

Knowledge, Attitude & Practices of HPV vaccination in medical students

¹Dr. Vidya Rani, Gynecology & Obstetrics, Assistant Professor, Department of Gynecology & Obstetrics, Varun Arjun Medical college, Shahjahanpur, U.P., India.

²Dr. Rajnesh Kumar, Assistant Professor, Department of Anaesthesia, Government Medical College, Badaun, India.

³Dr. Aditi J. Upadhye, Intern, Department of Gynecology & Obstetrics, Dr PDMMC Medical College, Amravati, M.S. India.

⁴Dr. Jayshree J. Upadhye, Professor, Department of Gynecology & Obstetrics, Varun Arjun Medical College, Shahjahanpur, U.P. India.

Corresponding Author: Dr. Jayshree J. Upadhye, Professor, Department of Gynecology & Obstetrics, Varun Arjun Medical College, Shahjahanpur, U.P. India.

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Abstract

Background: Preventing cancer with a vaccine is a comparatively new concept. Present study was done to evaluate the knowledge, attitude & practices of HPV vaccination in medical students

Materials and Methods: This study is a cross-sectional study conducted in the department of Obstetrics and Gynaecology at Varun Arjun Medical college, Shahjahanpur, U.P., on 200 female subjects in the age group 21-24 years from final M.B.B.S. & those doing internship from 1st July to 31st August 2022.

Results: In present study, out of 200 subjects, 144 (72%, 95%) subjects knew cancer of Cervix is the leading cause of death in India, 190 (95%) subjects knew HPV infection is the main reason for Cervical cancer while 186 (93%) subjects knew HPV infection is sexually transmitted.

Majority i.e., 170 (85%) knew that use of condom prevents HPV infection, 40 (20%) subjects knew HPV

vaccine to prevent HPV infection, positive point was 144 (72%) knew that all of the above methods prevent HPV infection.

178 (89%) subjects knew that HPV Vaccine is available for prevention of cancer of cervix, 160 (80%) subjects knew that ideal age of giving vaccine to the girls is 9-13 years, 136 (68%) subjects knew that the vaccine can be given up to 45 years of age.

64 (32%) subjects knew that HPV vaccine prevents from all of the above cancers.

Only 34 (17%) subjects were vaccinated but attitude towards vaccination was positive. 184 (92%) subjects want to get vaccinated and would like to recommend this vaccine to their family and friends.

118 (59%, 95%CI, 51.8 – 65.9%) had no reason of not getting vaccinated, 36 (18%) didn't get vaccinated due to lack of awareness.

Conclusion: We conclude that the medical students had appropriate knowledge about HPV and vaccination.

Practice of vaccination was less but their attitude was positive.

Keywords: HPV vaccine, cervical cancer, sexually transmitted, girls

Introduction

Cervical cancer (CC) is the fourth most frequent cancer in women worldwide. It is eighth most common cancer overall with 5,70,000 new cases in 2018. It represents 6.6% of all female cancers. Lower income countries have 80% cases of CC with 90% of deaths from CC.¹

Cervical cancer accounts for 26.1-43.8% of all cancers in Indian women.²

In India alone there are an estimated 132,000 new cases of cervical cancer. 74,000 deaths are reported each year.³

CC is caused by the human papilloma virus (HPV). HPV-16 and HPV-18 are predominantly responsible for 70%–80% of the total cases. In India, in 82.7% of invasive CCs, presence of HPVs 16 or 18 is seen.⁴

Cervical cancer is one such cancer for which an effective vaccine is available. In India, high-risk HPV types 16 and 18 account for 80% of cervical cancers. It also accounts for 63% of high-grade cervical precancerous lesions.⁵

Two types of HPV vaccines are available in India.– quadrivalent vaccine (*Gardasil*, targets HPV types 6, 11, 16 and 18. Bivalent vaccine (Cervarix, targets HPV types 16 and 18).⁶

For girls aged 9-14 years, 2 intramuscular doses of either HPV4 or HPV2 at a 6-month interval is recommended. 3 doses of the vaccine over a 6-month period are recommended for girls aged 15 years and older and for immunocompromised females. Bivalent vaccine is approved only for females.⁷

Aims & Objectives

To explore awareness about cervical cancer, human papilloma virus and HPV vaccination among the medical students.

