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Awareness and attitude towards Human Papilloma Virus vaccine among Medical Students of a Premier Medical College, Mysuru

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ABSTRACT

Background: *Cervical cancer is a relatively neglected disease in terms of advocacy, screening, and prevention from professional or public health organizations. As preventing cancer with the help of a vaccine is a revolutionary concept, awareness, and education about it will have important implications in the implementation of this strategy.* ***Aim & Objective:*** *To assess the knowledge about Human Papilloma Virus (HPV) to create awareness among the population and to assess awareness and attitude towards the Human Papilloma Virus (HPV) Vaccine among Medical Students.* ***Methodology:*** *A cross-sectional study was conducted among medical students, after obtaining written consent for participation, a pre-tested semi-structured questionnaire was distributed to all students of both sexes studying MBBS in 2nd and 3rd year who are exposed to clinical postings and 1st year MBBS students who are studying non clinical subjects were included in the study. Descriptive statistical measures like percentages were used for qualitative data and quantitative data were expressed as mean and standard deviation. Appropriate statistical tests were applied using Statistical Package for Social Sciences Version 22 software and expressed statistically at a p-value less than 0.05.* ***Results:*** *210 (57.7%) were below 20 years and 233 (64%) were females and about 173 (47.5%) were from 1st term MBBS and 191 (52.5%) were from 7th term MBBS students. There is an increased acceptance of the Human Papilloma Virus vaccine among female and male students which was found to be statistically significant <0.001.* ***Conclusions:*** *The overall knowledge about Human Papilloma Virus is very low among medical students and also vaccine uptake is very low and amenable barriers exist against the vaccine.*

Keywords: Cervical Cancer, Human Papilloma Virus (HPV), Medical students, Awareness

INTRODUCTION

Cancer Cervix (CC) is the second most common malignancy among women worldwide. In developing countries, it is also the most common cause of cancer deaths in women. Cervical cancer occurs relatively early during the lifespan of a woman. The incidence starts rising from 30 years-34 years of age and the peak occurs in the decade between 55 years-65 years. The median age of cancer cervix in women is 38 years [1]. Human Papilloma Virus (HPV) is one of the most common causes of sexually transmitted infections all over the world. It is responsible for approximately 90% of cases of invasive cervical cancer and is a major cause of female mortality [2-4]. It is easily preventable through routine screening, follow up, and treatment; 80% of sexually active women get affected by persistent Human Papilloma Virus (HPV) infection leading to cervical malignancy [5]. The infection caused by Human Papilloma Virus is very commonly found in young women who have sexual activity at an early stage or before 25 years of age without any clinical consequence [6]. Approximately 5,00,000 new cases of cervical cancer and 2, 60,000 cancers related deaths occur annually [7]. In India, cervical cancer remains the commonest female cancer and has an annual incidence of

more than 1,32,000 every year [8]. Human Papilloma Virus types 16 and 18 contribute to around 74% of cervical cancers as well as to cancers of the anus, penis, vulva, vagina, mouth, and oropharynx [9,10]. Human Papilloma Virus types 6 and 11 cause almost all cases of genital warts [11]. The additional risk factors for CC include coinfection with human immune deficiency virus (HIV), herpes simplex virus type II, infection by *Chlamydia trachomatis*, poor personal hygiene, early marriage, tobacco usage, multiple sexual partners, and usage of oral contraceptives over a long term [12].

Recognition of this dreaded virus in cervical cancer has led to a stimulating search for preventive vaccines. Human Papilloma Virus vaccines have been introduced in many developed countries in recent years. 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. Two types of recombinant vaccines against Human Papilloma Virus have been approved for use in India and several countries like the USA, Australia, and the European Union marketed as Gardasil and Cervarix [13]. The World Health Organization, Food and Drug Administration, Centre for Disease Control, and Global Advisory Committee on Vaccine Safety have confirmed and declared that the vaccine is safe and effective [14-16]. Future trials have demonstrated the efficacy of 91%-100% [17]. However, for the public to be aware, those in the medical field must have sound knowledge first. This includes health care professionals as well as medical students.

