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Knowledge, Attitude and Practices Regarding HPV Vaccination among Undergraduate and Postgraduate Dental Students in Chennai

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Authors' contributions

This work was carried out in collaboration among all authors. Author KB managed the analyses of the study, performed the analysis, wrote the protocol and wrote the first draft of the manuscript. Author TL designed the study, managed the literature searches and approved the final manuscript.

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ABSTRACT

Background: It is important for dental students to be aware of the HPV vaccination as they are prone to cervical cancer caused due to HPV 16 and 18. HPV can be transmitted through saliva from the patient's oral cavity to the dentist. To evaluate the knowledge, attitude and practices regarding HPV vaccination among dental students in Chennai.
Materials and Methods: A self-administered questionnaire was prepared to evaluate the knowledge, attitude and practices regarding HPV vaccination. The questionnaire was circulated among 150 students.
Results: 90 students were undergraduates and 60 were postgraduates, $p<0.05$. 72.7% of the students were aware of HPV vaccination. 45.5% of the students were aware that HPV vaccination is administered against cervical cancer. Only 30% of the students were immunised against HPV.
Conclusion: Within the limitations of the study it was found that most of the students were aware of HPV vaccination, although very few were immunised with HPV vaccination.

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Keywords: Cervical cancer; HPV; vaccination.

1. INTRODUCTION

Cervical cancer is one of the most prevailing types of cancers which affects children predominantly in the age of 15 years and older. Women in the reproductive age, which are from 15-49 years have been more prone to cervical cancer which includes the younger population [1]. The mortality rate of the disease has been high due to the identification and treatment of the disease after its advancement [2]. Globally, more than 250,000 women die each year from cervical cancer [3]. Early diagnosis, prevention, and treatment can reduce cervical cancer mortality [4]. Human Papillomavirus (HPV) of types 16 nd 18 have been proven to be the main reason for cervical cancer. The vaccines against type 16 and 18 have been proven to be 90-99% efficient to prevent cervical intraepithelial neoplasia according to the various studies [5]. Even though there has been an advancing study on the role of HPV in cervical cancer with well-developed treatments against it, the knowledge and attitude towards prevention has been minimal [6]. It has also been studied that these interventions also depend on dentists to a very large extent [7].

The growing prevalence of oropharyngeal cancer, precisely oropharyngeal squamous cell carcinoma (OSCC) related with human papillomavirus (HPV), is a major concern for the oral care [8]. The majority of HPV-positive oropharyngeal cancers are related with HPV-16 and HPV-18 that are usually linked with cervical cancer [9]. The ratio of oropharyngeal cancers arising from HPV sites which are classically linked, is substantially high. Age is one of the major risk factors for oral and oropharyngeal cancers along with the utilization of tobacco and excessive alcohol use [10]. Nevertheless, HPV infection is nowadays considered as a validated risk factor for OSCC in both men and women, even in the absence of tobacco and excessive alcohol use [10]. The prophylactic HPV vaccines may reduce OSCC incidence by protecting against HPV-16 and HPV-18 infection [11]. The American Dental Association Council (ADA) on Scientific Affairs encourages dentists to develop themselves and their patients around the relationship between HPV and oropharyngeal cancer. The ADA Council suggests expanding public awareness of the oncogenic potential of some HPV infections [12].

Dentists can play an important role in promoting HPV screening and prevention of cervical cancer. It is also important for the dentists themselves to be aware of HPV vaccination as they are prone to infection through saliva. Dentists with positive knowledge, attitude and practices can help prevent cervical cancer. Hence, this study aims to evaluate the knowledge, attitude and practices regarding HPV vaccination among dental students in Chennai.

2. MATERIALS AND METHODS

2.1 Data Collection

A cross sectional study was conducted among dental undergraduates and postgraduates. It was an online questionnaire based study, conducted to evaluate knowledge, attitude and practices regarding HPV vaccination among dental students in Chennai. 150 dental undergraduates and postgraduates participated in this study. Simple random sampling was done. The data collection was done via Google forms. The study was conducted in May 2020. The inclusion criteria were dental undergraduate and postgraduate students and exclusion criteria were teaching faculties. The study population age group varied from 20-years. Mean age of the study was found to be 23.6 years.