Material & Methods

This study is a cross-sectional study conducted in the department of Obstetrics and Gynaecology at Varun Arjun Medical College, Shahjahanpur, U.P. on 200 female subjects n from 1st July to 31st August 2022.

It was on students over age of 18 from the final year & interns of medical school.

Table 1: Questionnaire

Age
Education
Is cancer of cervix leading cause of death in India?
Is main reason for cervical cancer HPV infection?
Is HPV infection sexually transmitted?
What are the methods available for prevention of HPV infection?
Do you know HPV Vaccine is available for prevention of cancer of cervix?
Do you know the ideal age of giving vaccine to the girls is 9-13 years?
Do you know that the vaccine can be given up to 45 years of age?
Does the vaccine prevent from other cancers?
Does the vaccine guarantee 100% protection from cervical cancer?
Have you taken the vaccine?
Reasons for not taking vaccine?
Do you want to get vaccinated and will you recommend this vaccine to your family and friends?

Results

Table 2: Knowledge of association of HPV infection & cervical cancer

Knowledge of association of HPV infection with Cervical cancer	No. of subjects n=200	Percentage (95% CI)

Is cancer of Cervix the leading cause of death in India?	144	72% (65.2 – 78.1%)
Is HPV infection main reason for Cervical cancer?	190	95% (90.9 – 97.6%)
Is HPV infection sexually transmitted?	186	93% (88.5 – 96.1%)

In present study, out of 200 subjects, 144 (72%, 95%CI 65.2 – 78.1%) subjects knew that cancer of Cervix is the leading cause of death in India, 190 (95%, 95%CI, 90.9 – 97.6%) subjects knew that HPV infection is the main reason for Cervical cancer while 186 (93%, 95%CI 88.5 – 96.1%) subjects knew that HPV infection is sexually transmitted. (Table 2)

Table 3: Methods available for prevention of HPV infection?

Methods available for prevention of HPV infection?	No. of subjects n=200	Percentage (95%CI)
HPV Vaccine	40	20% (14.7 – 26.2%)
Condom	170	85% (79.3 – 89.6%)
Avoid multiple sexual partners	12	6% (3.1 – 10.2%)
Delay sexual activity	8	4% (1.7 – 7.7%)
All of the above	144	72% (65.2 – 78.1%)
Don't know	4	2% (0.5 – 5.0%)

In present study, out of 200 subjects, majority i.e.,170 (85%, 95%CI, 79.3 – 89.6%) knew that use of condom prevents HPV infection, 40 (20%, 95%CI 14.7 – 26.2%) subjects knew HPV vaccine to prevent HPV infection, 12 (6%, 95%CI, 3.1 – 10.2%) knew that avoiding multiple sexual partners prevents HPV infection, 8 (4%, 95%CI, 1.7 – 7.7%) subjects knew that delaying sexual activity

prevents HPV infection while 4 (2%, 95%CI, 0.5 – 5.0%) didn't know any method of preventing HPV infection, Positive point in our study was 144 (72%, 95%CI 65.2 – 78.1%) knew that all of the above methods prevent HPV infection. (Table 3)

Table 4: Knowledge of HPV vaccine

Knowledge of HPV vaccine	No. of subjects n=200	Percentage (95%CI)
Do you know HPV Vaccine is available for prevention of cancer of cervix?	178	89% (83.8 – 92.9%)
Do you know that ideal age of giving vaccine to the girls is 9-13 years?	160	80% (73.8 – 85.3%)
Do you know that the vaccine can be given up to 45 years of age?	136	68% (61.1 – 74.4%)
Does the vaccine guarantee 100% protection from cervical cancer?	32	16% (11.2 – 21.8%)
Is HPV vaccine recommended for boys in India? (No)	50	25% (19.2 – 31.6%)

In present study, out of 200 subjects, 178 (89%, 95%CI, 83.8 – 92.9%) subjects knew that HPV Vaccine is available for prevention of cancer of cervix, 160 (80%, 95%CI, 73.8 – 85.3%) subjects knew that ideal age of giving vaccine to the girls is 9-13 years,136 (68%, 95%CI, 61.1 – 74.4%) subjects knew that the vaccine can be given up to 45 years of age, 32 (16%, 95%CI, 11.2 – 21.8%) subjects were aware that the vaccine doesn't guarantee 100% protection from cervical cancer, 50 (25%, 95%CI, 19.2 – 31.6%) knew that HPV vaccine is not recommended for boys in India. (Table 4)

Table 5: Prevention from any of these cancers?

