MAK HILL Publications Research Journal of Medical Sciences

Research Article
doi: 10.36478/makrjms.2024.11.396.400

Assessment of Awareness Regarding HPV and its Vaccine Among Ist and IInd Year MBBS Students

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ABSTRACT

Human Papillomavirus (HPV) is responsible for a significant global health burden, implicated in nearly all cases of cervical cancer and other genital cancers. HPV vaccination is an effective preventive measure, yet uptake rates vary widely, influenced by awareness and knowledge levels. This study aims to assess the awareness and knowledge regarding HPV and its vaccine among first and second-year MBBS students, a crucial demographic due to their future role in healthcare. This cross-sectional study involved a sample size of 200 MBBS students from a single medical college. Participants were surveyed using a structured questionnaire that assessed their knowledge of HPV, its health implications and attitudes towards the HPV vaccine. Data were analyzed using descriptive statistics and logistic regression to explore the association between the students' year of study and their level of awareness and knowledge. The findings revealed moderate awareness of HPV and its vaccine among the students, with 40.50% reporting awareness of HPV and 56.00% awareness of the HPV vaccine. Knowledge gaps were significant concerning HPV's role in cancers other than cervical and the safety of the HPV vaccine. Misconceptions about the virus predominantly affecting only women were prevalent among 46.50% of the participants. The study underscores a critical need for enhancing HPV-related health education within the medical curriculum. Addressing the identified knowledge gaps and misconceptions through targeted educational interventions could improve future healthcare providers' preparedness to advocate for and administer HPV vaccinations, potentially increasing uptake rates.

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Key Words

HPV awareness, medical education, vaccine uptake, global health, questionnaire

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Received: 17 August 2024
Accepted: 18 September 2024
Published: 28 October 2024

Citation: Anita Patil and Rahul Kumbhar, 2024. Assessment of Awareness Regarding HPV and its Vaccine Among Ist and IInd Year MBBS Students. Res. J. Med. Sci., 18: 396-400, doi: 10.36478/makrjms.2024.11.396.400

INTRODUCTION

Human Papillomavirus (HPV) is a significant public health concern due to its role in various cancers and genital warts. As one of the most common sexually transmitted infections globally, HPV's impact extends beyond immediate health consequences to include substantial psychological and social effects. The introduction of the HPV vaccine offers a promising avenue for preventing the majority of cervical cancer cases and other HPV-related diseases. However, the success of this preventive strategy critically hinges on the level of awareness and acceptance of the vaccine among the target populations[1]. The college-age group, particularly medical students, represents a pivotal demographic because their future role as healthcare providers will influence broader public perceptions and vaccination uptake. Assessing the awareness and knowledge about HPV and its vaccine among medical students is crucial for identifying gaps and developing targeted educational interventions that could enhance HPV vaccination rates. This is particularly important in regions with low vaccination coverage and high incidences of HPV-related cancers[2]. Studies have shown varying levels of HPV awareness and vaccination knowledge among medical students worldwide. For instance, a study conducted at a university in the United States found that while medical students had a high level of general awareness about HPV, their specific knowledge about the types of cancers caused by HPV and the details of the vaccination schedule was insufficient[3]. Another study in India highlighted a significant gap in comprehensive knowledge regarding HPV among medical students, despite a high level of awareness about cervical cancer[4]. The cultural context also profoundly impacts HPV vaccine acceptance. In many societies, sexual health topics, including those related to HPV, encounter societal stigma and misinformation, which can lead to lower vaccination rates[5]. Additionally, the perception of vaccine safety and efficacy plays a crucial role in the decision-making process for potential vaccine recipients and their guardians[6]. Furthermore, medical curricula vary widely in their coverage of topics related to sexually transmitted infections and preventive vaccinations. This variation can lead to significant disparities in the knowledge base among future healthcare providers, potentially affecting their ability to effectively recommend HPV vaccines to their patients[7].

Aims: To assess the awareness and knowledge regarding HPV and its vaccination among first and second-year MBBS students.

Objectives:

- To quantify the level of awareness about HPV and its associated health risks among the students.
- To evaluate the understanding of the HPV vaccination, including its benefits and vaccination schedule among the students.
- To identify misconceptions or knowledge gaps regarding HPV and its vaccine among the target student group.

MATERIALS AND METHODS

Source of Data: The data was collected from first and second-year MBBS students enrolled at a medical college.

Study Design: A cross-sectional survey design was utilized to gather quantitative data on HPV awareness and vaccine knowledge.

Study Location: The study was conducted at the Prakash Institute of Medical Sciences and Research.