2.2 Survey Instrument

A pretested, self administered, closed-ended questionnaire comprising the following sections formed the survey instrument. A structured questionnaire containing 12 questions which was adopted from a validated questionnaire developed by the World Health Organisation. The goal of developing this questionnaire was to know about the knowledge, attitude and practices regarding HPV vaccination among dental students in Chennai.

2.3 Data Analysis

The data collected was entered in an Excel sheet and subjected to statistical analysis using SPSS software Version 23. Chi square test was done. The independent variables are age and gender while dependent variables are knowledge, attitude and practices regarding HPV vaccination among dental students in Chennai. The level of significance was set at $p<0.05$.

3. RESULTS AND DISCUSSION

In this survey, a total of 90 undergraduate students and 60 postgraduate students

answered the survey. Out of 90 undergraduate students, 72 were females and 18 males and out of 60 postgraduate students, 38 were females and 22 were males. P value is 0.024, hence statistically significant (Fig. 1).

From the survey that was conducted, the following conclusions can be drawn. A fairly large number of dentists agreed that they knew what HPV vaccination was, which was about 72.7%. Only a little more than half the population was aware of the expansion of HPV. Majority of the participants agreed to the fact that HPV is administered against cervical cancer and an equal number of people opted for genital warts and laryngeal papilloma and none chose penis carcinoma. About 36.4% of the dentists surveyed feel that pregnancy is a contraindication for HPV and 63.6% felt that it can be administered to people who are already infected. Only about 27.3% of the dentists opted IM as the mode of administration. 36.6% of the dentists felt that the vaccine should be administered at the age of 10-25 years although a little less than half the population felt that it was from 1-10 years. About 40% of the dentists were not HPV immunised and 45.5% were not willing to get administered. More than half the dentists feared the side effects of the vaccination caused. About 54.5% of the dentists were aware of the number of doses to be administered and the required time interval for the subsequent doses (Table 1).

In a study conducted by Mann *et al.* it was studied that although the majority in both groups

Table 1. Questionnaire and the percentage of response

Questions	Percentage of response (%)
1.Do you know what a HPV vaccination is? Yes / No	Yes- 72.7% No- 27.3%
2.What is the expansion of HPV?	Human papilloma virus-54.5% Human polio virus-18.2% Others-27.3%
3.HPV vaccination is administered against – cervical cancer / laryngeal papilloma / Genital warts / carcinoma Penis	Cervical cancer-45.5% Laryngeal papilloma-27.3% Genital Warts- 27.2%
4.Is pregnancy a contraindication for HPV? Yes / No / Not sure	Yes-27.2% No-36.4% Not sure –36.4%
5.Can HPV be administered to people who are already infected with the disease ? Yes / No / Not sure	Yes-63.6% No-16.8% Not sure-19.6%
6.How is HPV administered? IV/IM/ SC/ oral	IV-36.6% IM-27% SC-9.1% Oral -27.3%
7.Which age group should this vaccination be Given to ? 1-10 years / 10-25 years / more than 25 years	1-10 yrs-45.5% 10-25 yrs-36.3% More than 25 yrs-18.2%
8.Are you HPV immunised ? Yes/ No/ Not sure	Yes-30% No-40% Not sure-30%
9.Are you willing to take HPV vaccination ? Yes / No	Yes-45.5% No-45.5% Not sure-9%
10.If not willing to take , why ? Efficacy of the vaccination / fear of side effects / cost / minimal risk of cervical cancer / no reasons	Efficacy-9.1% Fear of side effects-54.5% Minimal risk of cervical cancer-18.2% No reasons-18.2%
11. Do you know how many doses of the vaccine should be given?	Yes-54.5% No-45.5%
12. Do you know after what time interval the next dose, should be given if more than one?	Yes-54.5% No-45.5%