Medical students, as healthcare providers in the future, would be influential in affecting the community's views and thereby the uptake of the Human Papillomavirus vaccine. Hence, there is a need to promote the right attitude for prompt implementation of this vaccine among medical students. With this in mind, we conducted a study among the medical students to know their awareness and attitude towards the Human Papilloma Virus vaccine in a Premier Medical College, Mysuru.

OBJECTIVES

To assess the knowledge about Human Papilloma Virus to create awareness among the population and to assess awareness and attitude towards the Human Papilloma Virus (HPV) Vaccine among Medical Students.

METHODS

A cross-sectional study was conducted among medical students using the purposive sampling technique. The criteria for selection were all the students who were present during the study period were included after taking consent and the only criterion for exclusion was those who were absent at the time of the survey and after three subsequent visits to the class. Written consent for participation was collected separately after it had been signed by the participant to avoid personal identification. Thus, the anonymity and confidentiality of the participants were guaranteed.

A pre-tested semi-structured questionnaire was distributed to a total of 364 students of both sexes studying MBBS in 2nd years and 3rd years that are exposed to clinical postings and 1st year MBBS students who are studying non-clinical subjects were included in the study.

The only criterion for exclusion was those who were absent at the time of the survey and after three subsequent visits to the class. Students in three batches of 100 each were taken of collecting data and were encouraged to participate in the study. The personal right to withdraw from the survey at any moment was ensured.

Descriptive statistical measures like percentages were used for qualitative data and quantitative data were expressed as mean and standard deviation. Appropriate statistical tests and Inferential Statistics were applied as needed using Statistical Package for Social Sciences Version 22 software. The differences, association, correlation, and regression were expressed statistically at a p-value less than 0.05.

RESULTS

Among the study participants, 210 (57.7%) were below 20 years and 233 (64%) were females and about 173 (47.5%) were from 1st term MBBS and 191 (52.5%) were 7th term MBBS students (Table 1).

Table 1 Demographic characteristic of the study participants

Demographic characteristics	Number (%)
Age (in Years)	
≤ 20	210 (57.7%)
>20	154 (42.3%)
Sex	
Male	131 (36%)
Female	233 (64%)
Education	
1st term	173 (47.5%)
7th term	191 (52.5%)

Awareness and attitude

It was seen that 340 (93.4%) of the students were aware of the preventable nature of CC, 319 (87.6%) knew the ethology of CC, 261 (71.5%) and 265 (72.8%) were aware of the availability and target population for vaccination respectively. It was noted that only 135 (37.1%) were aware of the vaccine dosage and 129 (35.4%) students about the need to vaccinate men (Table 2).

Table 2 Awareness regarding Human Papilloma Virus among the study participants

Clubs	Awareness among participants
Awareness regarding	**Number (%)**
Preventable nature of Cervical cancer	340 (93.4%)
Ethology of Cervical cancer	319 (87.6%)
Availability of vaccine	261 (71.5%)
Target population for vaccination	265 (72.8%)
Need to vaccinate men	129 (35.4%)
Catch up program	183 (50.3%)
Vaccine dosage	135 (37.1%)
Protective efficacy	242 (66.5%)

There is an increased acceptance of the Human Papilloma Virus vaccine among female and male students which was found to be statistically significant <0.001. There was not much difference in acceptance of the Human Papilloma Virus vaccine among the students based on their level of clinical exposure (Table 3).

Table 3 Association of demographic characteristics in acceptance of Human Papilloma Virus vaccine among the study participants

	Yes (%)	No (%)	Do not know (%)	p-value
Gender				
Male	69 (53.1%)	38 (29.2%)	23 (17.7%)	<0.001
Female	190 (81.9%)	6 (2.6%)	36 (15.5%)	
Education				
Non clinical	118 (68.2%)	22 (12.7%)	33 (19.1%)	0.338
clinical	141 (74.6%)	22 (11.6%)	26 (13.8%)	

Statistical analysis was done separately for 7th term and 1st term study participants. Among the 7th term students, it was seen that females were better aware of HPV than males which were found to be statistically significant with a p-value <0.001, in comparison to 1st term students where there was poor knowledge of HPV among females than males which was statistically significant with a p-value of 0.022 (Table 4). It was also noted that students who were exposed to clinical postings had a good knowledge of HPV and vaccines than those not exposed which was found to be statistically significant with a p-value <0.001 (Table 5).