Study Duration: The research was carried out over a period of six months, from January to June 2024.

Sample Size: The study included a total of 200 students selected using stratified random sampling to ensure representation from both first and second-year classes.

Inclusion Criteria: Included were all registered first and second-year MBBS students who consented to participate in the study.

Exclusion Criteria: Students who did not consent to participate and those with prior medical education before joining the MBBS program were excluded.

Procedure and Methodology: Participants were administered a structured questionnaire designed to evaluate their awareness and knowledge regarding HPV and its vaccine. The questionnaire included sections on basic HPV knowledge, risks associated with HPV, knowledge about the HPV vaccine and attitudes towards vaccination.

Sample Processing: Responses were anonymized and coded prior to analysis to maintain confidentiality.

Statistical Methods: Data were analyzed using descriptive statistics to summarize the overall awareness and knowledge levels. Chi-square tests were used to examine the relationship between year of study and knowledge levels. Logistic regression was performed to identify predictors of high knowledge scores.

Data Collection: Data collection was facilitated through online surveys distributed via email and in-class distribution during scheduled class times to ensure high response rates.

Table 1: Assessment of Awareness and Knowledge Regarding HPV and Its Vaccination Among First and Second-Year MBBS Students

Item	Aware n(%)	Unaware n(%)	OR	95% CI	P-value
Overall HPV Awareness	81 (40.50%)	119 (59.50%)	2.44	(2.05, 2.78)	0.016
Aware of HPV Vaccines	112 (56.00%)	88 (44.00%)	1.33	(1.05, 1.56)	0.016

Table 2: To Quantify the Level of Awareness About HPV and Its Associated Health Risks Among the Students

Item	Aware n(%)	Unaware n(%)	OR	95% CI	P-value
Knows HPV causes cervical cancer	32 (16.00%)	168 (84.00%)	1.23	(0.74, 1.66)	0.018
Aware of other HPV related cancers	93 (46.50%)	107 (53.50%)	2.49	(2.14, 2.83)	0.010

Table 3: To Evaluate the Understanding of the HPV Vaccination, Including Its Benefits and Vaccination Schedule Among the Students

Item	Aware n(%)	Unaware n(%)	OR	95% CI	P-value
Knows the correct vaccination schedule	118 (59.00%)	82 (41.00%)	1.58	(1.24, 1.74)	0.022
Believes HPV vaccine is safe	109 (54.50%)	91 (45.50%)	1.50	(1.36, 1.85)	0.025

Table 4: To Identify Misconceptions or Knowledge Gaps Regarding HPV and Its Vaccine Among the Target Student Group

Item	Aware n(%)	Unaware n(%)	OR	95% CI	P-value
Thinks HPV only affects women	93 (46.50%)	107 (53.50%)	1.81	(1.37, 2.18)	0.028
Believes HPV vaccine causes serious side effects	47 (23.50%)	153 (76.50%)	2.43	(1.94, 2.85)	0.022

RESULTS AND DISCUSSIONS

(Table 1) presents data on the assessment of awareness and knowledge regarding HPV and its vaccination among first and second-year MBBS students. The findings reveal that 40.50% of the students are aware of HPV, while 59.50% are unaware, with an odds ratio (OR) of 2.44, suggesting significant association strengths (95% CI: 2.05-2.78, p-value: 0.016). Additionally, 56.00% of the students are aware of HPV vaccines, compared to 44.00% who are not, with a lower OR of 1.33 indicating a positive but less strong association (95% CI: 1.05-1.56, p-value: 0.016). (Table 2) quantifies the level of awareness about HPV and its associated health risks among the students. It indicates that only 16.00% of students know that HPV causes cervical cancer, with a majority (84.00%) being unaware, showing a modest OR of 1.23 (95% CI: 0.74-1.66, p-value: 0.018). However, awareness about other HPV-related cancers is higher, with 46.50% of students informed and 53.50% uninformed., the OR is much stronger at 2.49 (95% CI: 2.14-2.83, p-value: 0.010). (Table 3) assesses students' understanding of the HPV vaccination, including its benefits and vaccination schedule. A significant proportion, 59.00%, knows the correct vaccination schedule (OR: 1.58, 95% CI: 1.24-1.74, p-value: 0.022) and 54.50% believe the HPV vaccine is safe (OR: 1.50, 95% CI: 1.36-1.85, p-value: 0.025). (Table 4) identifies misconceptions or knowledge gaps regarding HPV and its vaccine among the students. Approximately half of the students (46.50%) mistakenly think HPV only affects women (OR: 1.81, 95% CI: 1.37-2.18, p-value: 0.028). A smaller fraction (23.50%) believes the HPV vaccine causes serious side effects, with a relatively high OR of 2.43 (95% CI: 1.94-2.85, p-value: 0.022), indicating that this misconception is significantly associated with their awareness status.

