ORIGINAL RESEARCH

Assessment of HPV Awareness and Vaccination Uptake Among Medical Students in Davangere

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ABSTRACT

Background: Cervical cancer is fifth most common cancer worldwide and second most common cancer in women in India, with an incidence of 1,22,844 cases and accounts for over 67,477 deaths annually (GLOBOCON 2012). Although vaccines are available to prevent the cervical cancer but there is lack of awareness regarding the same. Hence the present study has been proposed. **Objectives:** To study the awareness of human papilloma virus (HPV) vaccination among the medical students. **Methods:** A cross-sectional study was conducted between Jan - March 2017 among the medical students. All those who gave consent were included and a predesigned, pretested pro-forma consisting of variables about demographic characteristics, HPV, vaccination and the other necessary information required for the study was collected. **Results:** 72.4% of the participants were aware of the HPV infection, 70.5% about the HPV vaccination and 69.5% of the participants thought that only females should be vaccinated. 52.3 % of the participants expressed interest for vaccination. Interns had 100% awareness about the infection and vaccination. students who were not interested in vaccination, 18.9% of them said they are not sexually active, 8.5% thought there was no need of vaccine, 6.1% felt vaccine is too expensive and 1.3% worried about the safety of the vaccine. Sources of information was mainly through lectures/textbooks (64.8%) followed by doctors/healthcare facility (20.9%). **Conclusion:** study revealed appreciable level of awareness among the participants. With this study, the participants are encouraged to get vaccinated as the age group of participants is appropriate for the vaccination.

Keywords: HPV awareness, Medical students, cervical cancer, HPV vaccination.

INTRODUCTION

The worldwide incidence of cervical cancer is approximately 5,10,000 cases annually, with approximately 2,88,000 deaths worldwide.[1] Cervical cancer is the second most common cancer in women in India, with an incidence of 2 per 10,00 population in 2014 and accounting for over 67,477 deaths annually.[2] More developed and less developing countries bear 16% and 84.3% of the global cervical cancer burden respectively (WHO, 2010).

The awareness of HPV vaccination among medical students was 95% in Belgium where as the same was found to be 75.6% in Manipal (Karnataka) and 54.5% in vishakapatnam (Andra Pradesh).The high risk type HPV-16 and 18 contribute over 70% of all cervical cancer cases whereas the non-oncogenic HPV serotypes 6 and 11 contributes over 90% of benign genital infections such as genital warts.[3] Vaccination against HPV is an important mode of primary prevention against cervical cancer as it is one of those risk factors that can be prevented.[4]

Two types of recombinant vaccines against HPV have been approved for use in India, marketed as Gardasil (quadrivalent) and Cervarix (bivalent) the efficacy of which is 100% and 90% respectively.[5] The FUTURE trials have demonstrated an efficacy of both as 91-100%.[6] Though there have been concerns regarding the safety of these vaccines in India, The World Health Organization, Food and Drug Administration, Centre for Disease Control and Global Advisory Committee on Vaccine Safety have all confirmed and declared that the vaccine is safe and effective.[7-9]

The HPV vaccine is recommended by the Indian Academy of Paediatrics and Federation of Obstetric and Gynaecological Societies of India for all females who can afford the vaccine.[5]

Despite of this, the availability of the vaccine is hardly known and seldom utilized. There are a number of reasons for this, main reasons being lack of awareness-about the relationship of HPV with cervical cancer and about the availability of the vaccine, high costs and recent unproved controversies stating that these vaccines have had adverse side effects.[10]

As preventing cancer with the help of a vaccine is a comparatively new concept, awareness and education will have important implication in the implementation of this strategy. We intend to conduct study among medical students as they will be the practicing clinicians in future and will be sought by the population as the first line information resources and can play a pivotal role in spreading awareness among a wide range of population, hence the present study has been proposed.

METHODS

An observational cross-sectional study was conducted from January - March 2018 to estimate the level of awareness of HPV vaccination among medical students S. S. Institute of Medical sciences & Research Centre (SSIMS & RC). All the medical students and interns of SSIMS & RC who gave consent for the study were included as study participants. Those who did not wish to participate and those students who could not be contacted even after 3 attempts were excluded. A predesigned, pretested questionnaire was given to the students which consisted questions related to socio-demographic characteristics, HPV infection & HPV vaccination.

OBJECTIVES

- To estimate the level awareness of Human Papilloma Virus and Vaccination among the Medical students of SSIMS & RC, Davangere.
- To estimate the level of acceptance of HPV vaccine among the medical students.

