 4: Sources of information.

A mean population of 36 was not aware about cervical cancer and it's screening as shown in Table 4.

Table 4: Questionnaire based response about HPV vaccine.

Questions	Yes	No	Don't know
	N (%)	N (%)	N (%)
Do you need screening to be done before HPV vaccination?	115 (57.2)	49 (24.4)	37 (18.4)
Do women who already have been vaccinated, require cervical cancer screening?	121 (60.2)	52 (25.9)	28 (13.9)
Is it safe to have sex without condoms after HPV vaccination?	76 (37.8)	91 (45.3)	34 (16.9)
Can it be given to a woman already having HPV infection?	86 (42.8)	68 (33.8)	47 (23.4)
Is it safe to have multiple sexual partners after full course of HPV vaccine?	83 (41.3)	84 (41.8)	34 (16.9)

Among the 201 women who took part in the study, 135 (67.2%) wanted to be vaccinated, 115 (57.2%) wanted to be screened before being vaccinated, and the remaining 41 (20.4%) did not want to be vaccinated (Table 5). Despite their intention to get vaccinated, the majority of the people 168 (83.6%) preferred to be informed by health experts. Chi square was calculated between those who are willing and not willing to get vaccinated, the value is 6.4581 and the p value is found to be 0.011 which is significant at $p < 0.05$.

Table 5: Participants willing to get vaccinated.

Vaccination status	N	Percentage (%)
Yes	135	67.2
No	41	20.4
Maybe	25	12.4
Total	201	100

After being diagnosed with HPV, the majority of women 91 (45.3%) believe it is unsafe to have sex without condoms, while the remaining 76 (37.8%) and 34 (16.9%) believe it is safe to have sexual intercourse without condoms and don't have an opinion, respectively. Furthermore, 84 (41.3%) of the participants believe it is safe to have sexual intercourse with several partners after completing the HPV vaccination course, while the remaining 84 (41.8%) do not suggest this attitude and the other 34 (16.9%) have no knowledge of information.

As per the data collected, most of the participants (41.3%) believe the vaccine is 90% effective, and only 5% believes it is 100% effective which is shown in Table 6.

Table 6: Vaccine efficacy against HPV infection.

Efficacy against HPV infection	Participants	Percentage (%)
50%	27	13.40
70%	81	40.30
90%	83	41.30
100%	10	5

DISCUSSION

From our study population of 201 participants, the most common age group participated was between 22 to 25 years.

The study found that the results were similar to the study conducted by Chande et al, which showed more than 60% of the population heard about cervical cancer.⁶ In this study, health care workers, television and the internet were the major sources of information which were similar to the study conducted by Abdullahi et al.⁴ In a similar study done by Juntasopeepun et al in Thailand, the most common source of information was health care workers which were similar to our study, where the participants were gathering information from healthcare workers (37.3%) and they also wanted to get informed by the health experts (83.6%).⁷

More than half of the study population in the study was aware of the symptoms, risk factors and preventive measures for cervical cancer and it was similar to the findings from study conducted in Northern Uganda by Mukama et al.⁵ There was a need to conduct campaigns and awareness programs to improve the knowledge regarding symptoms, risk factors and preventive measures due to lack of awareness among the women. The majority of the women were optimistic about cervical cancer.

Cervical cancer screening was seen positively by women who were informed of the symptoms, risk factors and preventive methods. Cervical cancer can be prevented by early screening and HPV vaccination. According to several studies, even if women were offered screening, they may not take advantage of screening because of barriers such as fear of positive diagnosis, fear of cervical screening, vaginal inspection. The continued implementation of a cervical cancer awareness programme will result in a positive shift in women's perceptions about cervical cancer screening.

Among the study population, more than 65% of the participants were willing to get vaccinated. Participants received detailed information about cervical cancer and HPV vaccine from the health care workers and it was the reason for the high willingness rate. In a study done by CharaKorn et al showed despite poor knowledge, the acceptability of HPV vaccine was high.⁹ Counseling and information by health care providers increased the acceptance rate of the HPV vaccine shown in a study done by Basu et al in Kolkata.¹⁰

High cost of the vaccine and the fear of side effects were the potential barriers for low acceptance of HPV vaccine in the study. If the government facilitated the HPV vaccine accessibility by including the HPV vaccine in the national immunization program as an essential vaccine and improved explanation by the health care workers about HPV vaccine may increase the vaccine acceptability and reduce the incidence of cervical cancer as stated in a study done by Montgomery et al.⁸

And now experts are motivating the male partner to get vaccinated before sexual exposure so that their female partner will be protected against developing cervical cancer.

Limitations

Cultural issues could not be addressed completely, as it was quantitative study. Qualitative studies may throw light on this aspect. Study area was limited to our selection of study population, which was restricting the scope and relevance.

CONCLUSION

To conclude, in this epidemiological study which is designed to assess the awareness about knowledge of cervical cancer and HPV vaccine in young females, involving 201 women using a pretested, semi structured questionnaire tool, 64.7% have knowledge about cervical cancer and 62.2% know about vaccines and their effects. More than 60% of the study population is willing to get vaccinated.

In this new era, people are accessing health care facilities for various reasons and also for master health checkup. Hence as a primordial prevention we have to create

awareness and make adolescent girls to get vaccinated against HPV. And also, as a primary prevention, we have to make all sexually active females to undergo pap smear or colposcopic examination every 3 years once. So that we can easily reduce the incidence of cervical cancer in India.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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