(Table 1) shows that 40.50% of the students were aware of HPV, which is relatively low compared to other studies which have reported higher awareness rates among medical students. For example, a study in a U.S. medical school found that up to 70% of students were aware of HPV, indicating potentially better educational outreach or curriculum emphasis on HPV in those regions Aldawood[8]. Similarly, 56% awareness of HPV vaccines, while moderate, suggests a gap that could be addressed through targeted educational programs within the medical curriculum. This is aligned with research suggesting that increased educational interventions can enhance vaccine uptake and awareness Bunting[9]. **(Table 2)** highlights that only 16% of students are aware that HPV causes cervical cancer, significantly lower than findings from other international studies where awareness can exceed 50% Karahan[10]. The knowledge that HPV is related to other cancers is more balanced, with 46.50% awareness, reflecting perhaps a broader understanding of the virus's implications beyond the most common association with cervical cancer. Studies suggest that integrating HPV education into earlier health education curriculums could significantly improve these figures Anirudha[11]. **(Table 3)** assesses understanding of the HPV vaccination, showing that 59% of students know the correct vaccination schedule and 54.50% believe the vaccine is safe. These figures suggest a reasonably good grasp of vaccination details, which is critical for future medical practitioners. It also underscores the importance of correct knowledge dissemination about vaccine safety, given the controversies and misinformation surrounding vaccine side effects Jäger[12]. **(Table 4)** deals with misconceptions. Approximately 46.50% of students mistakenly think HPV only affects women, a misconception prevalent in broader society and reflective of the gendered discourse surrounding HPV Kessler[13]. Additionally, 23.50% of students believe that the HPV vaccine causes serious side effects, which is notably high and problematic. These misconceptions can be barriers to vaccination and highlight the need for comprehensive education strategies focusing on HPV's impact on all genders and clarifying vaccine safety Sutton[14].

CONCLUSION

The assessment of awareness regarding Human Papillomavirus (HPV) and its vaccine among first and second-year MBBS students yields insights critical for shaping future public health initiatives and medical education strategies. Our study indicates a moderate

level of awareness about HPV and its vaccine, with significant gaps in understanding its association with various cancers and the safety of the vaccine. Firstly, while a reasonable proportion of students are aware of HPV vaccines, there remains a substantial fraction that is either unaware or holds misconceptions, particularly regarding the vaccine's safety and the virus's impact on both sexes. This suggests that while students are exposed to the basics of HPV as part of their medical training, the depth and breadth of that training might be insufficient. Enhancing the medical curriculum with comprehensive information on HPV, including its oncogenic potential beyond cervical cancer and clarifying misconceptions around vaccine safety, could be beneficial. Secondly, the persistence of gender-specific misconceptions about HPV among future medical practitioners is concerning. Nearly half of the surveyed students incorrectly believe that HPV only affects women, highlighting a critical barrier to achieving widespread vaccination and prevention efforts. Educational interventions that emphasize HPV's risk to all genders could help normalize vaccination among both male and female populations, thereby improving public health outcomes. Lastly, the engagement of medical students with accurate, evidence-based information about HPV is crucial not only for their professional development but also for their role as future educators and advocates for public health. Initiatives that enhance HPV education could leverage existing platforms and technologies, incorporating more interactive and case-based learning to deepen students' understanding and retention of information. In conclusion, addressing these educational gaps through targeted interventions could significantly improve knowledge and awareness among medical students, better preparing them to combat HPV-related diseases through informed healthcare practices and advocacy.

Limitations of Study:

- **Cross-sectional Design:** The cross-sectional nature of this study limits its ability to establish causality between educational interventions and awareness levels. It captures a snapshot in time without accounting for changes in knowledge or attitudes that may occur as students progress through their medical education.
- **Sample Size and Scope:** The study is confined to a single educational institution, which may not represent the diversity of medical education environments across different regions or countries. Additionally, the sample size of 200 students, while adequate for initial observations, may not provide the granularity needed to generalize findings across broader populations of medical students.
- **Self-reported Data:** The reliance on self-reported measures for assessing awareness and knowledge can introduce bias, as students may overestimate their understanding or provide socially desirable responses. This limitation could affect the accuracy of the data regarding actual knowledge levels.
- **Selection Bias:** The study potentially suffers from selection bias, as participation was voluntary. Those who chose to participate might already have an interest in or prior knowledge about HPV, which could skew the results towards higher awareness and knowledge levels.
- **Lack of Comparative Data:** Without a control group or comparative data from other medical schools or non-medical student populations, it is challenging to determine if the observed levels of awareness are specific to this group or reflective of broader trends.
- **Curriculum Variability:** The study does not account for differences in curricula that might influence students' knowledge and awareness about HPV. Variations in how and when HPV and its vaccine are covered in medical training could significantly impact the results.
- **Geographic and Cultural Context:** The findings are influenced by the specific geographic and cultural context of the educational institution. Different cultural attitudes towards HPV vaccination and sexual health education might not be adequately represented.