Table 4 Association of awareness level among 7th term and 1st term students

Awareness Among 7th Term Participants			Total	Chi-square	p-value
Gender	**Poor**	**Good**			
Male	57 (77.0%)	17 (23.0%)	74	24.827	<0.001
Female	47 (40.2%)	70 (59.8%)	117		
Total	104(54.5%)	87 (45.5%)	191		
Awareness Among 1st Term Participants				5.267	0.022
Male	53 (93.0%)	4 (7.0%)	57		
Female	92 (79.3%)	24 (20.7%)	116		
Total	145 (83.8%)	28 (16.2%)	173		

Table 5 Association of awareness level based on Non clinical and Clinical exposure among the study participants

Awareness	Non Clinical	Clinical	Total	Chi square	p-value
Poor	145 (58.0%)	105 (42.0%)	250	35.105	<0.001
Good	28 (24.6%)	86 (75.4%)	114		
Total	173 (47.5%)	191 (52.5%)	364		

DISCUSSION

Cancer is an invincible disease which has plagued mankind for centuries. 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. Recently, a lot of researches are going on for vaccine which can prevent cancers. The development of Human Papilloma Virus vaccine represents a huge advancement in the fight against cervical cancer. In this study we look at the awareness and attitude of our medical college students towards Human Papilloma Virus and its vaccine. We found that medical students did not know the incidence of cervical cancer in India. We observed that the level of awareness about Human Papilloma Virus and Human Papilloma Virus vaccine was extremely low among 1st year students in comparison to 7th term students. The lack of knowledge may be due to their non-exposure to the clinical postings at the beginning of 1st year MBBS and also the fact that the Human Papilloma Virus infection is mainly asymptomatic and in 90% of cases the infection clears off without treatment. In this study 93.4% of the students were aware regarding the preventable nature of CC and only 37.1% were aware of the vaccine dosage whereas 35.4% students about need to vaccinate which is consistent with the study conducted by Saha, et al. in Kolkata who revealed a very low level of awareness among the graduate and postgraduate students [18]. Another study conducted to find out awareness about the risk factors for cervical cancer among the educated youth in India, Sri Lanka and Nepal and the average awareness in this regard was found to be 66% in India, 58.8% in Nepal and 57.7% in Srilanka [19]. In this study we found that among the 7th term students it was seen that females were better aware of Human Papilloma Virus than males which was found to be statistically significant with p-value <0.001, in comparison to 1st term students where there was a poor knowledge of Human Papilloma Virus among females than males which was statistically significant with p-value of 0.022. Most participants believe that their parents could pay for the vaccine and almost 66.5% would get the vaccine if it were free which is in agreement with the study conducted by Mehta, et al. who reported that 66.8% were willing to accept the Human Papilloma Virus vaccine [20] (Figure 1). In this study we found that only 2 (0.54%) participants

were found to be vaccinated prior to this study. The major obstacles to implementation of HPV vaccine programs in our country as mentioned by Bhatla, et al. included cost, acceptability, lack of public awareness and infrastructure, concern about unknown side effect. In their review article by Bhardwaj, et al. high cost of the vaccines was stated as the major concern for mass vaccination program in India [21,22] (Figure 2).

