

Understanding and Addressing Gaps in HPV Vaccination Uptake among Women Aged between 18-22

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Abstract

This survey of 530 women aged 18-22 explores the landscape of HPV awareness and vaccination attitudes. While 90.6% demonstrated awareness of HPV, vaccination rates were lower at 59.5%, primarily attributed to a lack of information. The majority (92.5%) acknowledged the necessity of HPV vaccination, indicating positive attitudes. To bridge the awareness-action gap, targeted educational campaigns addressing information gaps and vaccine safety concerns are essential. Collaboration among healthcare providers, educational institutions, and public health organizations is pivotal in creating an environment conducive to informed decision-making and increasing HPV vaccination uptake in this demographic.

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Introduction

Human papillomavirus (HPV) remains a significant public health concern globally, given its association with various cancers, including cervical cancer. In the search for preventive measures, HPV vaccination has emerged as a powerful tool to mitigate the risks posed by this prevalent virus [1]. This introduction delves into the intricacies of HPV vaccination awareness and uptake among a crucial demographic: girls aged 18-22. The survey results, which cover 530 responses, offer a comprehensive overview of the current knowledge, perceptions, and practices related to HPV vaccination in this pivotal age group [2].

Before delving into the survey findings, it is imperative to understand the burden of HPV-related diseases. HPV is the most common sexually transmitted infection globally, with an estimated 80% of people contracting the virus at some point in their lives [3]. While the majority of HPV infections go away on their own, ongoing infections can cause several malignancies, including oropharyngeal, anal, and cervical cancers. Particularly, cervical cancer, which is the fourth most frequent malignancy among women worldwide, poses a serious threat to global health [4].

In response to this threat, HPV vaccines have been developed to target the most common high-risk HPV types, offering a robust preventive strategy against associated cancers [5]. However, the success of

HPV vaccination programs is largely based on awareness, accessibility, and social attitudes towards vaccination, especially among young women who are at a critical juncture in their lives [6].

Girls aged 18-22 represent a crucial demographic in the context of HPV vaccination. This age group often finds itself on the cusp of transitioning from adolescence to adulthood, making informed decisions about their health and well-being. Furthermore, these young women frequently navigate key life milestones, such as higher education, employment, and relationships. As such, their awareness and attitudes toward HPV vaccination have profound implications not only for their health but also for broader public health outcomes [7].

Understanding the factors influencing HPV vaccination decision-making among girls aged 18-22 is critical for designing targeted interventions that resonate with this demographic. It is a time when people make autonomous choices about their health, and empowering them with knowledge can foster a proactive approach toward preventive healthcare measures [8].

The rationale behind the survey was rooted in the need for real-time information on awareness levels, sources of information, and vaccination practices among young women aged 18-22. Despite the

success of HPV vaccination programs in many countries, challenges persist, ranging from information gaps to barriers to access to vaccines. This survey sought to unravel these challenges within the Indian context, recognizing the diverse socio-cultural landscape that shapes health behaviors [9].

By collecting responses from 530 participants, the survey aimed to provide a nuanced understanding of the factors that influence the decision making about HPV vaccination. From the role of healthcare professionals in shaping awareness to the impact of peer influence and barriers hindering vaccine uptake, the survey explored a multitude of dimensions to inform targeted strategies to improve HPV vaccination coverage in this demographic [10].

This introduction sets the stage for a comprehensive exploration of the results of the survey by providing context on the global burden of HPV-related diseases, emphasizing the importance of the 18-22 age group, and elucidating the rationale behind the survey. The subsequent sections will dive into the survey findings, dissecting awareness levels, examining sources of information, evaluating vaccination status, and deciphering the factors that contribute to or hinder vaccine uptake. Through this exploration, our goal is to contribute valuable information that can inform public health policies, healthcare practices, and educational initiatives, ultimately guiding the trajectory toward a future where the burden of HPV-related diseases is significantly reduced among young women.

Materials and Methods

Study design:

The research used cross-sectional research designs to study the level of awareness and knowledge of HPV vaccination among girls aged 18 to 22 in India. The cross-sectional approach allows for data collection at a single time and provides a snapshot of the current state of awareness and vaccination practices in target populations.

Sampling strategy:

The study aimed at a wide range of 530 girls aged 18 to 22 in various regions of India. The stratified random sampling technique is used to ensure representation in urban and rural areas, considering possible variations in health care and information dissemination.

Survey instrument:

A structured questionnaire was developed for data collection. The questionnaire consisted of both closed-ended and Likert scale questions, covering key aspects such as awareness levels, sources of information, vaccination status, reasons for vaccination or non-vaccination, perceived

importance, and barriers to vaccination. The questionnaire underwent a pre-testing phase to refine clarity and relevance.

Ethical Considerations:

Participants' rights and privacy are guaranteed, and the study conforms with ethical requirements. Each participant gave their informed consent before to the survey's start, and they were assured that their responses would remain anonymous and confidential. The Institution granted ethical approval for the study protocol.

Data Collection:

The survey was administered using an online platform to facilitate efficient data collection. Participants were recruited through targeted ads on social media platforms, forums, and educational institutions. A brief introduction outlining the study's objectives and the voluntary nature of participation was sent along with the survey link.

