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Original research article

Unravelling perceptions and barriers to HPV vaccination among medical students in Guntur Medical College

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Abstract

Background: Cervical cancer is one of the leading cancer in India which is highly preventable. Human papilloma virus (HPV) plays an important role in carcinogenesis and vaccination can reduce the incidence of cervical cancer.
Methods: The present study was a prospective study. All the undergraduate medical students who were willing to participate voluntarily were taken into the study. Online questionnaires were prepared with the help of Google forms and distributed through WhatsApp.
Conclusion: The cervical cancer vaccine uptake is low even among medical students. Medical students should be encouraged to get vaccinated after entering the medical school
Keywords: Cervical cancer, Human papilloma virus, Medical students, Vaccination

Introduction

Cervical cancer is the leading cancer in Indian females and second most common cancer worldwide [1]. Human papillomavirus (HPV) is the major culprit causing cervical cancer, but it can be prevented to some extent by HPV vaccination or early detection by pap smears. Despite the recommendations by the World Health Organization (WHO) and the availability of highly effective and safe HPV vaccines, HPV vaccine is not currently included as part of the national immunization program (NIS) in India [2]. Due to social awkwardness and social stigma, there isn't much discussion about cervical cancer prevention or the consequences of having cancer. Vaccination was less not only among common people but also in the medical students. Increased awareness of HPV vaccination among medical students can lead to several positive outcomes. Firstly, it enhances their knowledge about the importance of vaccination in the prevention of HPV-related cancers, leading a sense of responsibility in advocating for preventive measures. As a medical student, they are more likely to share the knowledge with future patients, promoting broader vaccine acceptance. The topic has been chosen to study the knowledge, perceptions and barriers to cervical vaccination among the medical students.

Materials and Methods

The present study was a prospective observational study conducted at Guntur Medical College on undergraduate medical students over a period of 2 months from November 2023 to December 2023. Approval from the institutional ethics committee was taken, GMC/IEC/19/2023. The inclusion criteria was all the undergraduate medical students who were willing to participate. Exclusion criteria was undergraduate medical students who were not interested to participate. The participants were allowed to voluntarily withdraw from the study at any time. The sample size was calculated based on previous similar studies and it was a minimum of 150 students. A self-administered online questionnaire consisting of 20 questions was prepared with the help of Google forms and circulated in whatsapp groups. A consent form was also included in the same Google form. The questionnaire included questions on the sociodemographic characteristics, knowledge on HPV, cervical cancer, HPV vaccine, personal experience of HPV vaccination and barriers to vaccination. The responses were recorded on a two-point scale (1-Yes, 2-No). Privacy and strict confidentiality were maintained during the entire study.
The answers collected from the Google forms were analyzed using the Statistical Software statistical

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package for social sciences (SPSS) 20.0. Frequencies and percentages were used to describe the sociodemographic characteristics of the participants, knowledge and views on cervical cancer, HPV, HPV vaccine, belief and attitude of students toward HPV vaccination. The data collected was presented in the form of numbers and percentages.

Results

A total number of 215 undergraduate medical students participated in the present study. There were 41 (19.1%) males and 175 (80.9%) females. The age of the students ranged from 17 years to 23 years with the median age being 19.2 years (Table 1). Students from the first year undergraduate course to the final year undergraduate course had participated in the study. There were 53% students from the first year, 34% from the second year, 6% from the third year and 7% of students from the final year.

The major source of awareness of HPV vaccination was school health programmes in 85 (39%) students, media in 60 (28%) students, through family or friends in 47 (22%) students and by doctor's recommendation in 23 (11%) students. 69.8% of the students were not aware of the location where vaccination was given.