Does the vaccine prevent from any of these cancers?	No. of subjects n=200	Percentage (95% CI)
Ca vagina	38	19% (13.8 – 25.1%)
Ca Vulva	20	10% (6.2 – 15.0%)
Anal cancer	4	2% (0.5 – 5.4%)
Ca Penis	2	1% (0.1 – 3.6%)
Ca Head & neck	2	1% (0.1 – 3.6%)
All of the above	64	32% (25.6 – 38.9%)
Don't know	70	35% (28.4 – 42.0%)

In present study, out of 200 subjects, 38 (19%, 95%CI, 13.8 – 25.1%) subjects knew that HPV vaccine prevents from vaginal cancer, 20 (10%, 95%CI, 6.2 – 15.0%) subjects knew that HPV vaccine prevents from vulval cancer, 4 (2%, 95%CI, 0.5 – 5.4%) subjects knew that HPV vaccine prevents from anal cancer, 2 (1%, 95%CI, 0.1 – 3.6%) subjects knew that HPV vaccine prevents from penile cancer, 2 (1%, 95%CI, 0.1 – 3.6%) subjects knew that HPV vaccine prevents from some head & neck cancers. 70 (35%, 95%CI, 28.4 – 42.0%) subjects didn't know that HPV vaccine prevents from any of above cancers while 64 (32%, 95%CI, 25.6 – 38.9%) subjects knew that HPV vaccine prevents from all of the above cancers. (Table 5)

Table 6: Practices of HPV vaccine

Practices of HPV vaccine	No. of subjects n=200	Percentage (95% CI)
Have you taken the vaccine?	34	17% (12.1 – 22.9%)
Do you want to get vaccinated and will you recommend this vaccine to your family and friends?	184	92% (87.3 – 95.4%)

In present study, out of 200 subjects, only 34 (17%, 95%CI, 12.1 – 22.9%) subjects were vaccinated but attitude towards vaccination was positive. 184 (92%, 95%CI, 87.3 – 95.4%) subjects want to get vaccinated and would like to recommend this vaccine to their family and friends. (Table 6)

Table 7: Reasons for not giving or taking vaccine

Reasons for not giving or taking vaccine	No. of subjects n=200	Percentage (95% CI)
Not sexually active	2	1% (0.1 – 3.6%)
Lack of awareness	36	18% (12.9 – 24.0%)
High cost	38	19% (13.8 – 25.1%)
Fear of side effects	4	2% (0.5 – 5.0%)
Doubt efficacy	2	1% (0.1 – 3.6%)
No reason	118	59% (51.8 – 65.9%)

In present study, out of 200 subjects, majority i.e., 118 (59%, 95%CI, 51.8 – 65.9%) had no reason of not getting vaccinated, 38 (19%, 95%CI, 13.8 – 25.1%) didn't get vaccinated due to high cost of vaccine, 36 (18%, 95%CI, 12.9 – 24.0%) didn't get vaccinated due to lack of awareness, 4 (2%, 95%CI, 0.5 – 5.0%) didn't get vaccinated due to fear of side effects, 2 (1%, 95%CI, 0.1 – 3.6%) didn't get vaccinated due to doubtful efficacy while 2 (1%, 95%CI, 0.1 – 3.6%) didn't think of getting vaccinated as they thought not necessary being not sexually active. (Table 7)

Discussion

In present study, all 200 female subjects were in the age group 21-24 years from final M.B.B.S. & those doing internship.