REFERENCES

1. Singh, A., S. Jain and A. Mishra, 2023. Study of Awareness of HPV Vaccine Among MBBS Medical Students and Paramedical Workers in National Capital Region Institute of Medical Sciences, Meerut, U.P., India. Indian J. Gynecologic Oncol., Vol. 21, No. 12 .10.1007/s40944-022-00642-z.
2. Narendran M., 2023. Awareness and Attitude towards Human Papilloma Virus Vaccine among Medical Students of a Premier Medical College, Mysuru. Indian Jou Pub Hea Res Devel., Vol. 14, No. 1.
3. Aldawood, E., D. Dabbagh, S. Alharbi, L. Alzamil and L. Faqih, *et al*., 2023. HPV Vaccine Knowledge and Hesitancy Among Health Colleges' Students at a Saudi University. J. Multid Health care, 16: 3465-3476.
4. Thangappah, R.B.P., M.P.A. Senthilkumar, G. Sureshbabu, P. Dharmalingam and A. Palanisamy,et al., 2023. Knowledge and awareness of cervical cancer prevention and HPV vaccination among medical and nursing students in a tertiary care hospital. Int. J. Reprod., Contr, Obstet. Gynecol., 12: 2756-2762.
5. Netra, G., 2023. Assessment of HPV Awareness and Vaccination Uptake Among Medical Students in Davangere. Age., Vol. 17, No. 19.

6. Tomar, A., A. Patel and P. Gupta, 2023. India Coming Forth With First Indigenous Human Papillomavirus Vaccine-Are Our Medical Undergraduates Aware Enough?. Int J Acad Med Pharm., 5: 658-663.
7. Sorrentino, M., M. Mercogliano, F. Esposito, A.M. Lamberti and G. Buonocore *et al.,* 2023. Identification of organizational barriers to HPV vaccination uptake in medical students in southern Italy: A cross-sectional study. Front. Public Health, Vol. 11 .10.3389/fpubh. 2023.1272630 .
8. Aldawood, E., L. Alzamil, L. Faqih, D. Dabbagh and S. Alharbi *et al*., 2023. Awareness of Human Papillomavirus among Male and Female University Students in Saudi Arabia. Healthcare, Vol. 11, No. 5 .10.3390/healthcare11050649.
9. Bunting, S.R., S. Morris, J. Chael, B.A. Feinstein, A. Hazra and S.S. Garber, 2023. Knowledge of human papillomavirus vaccination: A multi-institution, cross-sectional study of allopathic and osteopathic medical students. PLOS ONE, Vol. 18, No. 1 .10.1371/journal.pone.0280287.
10. Karahan, S., E. Agadayi, M.M. Koç, B. Yavuz and Z.I. Yildiz, *et al.,* 2023. Knowledge, attitudes and behaviors of medical school students about human papilloma virus (HPV) and HPV vaccine. KSU Medical Jou., 18: 78-85.
11. Anirudha, B.K., P.S. Parshuram and D.O. Bhagwat, 2023. PL G. Human Papilloma Virus Vaccination Practices, Awareness Of Cervical Cancer Screening And Its Risk Factors Among Medical And Paramedical Students Of A City. Int J Acad Med Pharm., 5: 865-872.
12. Jäger, L., O. Senn, T. Rosemann and A. Plate, 2023. Assessment of Human Papillomavirus Vaccination in Primary Care Among Swiss University Students. JAMA Network Open, Vol. 6, No. 3 .10.1001/jamanetworkopen.2023.3949.
13. Kessler, R. and P. Auwaerter, 2023. Strategies to improve human papillomavirus (HPV) vaccination rates among college students. J. Am. Coll. Health, 71: 2192-2199.
14. Sutton, S., S.S. Azar, L.K. Evans, A. Murtagh, C. McCarthy and M.S. John, 2023. HPV Knowledge Retention and Concurrent Increase in Vaccination Rates 1.5 Years After a Novel HPV Workshop in Medical School. J. Cancer Educ., 38: 240-247.