The undergraduate (UGs) students were contacted after the theory classes and were given a self-administered questionnaire. Similarly, the questionnaire was got filled by interns during their posting hours in each department. A duration of 10-15 minutes was given to fill the questionnaire. After the data collection was complete, we received 525 filled proformas and were analysed. Confidentiality of the participants was ensured. Once we finished our data collection, we organised a small session in each class in respective year regarding the HPV vaccination, at the end of the awareness session within a week we received interest from few of the participants to get vaccinated. In April we conducted the vaccination session for the interested students and planned for the next session after 1-2 months after the first dose. Approval from the institutional ethical and review board was obtained before conducting the study.

Statistical analysis: All the data collected was entered in Microsoft Office 2013 Excel and analyzed using SPSS (17.0), results are presented as percentages and proportions.

RESULTS

Table 1: Demographic characteristics of the participants (n=525)

Variable	Frequency	Percentage
Gender		
Male	244	46.5
Female	281	53.5
Age group(years)		
17-19	276	52.6
20-22	178	33.9
23 & above	71	13.5
Marital status		
Married	0	0
Unmarried	525	100.0

The above table depicts that the present study consisted of 525 participants. There were 53.5% of female medical students in the study, none of the participants were married at the time of our study and more than half the participants (52.6%) were aged between 17-19 years.

Table 2: Composition of the study participants among the participants (n=525)

Year	Male	Female	Total	%
1st year	57	93	150	28.6
2nd year	50	57	107	20.4
3rd year	62	50	112	21.3
Final year	51	26	77	14.7

Interns	24	55	79	15.0
Combined	244(46.5%)	281(53.5%)	525	100.0

As presented in the table 2, majority of the participants were from first academic year i.e., 28.6% (150-full strength), followed by 3rd academic year (21.3%), 2nd year (20.4%), least was from final year students (14.7%), and interns constituted about 15% of the participants.

Table 3: Awareness of HPV infection and Vaccination among the participants (n=525)

HPV INFECTION	Male	Female	Total correct responses	%
Can the HPV cause cervical cancer?	182	198	380	72.4
How is the HPV virus transmitted?	108	128	236	45.0
What are the carcinogenic strains of HPV?	11	37	48	9.1
Can HPV may infect both, men & women?	142	208	350	66.7
What are the diseases caused by HPV?	25	16	41	7.8
HPV VACCINATION				
Can cervical cancer be prevented by a vaccine?	167	203	370	70.5
Is the HPV vaccine available in India?	171	176	347	66.1%
Is HPV vaccine part of a national program?	60	57	117	22.2
Do you know the schedule/Dose of HPV vaccine?	79	112	191	36.3
Recommended age for vaccination?	75	94	169	32.2
Strains against which vaccine protects?	15	32	47	8.9
Do women have to get tested prior vaccination?	37	81	118	22.4
Can vaccine be given to sexually active women?	105	122	227	43.3
Can vaccinated women get CA cx?	70	68	138	26.3
Does vaccine protect against already infected?	107	121	228	43.5
Does HPV vaccine protect against other diseases?	60	84	144	27.4
Does vaccinated women have to get screened?	63	100	163	31.1
Is HPV vaccine safe?	114	135	249	47.4
What is the efficacy of HPV vaccine?	97	58	155	29.5

As shown above it was known to 70.5% of the participants that cervical cancer can be prevented by HPV vaccine, 66.1% of the students were aware of the availability, the correct schedule/dosage of vaccination was known to 36.3% and only 29.5% were aware about the efficacy of the vaccine.Only correct responses obtained from the participants regarding the HPV infection and HPV vaccination are presented in the above table. Out of the 525 total participants 380 students (72.4%) were aware that HPV infection as causal factor for cervical cancer, 45% of the students knew how the HPV virus transmitted, 9.1% knew about the carcinogenic strains, 66.7% knew that both the genders could be affected and 7.8 % were aware of the diseases caused by human papilloma virus.

Table 4: Awareness regarding HPV vaccination among the participants (n=525)

		Who should be vaccinated?				
Response by the participants	**Gender**	**Males n(%)**	**Females n(%)**	**Both n(%)**	**Don't know n(%)**	**Total n(%)**
	Boy students	6(2.5)	156(63.9)	43(17.6)	39(15.9)	**244(100)**
	Girl students	12(4.3)	209(74.4)	41(14.6)	19(6.7)	**281(100)**
	Total	**18(3.4)**	**365(69.5)**	**84(16.0)**	**58(11.0)**	**525**

As depicted above, when asked about who should be vaccinated, 69.5% of the participants opined that only females should be vaccinated, and only 19.4% of the participants opined that men also have to be vaccinated. Out of the 244 boys participated in the study 6 students responded as only males should be vaccinated, 156 boys said only females should be vaccinated whereas 43 boys said both male and females should be vaccinated as both genders get infected by HPV infection, rest of the boys didn't know the answer. Similarly, among the 281 girls took part in the study 12 girls said only males should be vaccinated, 209 girls responded as only females, whereas 41 girls correctly answered as both genders should be vaccinated and rest of the participants didn't know the answer for the same.