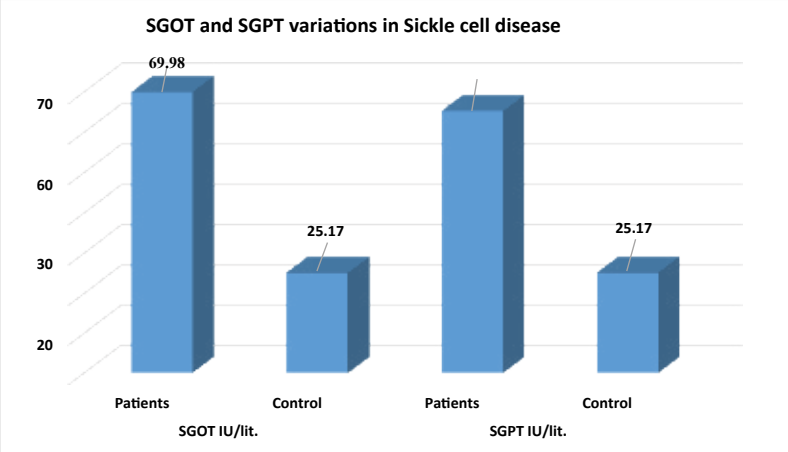

Figure 1 Showing various sources of knowledge of Human Papilloma Virus

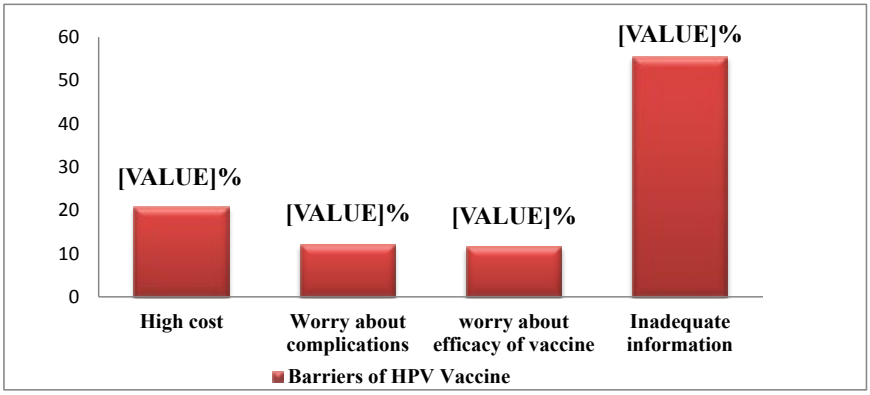

Figure 2 Showing various barriers of Human Papilloma Virus vaccine

CONCLUSION

Vaccine uptake is very low among medical students and amenable barriers exist against the vaccine. Human Papilloma Virus vaccine for primary prevention of cervical cancer is a revolutionary concept and medical students, our future clinicians will be able to play a pivotal role in popularizing this strategy.

Educational initiatives targeting health care professionals have a definitive role in fostering vaccine acceptance. Therefore, urgent intervention in the form of information session is recommended targeted at the medical students, to eliminate the barriers of Human Papilloma Virus vaccination.

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DECLARATIONS

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

[1] Kaarthigeyan, K. "Cervical cancer in India and HPV vaccination." *Indian Journal of Medical and Paediatric Oncology,* Vol. 33, No. 1, 2012, pp. 7-12.

[2] Giles, Michelle, and Suzanne Garland. "A study of women's knowledge regarding human papillomavirus infection, cervical cancer and human papillomavirus vaccines." *Australian and New Zealand Journal of Obstetrics and Gynaecology,* Vol. 46, No. 4, 2006, pp. 311-15.

[3] Wong, L. P., et al. "Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study." *Singapore Medical Journal,* Vol. 50, No.1, 2009, p. 49.

[4] Monsonego, Joseph, et al. "Prevalence of type-specific Human papillomavirus infection among women in France: Implications for screening, vaccination, and a future generation of multivalent HPV vaccines." *Vaccine,* Vol. 30, No. 35, 2012, pp. 5215-21.

[5] Gebrie, Mignote H., et al. "Knowledge, preventive practice and associated factors of female nurses' towards cervical cancer in the selected government hospitals in Addis Ababa, Ethiopia." *Journal of Diabetes and Metabolism,* Vol. 6, No. 7, 2015, p. 569.

