

Original Research Article

Knowledge and practices towards cervical cancer prevention and HPV vaccination among MBBS graduates

Kanika Bansal*, Ravish Ranjan, Meena Rajput, Shiba

Department of Community Medicine, Pt. B.D. Sharma PGIMS, Rohtak, Haryana, India

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*Correspondence:

Dr. Kanika Bansal,

E-mail: bansalkanika7.kb@gmail.com

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ABSTRACT

Background: Cervical cancer is the fourth most common cancer in women worldwide and second most common cancer in Indian women. Three vaccines against HPV have been approved by WHO. As preventing cancer with the help of a vaccine is a new concept, awareness and education will have important implications in its implementation. This study was done with objective to assess the knowledge and practices of cervical cancer prevention and HPV vaccination among MBBS graduates.

Methods: It was descriptive, cross-sectional study conducted in Intern hostel, Pt B D Sharma PGIMS, Rohtak on 211 MBBS graduates, who were completing their internship in December 2018. A pretested, structured, self-administered questionnaire was used as study tool.

Results: 73.27%, 76.24% and 97.03% answered correctly that smoking, early marriage and multiple sexual partners are risk factors of cervical cancer, respectively whereas 96.04% study participants were aware that cervical cancer is a preventable disease and 93.07% participants were aware that a vaccine is available for it in India. 60.40% felt that insufficient information was biggest obstacle in HPV vaccination. 44.55% study participants had recommended HPV vaccination to patients whereas only 8.9% had been vaccinated themselves. Female study participants were found to be practicing HPV vaccination significantly more than their male counterparts.

Conclusions: A good percentage of MBBS graduates had knowledge about various aspects of HPV, however knowledge may not translate into practice. So, Continued education and reinforcement of knowledge is the need of the hour.

Keywords: Cervical cancer, HPV, Risk factors, Vaccination

INTRODUCTION

Cervical cancer is the fourth most common cancer in women worldwide and second most common cancer in Indian women. According to Globocan 2018, 569,847 new cases and 311,365 deaths due to cervical cancer occurred in the world in 2018, out of which, 96,922 women were newly diagnosed and 60,078 deaths occurred in India alone.¹ Cervical cancer is caused by sexually acquired infections with certain types of Human Papillomavirus (HPV) which are found in more than 95%

of the cervical cancers.¹ The two high-risk types are HPV 16 and 18 which account for 75-80% of cervical cancers and pre-cancerous lesions.² Low-risk HPV types 6 and 11 cause almost all cases of genital warts.³

HPV as etiologic agent of cervical cancer is also evident from the fact that incidence and mortality have declined markedly in the last 40 years in most industrialized countries, mainly as a result of extensive screening programmes and vaccination against HPV.¹ HPV infection is also associated with cancers of the anus,

vulva, vagina, penis and oropharynx. Prevention of HPV would reduce the incidence of cervical cancers as well as genital warts, along with the morbidity, mortality and costs associated with these diseases. Three HPV vaccines have been approved by WHO, namely, Cervarix, Gardasil and Gardasil 9, which are available for vaccination worldwide.⁴

As preventing cancer with the help of a vaccine is a comparatively new concept, awareness and education will have important implications in the implementation of this strategy. It should be well understood that the mere availability of an effective vaccine is not synonymous with an effective vaccination program. Healthcare providers in hospitals are front-line personnel providing health education to patients and the general population. They can influence HPV vaccination and health promotion for cervical cancer prevention among women.

Wong et al in a study on Malaysian women reported that during screening, most respondents revealed to have never been approached for cervical cancer prevention and HPV vaccination during their visits to healthcare professionals.⁵ Also, it was reported that they would agree to be screened and vaccinated if this was recommended by their healthcare provider. MBBS graduates will soon be working as health care providers and their knowledge of HPV vaccination and its practice can have a substantial effect on the general attitude of women towards cervical cancer prevention.

Therefore, this study was planned to assess the knowledge and practices of cervical cancer prevention and HPV vaccination among MBBS graduates. We chose fresh medical graduates for the simple reason that in a few years they will be established as practicing clinicians, and will be sought by the population as the first line sources of information and can play a pivotal role in spreading awareness amongst a wide range of population.