Table 5. Comparison of awareness of HPV and Vaccination among undergraduates and interns.

		UNDERGRADUATES (n=448)	INTERNS (n=79)	Total (n=525)
HPV INFECTION	**Know**	301(67.2%)	79(100%)	380
	Don't know	147(32.8%)	0(0)	147
VACCINE	**Know**	291(64.9%)	79(100%)	380

	Don't know	157(35.1%)	0(0)	157

It was seen in the study that awareness regarding HPV infection and vaccination was 100% among the interns where as it was 67.2% and 64.9% respectively among the undergraduates. (Table 5)

Table 6: Attitude and Practice of medical students towards HPV vaccination

Attitude and Practice	Male	Female	Total	% out of n=525
Would you vaccinate self against HPV?	55(20%)	220(80%)	275	52.3
Would you encourage family/friends to be vaccinated against HPV?	157(47.9%)	171(52.1%)	328	62.5

Acceptance of self-vaccination against HPV infection was seen in 52.3% of the participants, among which 20% of the male participants and 80% female students expressed their interest. Similarly, 62.5% of the participants positively responded as they would encourage their family members to get vaccinated. Out of the 220 girls who expressed their interest in vaccination only 38(17.3%) members got the vaccination conducted at the end of the study. (Table 6)

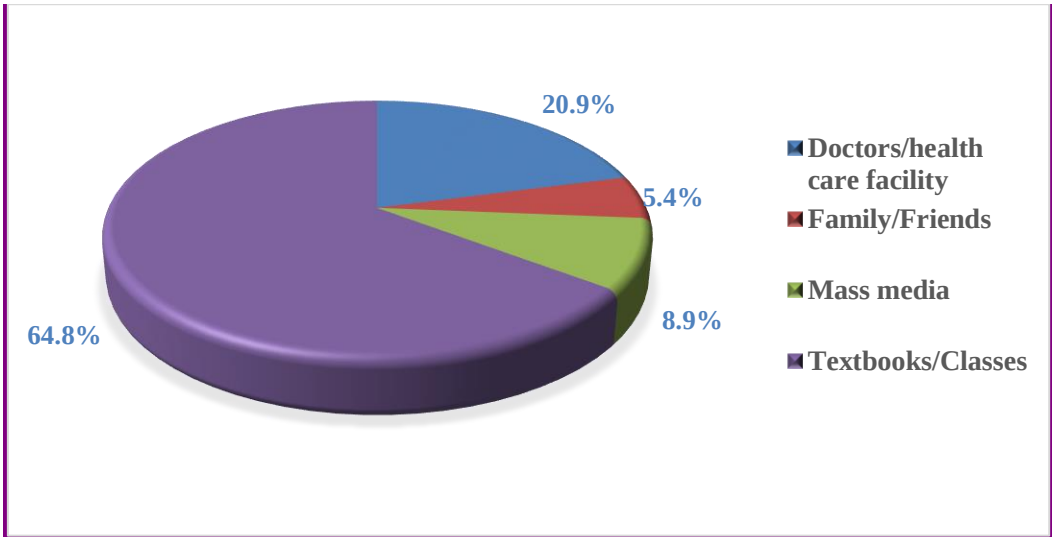

Figure 1. Sources of information regarding the HPV vaccination.

The sources of information regarding the HPV vaccine was largely through classes and textbooks (64.8%), followed by communication with the doctors or the health care facility(20.9%) and also through mass media (8.9%) and least was through family/friends(5.4%).(Figure 1)