Costa A et al found that 61.7% (321) students were in 1st, 2nd and 3th year of medical study. 38.2% (199) were in 5th and 6th year of medical study.⁸

Jenitha B et al found that 300 medical students belonged to final year part 1 and 2. Their age ranged between 20-23 years. The mean age was 21.4. 46.6% were males. Females were (N= 160) 53.4%.⁹

In present study, out of 200 subjects, 144 (72%, 95%CI 65.2 – 78.1%) subjects knew that cancer of Cervix is the leading cause of death in India, 190 (95%, 95%CI, 90.9 – 97.6%) subjects knew that HPV infection is the main reason for Cervical cancer while 186 (93%, 95%CI 88.5 – 96.1%) subjects knew that HPV infection is sexually transmitted. (Table 2)

Hoblidar S et al found that in Group A, 109 (52.65%) knew that HPV infection is sexually transmitted. In all other 3 groups this awareness was less than 50%. 123 (73.65%) in Group B, 47 (52.80%) in Group C and 41 (71.92%) in group D did not know that HPV infections are sexually transmitted. The difference in this knowledge among medical and paramedical students was 109 (52.65%) and 102 (32.58%) respectively. The P value was <0.0001.¹⁰

In present study, out of 200 subjects, majority i.e.,170 (85%, 95%CI, 79.3 – 89.6%) knew that use of condom prevents HPV infection, 40 (20%, 95%CI 14.7 – 26.2%) subjects knew HPV vaccine to prevent HPV infection, Positive point in our study was 144 (72%, 95%CI 65.2 – 78.1%) knew that all of the above methods prevent HPV infection. (Table 3)

Hoblidar S et al found that in Group A 94 (45.41%) students knew that HPV infection can be prevented. 26 (15.56%) in Group B, 28 (31.46%) in Group C and 7 (12.28%) in Group D were aware that HPV infections can be prevented. P-value was < 0.00001, statistically significant. Only 71 (13.65%) of knew that HPV

infection can be prevented with vaccination. Students in Group A were better aware. Vaccination as the mode of prevention was known to 39 (18.84%) in Group A, 13 (7.78%) in Group B, 15 (16.85%) in Group C and 4 (7.01%) in Group D.¹⁰

In present study, out of 200 subjects, 178 (89%, 95%CI, 83.8 – 92.9%) subjects knew that HPV Vaccine is available for prevention of cancer of cervix, 160 (80%, 95%CI, 73.8 – 85.3%) subjects knew that ideal age of giving vaccine to the girls is 9-13 years, 136 (68%, 95%CI, 61.1 – 74.4%) subjects knew that the vaccine can be given up to 45 years of age. (Table 4)

Pandey D et al found that awareness of HPV vaccine was 75.6% (n=467). 83% females & 65.7% males were aware of vaccine. (p<0.001). The awareness of vaccine was more in the group exposed to clinics (71.8% for control versus 80.1% for test group; p=0.017).¹¹

In present study, out of 200 subjects, 38 (19%, 95%CI, 13.8 – 25.1%) subjects knew that HPV vaccine prevents from vaginal cancer while 64 (32%, 95%CI, 25.6 – 38.9%) subjects knew that HPV vaccine prevents from all of the above cancers. (Table 5)

In present study, out of 200 subjects, only 34 (17%, 95%CI, 12.1 – 22.9%) subjects were vaccinated but attitude towards vaccination was positive. 184 (92%, 95%CI, 87.3 – 95.4%) subjects want to get vaccinated and would like to recommend this vaccine to their family and friends. (Table 6)

Sharma C et al found that out of the 143 female students, only 15 participants had received the HPV vaccination. The willingness to get the vaccine was 88%.¹²

Choudhary G et al found that 6.25% students were vaccinated.¹³

Wander lay MDS et al found vaccination acceptance rate of 10% in a medical college of India.¹⁴

Mehta et al found that the willingness to accept vaccine was 66.8%.¹⁵

Kamini et al found that 96.5% respondents agreed to recommend the vaccine to others.¹⁶

In present study, out of 200 subjects, majority i.e., 118 (59%, 95%CI, 51.8 – 65.9%) had no reason of not getting vaccinated, 36 (18%, 95%CI, 12.9 – 24.0%) didn't get vaccinated due to lack of awareness. (Table 7)

Tripathy S et al found only 4.1% of the students vaccinated. 36.1% of students were ready for vaccination. Majority of students (68.9%) said that there is no need of routine vaccination as sexual exposure occurs at late stage of life in India. 31.1% students felt the need for routine vaccination to young population.¹⁷

Conclusion

We conclude that the medical students had appropriate and up to date knowledge about HPV and the available vaccination. Practice of vaccination was less but their attitude towards vaccine was a positive one.

If the students are themselves vaccinated, they can promote its awareness in general public.

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