[6] Sichanh, Chanvilay, et al. "Knowledge, awareness and attitudes about cervical cancer among women attending or not an HIV treatment center in Lao PDR." *BioMed Central Cancer,* Vol. 14, No .1, 2014, pp. 1-10.

[7] Pandhi, Deepika, and Sidharth Sonthalia. "Human papilloma virus vaccines: Current scenario." *Indian Journal of Sexually Transmitted Diseases and Human immunodeficiency Virus Infection and Acquired Immune Deficiency Syndrome,* Vol. 32, No. 2, 2011, p. 75.

[8] Parkin, D. Max, et al. "Global cancer statistics, 2002." CA: *A Cancer Journal for Clinicians*, Vol. 55, No. 2, 2005, pp. 74-08.

[9] Munoz, Nubia, et al. "Against which human papillomavirus types shall we vaccinate and screen? The international perspective." *International Journal of Cancer,* Vol. 111, No. 2, 2004, pp. 278-85.

[10] Parkin, D. Maxwell, and Freddie Bray. "The burden of HPV-related cancers." *Vaccine,* Vol. 24, 2006, pp. 11-25.

[11] Lacey, Charles JN, Catherine M. Lowndes, and Keerti V. Shah. "Burden and management of non-cancerous HPV-related conditions: HPV-6/11 disease." *Vaccine,* Vol. 24, 2006, pp. 35-41.

[12] Husain, RS Akram, and V. Ramakrishnan. "Global variation of human papillomavirus genotypes and selected genes involved in cervical malignancies." *Annals of Global Health,* Vol. 81, No. 5, 2015, pp. 675-83.

[13] Indian Academy of Pediatrics Committee on Immunization (IAPCOI. "Consensus recommendations on immunization, 2008." *Indian Pediatrics,* Vol. 45, No. 8, 2008, pp. 635-48.

[14] Kash, Natalie, et al. "Safety and efficacy data on vaccines and immunization to human papillomavirus." *Journal of Clinical Medicine,* Vol. 4, No. 4, 2015, pp. 614-33.

[15] Nakalembe, Miriam, Florence M. Mirembe, and Cecily Banura. "Vaccines against human papillomavirus in low and middle income countries: a review of safety, immunogenicity and efficacy." *Infectious Agents and Cancer,* Vol. 10, No. 1, 2015, pp. 1-14.

[16] Basu, Partha, et al. "Efficacy and safety of human papillomavirus vaccine for primary prevention of cervical cancer: A review of evidence from phase III trials and national programs." *South Asian Journal of Cancer*, Vol. 2, No.4, 2013, pp. 187-92.

[17] Future II Study Group. "Prophylactic efficacy of a quadrivalent human papillomavirus (HPV) vaccine in women with virological evidence of HPV infection." *The Journal of Infectious Diseases,* Vol. 196, No. 10, 2007, pp. 1438-46.

[18] Saha, A., et al. "Awareness of cervical cancer among female students of premier colleges in Kolkata, India." *Asian Pacific Journal of Cancer Prevention*, Vol. 11, No. 4, 2010, pp. 1085-90.

[19] Joy, Teresa, et al. "Awareness of cervix cancer risk factors in educated youth: a cross-sectional, questionnaire based survey in India, Nepal, and Sri Lanka." *Asian Pacific Journal of Cancer Prevention*, Vol. 12, 2011, pp.

1707-12.

[20] Mehta, Sumita, et al. "Awareness about human papilloma virus and its vaccine among medical students." *Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive and Social Medicine,* Vol. 38, No. 2, 2013, p. 92.

[21] Bhatla, Neerja, and Elizabeth Joseph. "Cervical cancer prevention & the role of human papillomavirus vaccines in India." *Indian Journal of Medical Research,* Vol. 130, No. 3, 2009, p. 334.

[22] Bharadwaj, Mausumi, et al. "HPV & HPV vaccination: issues in developing countries." *Indian Journal of Medical Research,* Vol. 130, No. 3, 2009, pp. 327-33.