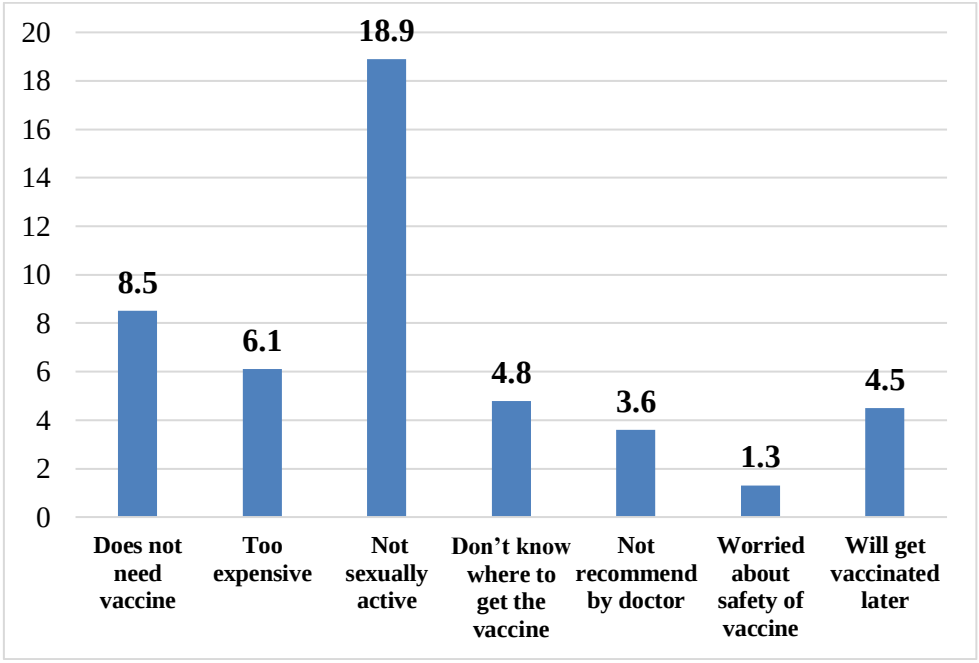

Figure 2. Reasons for not accepting HPV vaccination

Out of the 47.7% students who did not express interest in vaccination, majority 18.9% said not sexually active hence not like to take vaccine, 8.5% opined no need of vaccine, 6.1% said its too expensive, 4.8 didn't know where to procure vaccine, 1.3 % were worried about the safety of the vaccine and 4.5% of them said they will get vaccinated later. (Figure 2)

DISCUSSION

In the present study, there were 53.5% of female and 43.5% male medical students, none of the participants were married at the time of our study and more than half the participants (52.6%) were aged between 17-19 years which was appropriate age to get vaccinated for HPV. Among the study participants 72.4% were aware of the HPV infection in our study which was high compared to a study conducted by Mehta S et al (50%), Kamini S et al (54.5%) and it is low compared to the studies held by Panday et al (81.5%), Joshi et al (96%).[11-14] This difference might be because, majority of the participants were from first academic year who might not be aware about the infection yet.

In our study 70.5% of the participants were aware about the HPV vaccination which was closer compared to studies held by Deriemaeker et al (80%), Mehta et al (82%) as sample size was low in their studies.[15,14] The same finding was high compared to a study carried out by Kamini s et al (63.6%), Montgomerry et al (36%) which can be attributed to the fact that our participants were medical students who acquire knowledge through teaching.[12,10]

Regarding the necessity of the vaccination 19.4% of the participants felt that men should also be vaccinated where as in studies carried out by Panday et al and Joshi et al it was 25.2% and 35.8% respectively.[13&14] The need for vaccinating was felt by 69.5% of our participants which was better compared to Kamini S et al (53.3%).[12] Kamini S et al, S Mehta et al and Joshi et al reported that 64.9%, 66.8% and 67.8% were willing to accept the HPV vaccine respectively, our findings (52.3%) come close to this.[12,11,14] Saha A et al found a high acceptance rate regarding the same (75%) as they assessed only female participants in their study.[16]

Among the participants who expressed interest for vaccination only 17.3% of them got vaccinated at the end of the study but this practice was better than study held by Joshi et al where only 6% got vaccinated.[14] Sources of information was mainly through lectures/textbooks (64.8%) followed by doctors/healthcare facility (20.9%) in our study, same was reported by Panday et al (42.9%) and Kamini S.[12&13] Mass/media was the main source of information in a study conducted by Joshi et al (53.4%) where as in our study it was only 8.9%.[14] Shetty S found that 68.35 of their participants would encourage their family and friends for vaccination which was almost same to our study finding(62.5%).[17] Interns had 100% awareness about the infection and vaccination compared to undergraduates. Among those who were not interested in vaccination, 18.9% of them said they are not sexually active, 8.5% thought there was no need of vaccine, 6.1% felt vaccine is too expensive and 1.3% worried about the safety of the vaccine. These findings were similar to Mehta S et al and Kamini S et al.[11&12]

The strength of our study is that we did not stop at data collection, we held an awareness session about the HPV vaccination and also organized a vaccination session for the willing participants but students had to bear their own charges. The limitation of our study was that we could not approach all the students and interns as they were occupied in exam preparation and due to their absence during data collection.

CONCLUSION

Our study revealed appreciable level of awareness about the HPV infection and the vaccination. Females had a better awareness regarding the infection as well as the vaccine, target population, and they were more willing to accept vaccination compared boys. Majority of students opined sexually inactive status, cost of the vaccine, safety concern deterred them from accepting vaccination. We found that medical teaching had a definitive impact on the awareness, with regards to aetiology of cervical cancer, availability of the vaccine and its protective efficacy. Majority of the participants were ready to encourage their friends and family regarding the same.

RECOMMENDATION

More awareness sessions should be organized among the other educational institutions to encourage vaccination. Awareness about the cervical screening should also be encouraged in the target groups. Cost of vaccine to be reduced as it was an important factor which deterred the subjects from vaccination.

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