METHODS

This cross-sectional study was conducted in Pt. B. D. Sharma PGIMS Rohtak, a tertiary care hospital and medical college in the Indian state of Haryana. A list of MBBS graduates completing the internship training program in December 2018, was obtained from the Dean office of the institute. All 211 MBBS graduates were included in the study, with every effort made to contact each one of them over a period of 2 months (November-December 2018). As the study participants were posted in different departments at the time of the study, data was collected in batches by visiting each speciality separately. Repeated visits were made to contact those who could not be included in the first visit.

A pretested, structured, self-administered, 25-item questionnaire was designed to assess the study participants regarding their knowledge of cervical cancer's risk factors and prevention, knowledge regarding

HPV vaccine administration protocol, its beneficiaries, practice of HPV vaccination and basic information concerning the participants. Informed consent was taken after explaining the purpose and protocol of the study. The research tool was provided to each study participant and they were asked to mark their responses. Out of 211, 5 study participants refused to give informed consent and 4 did not complete the questionnaire. The data of rest 202 study participants was entered in MS Excel and analysed using SPSS.

RESULTS

A total of 202 study participants completed the questionnaire, among whom 104 (51.49%) were males and 98 (48.51%) were females. 20.79% participants were aged ≥ 25 years and 79.21% were < 25 years old. Only 2.97% study participants were married while the rest 97.03% were unmarried.

Knowledge regarding risk factors of cervical cancer

62.38% study participants were aware of the age group at risk of cervical cancer. 73.27%, 76.24% and 97.03% answered correctly that smoking, early marriage and multiple sexual partners are risk factors of cervical cancer, respectively. 67.33% knew that early age at the time of first pregnancy increased the risk of cervical cancer. On the other hand, only 55.45% were aware of repeated pregnancies being a risk factor (Table 1).

Table 1: Knowledge among participants about risk factors and prevention of cervical cancer (n=202).

Risk factor	N (%)
Age group at risk	126 (62.38)
Smoking	148 (73.27)
Early marriage	154 (76.24)
Multiple sexual partners	196 (97.03)
Early age at first pregnancy	136 (67.33)
Repeated pregnancies	112 (55.45)
Prevention	
Is cervical cancer preventable	194 (96.04)
Good personal hygiene	182 (90.1)
Using condoms	134 (66.34)
Is there a vaccine for cervical cancer in India	188 (93.07)

Knowledge regarding prevention of cervical cancer

96.04% study participants were aware that cervical cancer is a preventable disease and 93.07% participants were aware that a vaccine is available for it in India. 90.1% study participants knew that cervical cancer can be prevented by good personal hygiene whereas 66.34% answered that it can be prevented by using condoms (Table 1).

Knowledge about HPV vaccine administration and eligibility of beneficiaries

65.35% study participants knew the correct age group for initiation of HPV vaccination and 86.14% were aware of the number of doses required.

Table 2: Knowledge about HPV vaccine administration and eligibility of beneficiaries (n=202).

Question	Correct answer given by
Age group for initiation	132 (65.35%)
Number of doses	174 (86.14%)
Both boys and girls should be vaccinated against HPV	80 (39.6%)
Can be given to married/ sexually active girls	128 (63.37%)
Can prevent against genital warts	138 (68.32%)
Can prevent against cancers other than cervical cancer	90 (44.55%)
Can be administered to individuals already infected with HPV	68 (33.66%)
Screening of Cervical Cancer required even after vaccination	144 (71.29%)

68.32% were aware that HPV vaccination can prevent genital warts whereas only 44.55% knew that it can prevent other cancers, also. 63.37% students were aware that it can be given to married/ sexually active girls whereas only 39.6% and 33.66% answered correctly that it can be administered to boys and individuals already infected with HPV, respectively. A good number of study participants (71.29%) were aware that cervical cancer screening is required even after vaccination (Table 2).

Barriers to HPV vaccination

Maximum (60.40%) study participants felt that insufficient information was the biggest obstacle in HPV vaccination, while 10.89% thought that the vaccine is not required. 8.90% felt that cost of vaccine is the biggest barrier and another 8.90% had concerns regarding the effectiveness of the vaccine. 7.92% felt hesitant in talking about it whereas only few (2.97%) feared its side effects (Figure 1).