Table 1: Age of the students included in the study

Age	17 years	18 years	19 years	20 years	21 years	22 years	23 years
Number	19	49	60	47	30	8	2
Percentage	8.8%	22.8%	27.9%	21.9%	14%	3.7%	0.9%

Table 2: Answers given by students to the questionnaire

S. N0	Questionnaire	Yes	No
1	Have you heard about the HPV vaccine before this survey?	79.10%	20.9%
2	Are you aware that the HPV vaccination is available in our hospital?	75.3%	24.7%
3	Do you think that it is important to get vaccinated?	99.5%	0.5%
4	Do you consider getting vaccinated?	87%	13%
5	Do you know the link between HPV and cervical cancer	53%	47%
6	Did you receive your first dose of vaccination?	9.8%	90.2%
7	Did you receive your second dose of vaccination?	8.4%	91.6%

About 79.10% students were aware of HPV vaccine for cervical cancer. But 75.3% stated that they were not aware of vaccine availability in their area (Table 2). Though majority (99.5%) students agreed to get vaccinated there were certain barriers for HPV vaccination. The major barrier for vaccination was lack of awareness about the source of vaccination in 157 (73%) students, stigma /embarrassment in 46 (21.4%) students and fear of adverse effects in 12 (5.6%) students.

Discussion

HPV vaccination alone or combined with pap screening have been documented as effective interventions in reducing the burden and mortality due to carcinoma cervix. India has high prevalence of cervical cancer and various barriers for HPV vaccination has be identified. In spite of proven efficacy of vaccine, the vaccine intake was very less in India. Knowledge of vaccine in medical students is important as they can not only influence family members/ friends but also the society as they come in contact with them in the hospital settings. The source of awareness of HPV vaccination was predominantly by school health programs similar to Malavika *et al*. (Table 3) and Pandey *et al*. [3, 4]. School health programs have to be reinforced and students should be educated regarding the benefits of early vaccination.

Table 3: Comparison of present study with other studies

S. NO	Questions asked	Present study, 2023 (n=215)	Malavika *et al*. [3] (n=150) 2022
1	Heard of vaccination before? HPV	79.1%	94.67%
2	Source of awareness	1.School health programs -39.5% 2. Media - 27.9% 3.Doctor's recommendations-10.7%	1. School health programs - 41.2% 2. College - 25.7% 3. Media – 0.7%
3	Barriers for vaccination HPV	Lack of awareness and social stigma.	Side effects of vaccination

In another study by Pandey *et al*., 89.6% medical students were aware of the preventable nature of cervical cancer [4]. Most of them knew the reason for cervical cancer was HPV. Only 38.8% of males and 41.4% of females knew that the HPV vaccine required three doses. Overall acceptance of the HPV vaccine was 67.8% in their study which was less compared to the present study.

In a study conducted by Swarnapriya *et al*., out of 957 participants, only 44.9% displayed good knowledge regarding HPV vaccination and only 65% were vaccinated [5]. This is relatively high compared to the present study (9.8%). The major reasons for not getting vaccinated were concerns regarding the efficacy, safety, and cost of the vaccine. They also found that compared to medical

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students, nursing students displayed good knowledge, and dental students had poor knowledge. The myths regarding vaccine side effects should be clarified to the medical students in their early years.

Padmanabha *et al*. found cost to be one of barrier to vaccination after a brief training sessions [6]. According to Thangappah *et al*. the important reasons for not getting vaccinated against cervical cancer was the lack of knowledge regarding the availability of the vaccine, non-availability, fear of side effects and the cost of the vaccine, which were similar to the present study [7].

According to Kreimer *et al*. giving just one dose of HPV vaccine dose instead of two or three doses would reduce the cost and simplify the logistics of vaccination. This would allow more girls to be vaccinated worldwide [8]. Du *et al*. stated that the knowledge of HPV vaccination linearly increased from the first year to the final year, which is a welcoming sign [9].

Mehta *et al*. showed that none of the students knew the correct incidence of cervical cancer in India. Among those students, 18% did not know that HPV vaccination prevents cervical cancer. In many of the students, there is a lack of complete information regarding the dose, dosage, schedule, mechanism of action, and cost of the vaccine, which has to be addressed [10].

Conclusion

Though the importance of HPV vaccination was known to 99.5% undergraduate medical students, only 8.4% of them were vaccinated. The very low numbers of vaccination among medical students was alarming. Remedial measures should be taken to increase vaccination among medical students. They should be taught about HPV infection and Vaccination immediately after entering the medical school in their orientation classes. The myths regarding HPV Vaccination should be busted by the medical teachers and they should be encouraged to get vaccinated. College administrators should inform, not only medical students but all the patients visiting teaching hospitals, regarding availability of HPV vaccinations at their place. The awareness about HPV vaccination was primarily through school health programs which was commendable.

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