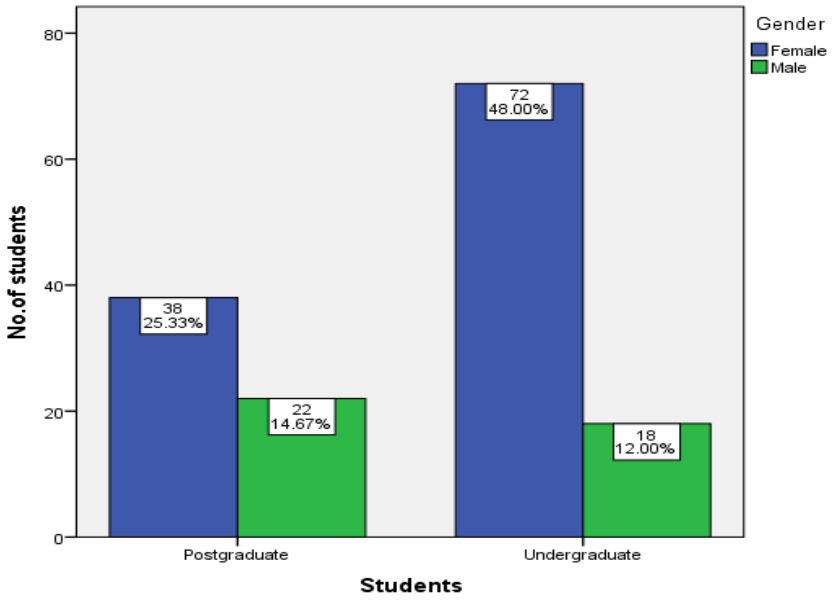

Fig. 1. Percentage of response

agreed vaccines were effective (~97%), significantly fewer dental students agreed they were safe [13]. Although one recent study found that further education and training would improve willingness of dental providers to discuss and recommend HPV vaccination, previous work from the same group found dental student knowledge, awareness and willingness may be more malleable than established dental providers [14–16]. It was also found that the awareness among dental students was comparatively lesser than postgraduate students which may be due to the increased experience according to Mann et al. '[13]. In a study conducted by Tan et al. and Rashwan et al. , it was found that most of the students had a positive attitude towards HPV vaccination as they were aware of cervical cancer and its prevention which was found to be contradictory to the present age [17,18]. Similar to the results of the present study, it was found that refusal for vaccination was lack of knowledge among students and efficacy of the vaccine raised doubts due to its increased cost in various other studies [18–21]. However the efficacy and safety of HPV vaccines have already been established and this should be highlighted during educational and awareness programs [22,23]. Many studies which were conducted in India, have concluded that the HPV was the causative factor for 95% of cervical cancer and only 30% of inflammatory lesions [24]. Adequate measures taken to prevent HPV infection can also reduce the risk of cervical cancer. HPV vaccination is not administered to the people to prevent cervical cancer. The number of people who take up this vaccine has been very less in developing countries like India [25]. In many studies it has been found that the acceptance rate for the administration of the vaccine has been almost 70-100% which includes even men [26,27]. It is of utmost importance to educate the health care professionals on HPV as this can increase the uptake of the vaccination [28]. It's also necessary for the government to take adequate measures to eradicate HPV infection [18]. The limitations of the present study is that it is conducted in a University setting with a smaller population.

4. CONCLUSION

Within the limitations of the study it was found that most of the students were aware of HPV vaccination, although very few were immunised with HPV vaccination. From this study, we can appreciate the knowledge , attitude and practices regarding HPV vaccination among undergraduate and post-graduate dentists in Chennai which is very important to dentists as they are healthcare providers. Awareness of the vaccination can be improved by conducting seminars and educational programmes and vaccination programmes can be conducted for the students.

CONSENT AND ETHICAL APPROVAL

Ethical approval was obtained from the Institutional Ethical Committee and consent from the students was obtained.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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