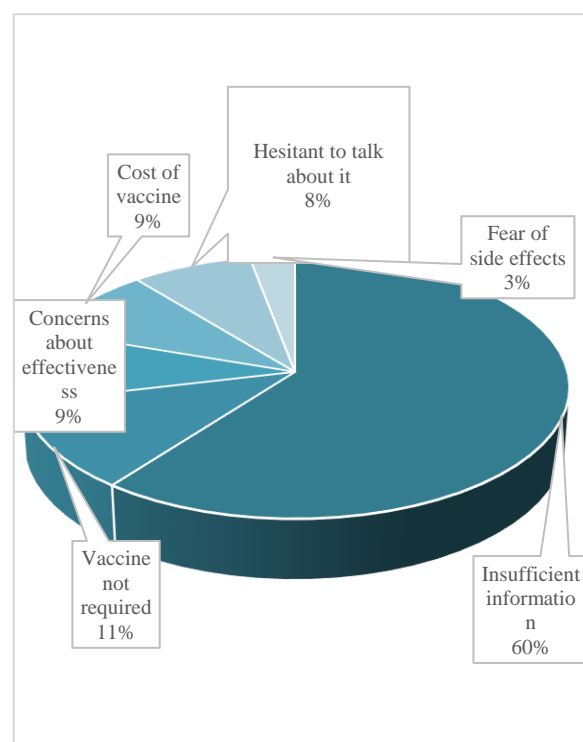


Figure 1: Barriers to HPV vaccination

Table 3: Practice of recommending HPV vaccination among the study participants (n=202).

Practice / marital status	Unmarried (n=196)	Married (n=6)	Total (n=202)	P value
Recommended HPV vaccination to patients	88 (44.9%)	2 (33.3%)	90 (44.55%)	0.649
Recommended HPV vaccination to family/friends	73 (37.24%)	1 (16.7%)	74 (36.63%)	0.418
Themselves been vaccinated	17 (8.67%)	1 (16.7%)	18 (8.91%)	0.433
Practice / Gender	Males (n=104)	Females (n=98)	Total (n=202)	P value
Recommended HPV vaccination to patients	38 (36.54%)	52 (53.06%)	90 (44.55%)	0.018**
Recommended HPV vaccination to family/friends	30 (28.85%)	44 (44.9%)	74 (36.63%)	0.018**
Themselves been vaccinated	1 (0.96%)	17 (17.35%)	18 (8.91%)	0.000**
Knowledge/ Gender	Males (n=104)	Females (n=98)	Total (n=202)	P value
Is cervical cancer preventable	98 (94.23%)	96 (97.96%)	194 (96.04%)	0.174
Is there a vaccine for cervical cancer in India	94 (90.38%)	94 (95.92%)	188 (93.07%)	0.122
Age group for initiation	70 (67.31%)	62 (63.27%)	132 (65.35%)	0.546
Number of doses	82 (78.85%)	84 (85.71%)	166 (82.18%)	0.865
Can be given to married/sexually active girls	60 (57.69%)	62 (63.27%)	122 (60.4%)	0.977
Can be administered to individuals already infected with HPV	32 (26.92%)	36 (36.73%)	68 (33.66%)	0.37

**statistically significant at p value <0.05

Practice for recommending HPV vaccination

90 (44.55%) study participants had recommended HPV vaccination to patients. 74 (36.63%) had recommended it to family or friends, whereas only 18 (8.9%) had been vaccinated themselves as depicted in Table 4. Marital status was found to have no statistically significant association with practice of HPV vaccination. Female study participants were found to be practicing HPV vaccination significantly more than their male counterparts although there was no statistically significant association between gender and knowledge of the subject (Table 3).

DISCUSSION

In the present study, percentage of male and female study subjects was almost equal. Studies by Pandey et al, Almazrou et al and Yam et al observed similar gender distribution of study subjects.⁶⁻⁸ Knowledge about early marriage, early age at first pregnancy and repeated pregnancies being risk factors of cervical cancer was 76.24%, 67.33% and 55.45%, respectively, in the present study, which was similar to the study by Shah et al i.e. 71.19%, 73.9% and 62.3%, respectively (Table 1).⁹ In the current study, 96.04% study subjects knew about the preventable nature of cervical cancer which was similar to the studies by Pandey et al (88.8%) and Almazrou et al (94.22%).^{6,7} The fact that good personal hygiene and condoms prevent cervical cancer was known to 90.1% and 66.34% study subjects, respectively which was similar to Shah et al study i.e. 82.6% and 85.5%. 93% study subjects were aware that a vaccine for cervical cancer is available in the country which was similar to findings by Pandey et al (80.1%), Chawla et al (81%), Almazrou et al (84.39%) and Yam et al (86.6%).⁶⁻¹⁰ In contrast, Das et al found lower awareness regarding availability of cervical cancer vaccine i.e. 75%, probably, because they carried out their study among medical students from all four professional years of MBBS who may be less aware of the practical situation of the vaccine in comparison to fresh MBBS graduates who have completed their internship training (Table 1).¹¹

In the present study, 65.35% study participants knew about the age group for initiation of HPV vaccination and 86.14% answered correctly the number of doses of the vaccine required. 68.32% and 44.55% were aware that HPV vaccination can prevent against genital warts and cancers other than cervical cancer, respectively (Table 2). In accordance with this, Yam et al found that 82.6% senior medical students knew the number of doses needed.⁸ Pandey et al and Das et al found awareness regarding the target population of the vaccine to be 71.8% and 68%, which were similar to the present study.^{6,11} On the other hand, in Swarnapriya et al study, a lower percentage i.e. 52% and 41.2% knew the right age for initiation of vaccination and the number of doses, respectively.¹² Awareness regarding preventive action of the vaccine against genital warts and cancers other than

cervical cancer was also lower than the present study i.e. 15.9% and 8.8%, respectively. This difference in findings may be due to inclusion of BDS as well as paramedical students in their study. Yam et al found that 82.4% study subjects were aware that the vaccine prevents other cancers also, which was higher than the present study.⁸

71.29% study subjects responded that cervical cancer screening is required even after vaccination which was similar to the findings in studies by Pan et al (72.6%) and Almazrou et al (58.96%). In contrast to this, Das et al and Yam et al found a higher percentage of study subjects who were aware of the same i.e. 90.0% and 99.3%, respectively.^{7,8,10,11}

In the current study, knowledge regarding eligibility of boys and individuals already infected with HPV, for vaccination, was found to be only 39.6% and 33.66%, respectively (Table 2). This was similar to the observations of Pandey et al who found 31.4% study subjects to be aware that men needed to be vaccinated and Swarnapriya et al who found 44.4% to be knowing that males should be vaccinated and 31.5% knew that the vaccine can be given to already infected people as well.^{6,12} In contrast, Pan et al found a higher percentage (57.4%) to be aware that boys can be vaccinated.¹³

60.4% study subjects, in the present study, felt that insufficient information is the biggest obstacle to HPV vaccination followed by 10.89% stating that the vaccine is not required. Concerns about effectiveness and cost of the vaccine were each felt as the biggest barrier by 8.9% study subjects (Figure 1). These findings were supported by Pan et al, in whose study, 42.4% study subjects answered insufficient information while concerns about efficacy and high cost were felt as the most important obstacles by 9.2% and 10.1% study subjects, respectively.¹³ Similarly, in a study by Pandey et al, maximum (56.7%) answered inadequate information as the most important problem in HPV vaccination although worry about efficacy (17.6%) and high cost (21.2%) were chosen by more study subjects.⁶ In Swarnapriya et al study, 14.55% answered that vaccine is not required as there is minimal risk of cervical cancer which was similar to the present study while 30.48% stated doubts regarding efficacy and 21.71% stated cost as the reasons which were higher than the present study.¹² Both of the above studies included four options as opposed to six in the present study as answer choices to the most important barrier to HPV vaccination which may have resulted in higher percentages.

In the current study, 8.9% study subjects had themselves been vaccinated against HPV while 44.55% had recommended it to patients (Table 3). Similar observations were made by Chawla et al, in whose study, 47% had recommended the vaccine to patients. Almazrou et al, Das et al and Swarnapriya et al, also had similar findings with 3.47%, 6.1% and 6.8% vaccinated study subjects, respectively.^{8,11,12}

In the present study, significantly higher number of female participants were found to be recommending HPV vaccination to patients and vaccinated themselves as compared to the male participants (p value 0.018, 0.000), in spite of no statistically significant association being found between gender and knowledge of study subjects (p value 0.174, 0.122, 0.546, 0.865, 0.977 and 0.370) (Table 3). In accordance with this, similar knowledge of cervical cancer prevention and HPV vaccination was found among both the genders in studies by Almazrou et al, Swarnapriya et al and Yam et al.^{7,8,12} Also, Yam et al and Pan et al found acceptability of HPV vaccine to be significantly higher in females as compared to males.^{8,13}

The reason of such findings may be more concern about cervical cancer among female healthcare providers and hesitation in recommending it in their male counterparts due to high social barriers. Also, low level of knowledge regarding boys also needing the vaccine may have resulted in lesser number of male participants getting themselves vaccinated.

CONCLUSION

In conclusion, a good percentage of MBBS graduates had knowledge regarding risk factors of cervical cancer, its prevention, HPV vaccine and its administration. However, knowledge that boys and already infected people are also eligible for vaccination was low. Knowledge may not translate into practice by healthcare providers, in advising the use of HPV vaccines as seen by the gender disparity. Continued education and reinforcement of knowledge is the need of the hour. Also, male healthcare providers should be encouraged to recommend HPV vaccination as a step towards preventing a deadly disease like cervical cancer.

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REFERENCES

1. Globacon. World Fact Sheet: Cervical cancer, 2013. Available at: <https://gco.iarc.fr/today/fact-sheets-cancers>. Accessed on 14 January 2021.
2. Clifford G, Francheschi S, Diaz M, Munoz N, Villa LL. HPV type-distribution in women with and without cervical neoplastic diseases. *Vaccine*. 2006;24(3):26-34.
3. Lacey CJ, Lowndes CM, Shah KV. Burden and management of non-cancerous HPV-related conditions: HPV-6/11 disease. *Vaccine*. 2006;24(3):35-41.
4. WHO. Human papillomavirus vaccines: WHO position paper. 2017; 92:241-68.
5. Wong LP, Wong YL, Low WY, Khoo EM, Shuib R. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. *Singapore Med J*. 2009; 50:49-53.
6. Pandey D, Vanya V, Bhagat S, VS B, Shetty J. Awareness and attitude towards human papillomavirus (HPV) vaccine among medical students in a premier medical school in India. *PLoS ONE*. 2012;7(7):e40619.
7. Almazrou S, Saddik B, Jradi H. Knowledge, attitudes, and practices of Saudi physicians regarding cervical cancer and the human papilloma virus vaccine. *J Infect. Public Health*. 2020;13:584-90.
8. Yam PWA, Lam PL, Chan TK, Chau KW, Hsu ML, Lim YM, et al. A Cross Sectional Study on Knowledge, Attitude and Practice related to Human Papillomavirus Vaccination for Cervical Cancer Prevention between Medical and Non-Medical Students in Hong Kong. *Asian Pac J Cancer Prev*. 2017; 18(6):1689-95.
9. Shah V, Vyas S, Singh A, Shrivastava M. Awareness and knowledge of cervical cancer and its prevention among the nursing staff of a tertiary health institute in Ahmedabad, Gujarat, India. *ecancer*. 2012;6:270.
10. Chawla P, Chawla A, Seema C. Knowledge, attitude and practice on human papillomavirus vaccination: a cross-sectional study among healthcare providers. *Indian J Med Res*. 2014;144:741-9.
11. Das EN, Francis PT. HPV vaccine knowledge and coverage among female students in a medical college, Kerala. *Int J Com Med Public Health*. 2018;5(12):5133-8.
12. Swarnapriya K, Kavitha D, Reddy GMM. Knowledge, Attitude and Practices Regarding HPV Vaccination Among Medical and Para Medical in Students, India a Cross Sectional Study. *Asian Pac J Cancer Prev*. 2015;16(18):8473-7.
13. Pan XF, Zhao ZM, Sun J, Chen F, Wen QL. Acceptability and correlates of primary and secondary prevention of cervical cancer among medical students in Southwest China: implications for cancer education. *PLoS ONE*. 2014;9(10):e110353.

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