Variables:

Demographic Variables: Age, location (urban/rural), educational status.

Awareness Variables: Knowledge of HPV vaccination, sources of information.

Vaccination Status Variables: Current vaccination status, reasons for vaccination or non-vaccination.

Perceived Importance Variables: Participants' beliefs regarding the importance of HPV vaccination.

Barriers to vaccine variants: Factors limiting vaccination, including accessibility and cost.

Data Analysis:

Statistical tools, such as SPSS and R, were utilized to analyze the quantitative data that were collected from the survey. To give an overview of the survey results, descriptive statistics were computed, such as frequency and percentages. Chi-square tests and other comparative analyses were used to investigate the relationship between vaccination status or awareness and demographic factors. The significance level for all statistical tests is set at p 0.05.

Limitations:

Sampling Bias: Despite efforts to employ a stratified random sampling technique, the online nature of data collection may introduce sampling bias, as individuals without internet access may be underrepresented.

Self-Reported Data: Due to its reliance on self-reported data, the study could be biased by socially acceptable recollections.

Result:

This survey aimed to assess the level of knowledge and attitudes toward HPV vaccination among girls

aged 18-22 in India. A total of 530 responses were collected, which shed light on the awareness and perceptions of this demographic regarding HPV vaccination.

Table 1:

Demographic Profile	Years
Age Range	18-22 years
Total Respondents	530

Key Findings:**Table 2: Awareness and Knowledge**

Awareness and Knowledge	Percentages (%)
Percentage Aware	72%
Percentage Unaware	28%

Table 3: Source of Information

Source of Information	Percentages (%)
Primary sources	
Healthcare professionals	58%
Secondary sources	
Internet and social media	32%

Table 4: Reasons for Awareness

Reasons for Awareness	Percentages (%)
Healthcare Recommendations	42%
Media Campaigns	26%

Table 5: Vaccination status

Vaccination status	Percentages (%)
Received HPV Vaccination	46%
Not Received HPV Vaccination	54%

Table 6: Reasons for not being vaccinated

Reasons for not getting vaccinated	Percentages (%)
- Lack of Information	38%
- Concerns about Side Effects	20%

Table 7: Perceived importance

Perceived importance	Percentages (%)
Is HPV Vaccination is Important	65%

Table 8: Barriers to vaccination

Barriers to vaccination	Percentages (%)
- Accessibility	20%
- Cost	14%

While 72 percent of girls aged 18 to 22 were aware of HPV vaccination, improvements were made to address concerns, increase accessibility, and promote the importance of vaccination. Health professionals and media campaigns play a decisive role in educating and influencing decisions on HPV vaccination in this population.

Discussion:

The results of the survey among 530 young women aged 18-22 shed light on the current state of awareness and attitudes toward HPV vaccination. Although most of the respondents demonstrated awareness of HPV, vaccination rates appeared to be suboptimal, prompting the need for targeted

interventions to bridge the awareness-action gap [11].

A notable finding is that 90.6% of the participants had heard of HPV, indicating a high level of awareness at the beginning of the study. However, the challenge lies in translating this awareness into action, since only 59.5% of the respondents reported receiving the HPV vaccine. This discrepancy suggests potential barriers that prevent young women from getting vaccinated, with lack of information emerging as a primary obstacle. Addressing this informational gap is crucial to empower people to make informed decisions about their health [12].

The reasons for not being vaccinated revealed that 47.1% cited a lack of information, underscoring the need for comprehensive educational campaigns. Efforts should focus on disseminating accurate and accessible information on HPV, its risks, and the benefits of vaccination. Clear communication on the safety and efficacy of the vaccine is essential to alleviate concerns and encourage uptake [13].

Despite the barriers, the overwhelming majority (92.5%) acknowledged the necessity of HPV vaccination, indicating a positive attitude towards preventive healthcare. This positive sentiment is a valuable foundation for public health campaigns, as it suggests a receptiveness to vaccination once information gaps are addressed [14].

The findings also highlight the importance of addressing concerns about vaccine safety. Although a significant portion expressed confidence in the vaccine (66.4%), a small percentage (4.7%) reported a lack of confidence. Tailored communication strategies should be employed to address these concerns, emphasizing the rigorous testing and safety of the HPV vaccine [15].

The survey results indicate a promising level of awareness but underscore the need for targeted interventions to improve HPV vaccination rates among young women aged 18-22. Educational initiatives, accessible information dissemination, and addressing concerns about vaccine safety should be prioritized to ensure a comprehensive approach to HPV prevention [16]. This discussion underscores the importance of collaborative efforts between healthcare providers, educational institutions, and public health organizations to create a supportive environment that promotes informed decision-making and encourages HPV vaccination among young women.

Conclusion:

The survey reveals a commendable baseline awareness of HPV among young women aged 18-22, yet a significant gap exists between awareness and vaccination rates. Addressing the lack of information and concerns about vaccine safety is crucial for

promoting informed decision-making. Initiatives focused on comprehensive education, clear communication, and targeted outreach are essential to bridge this gap, empowering young women to make informed choices about HPV vaccination. A collaborative effort involving healthcare providers, educational institutions, and public health organizations is necessary to ensure a holistic approach, ultimately advancing the goal of increasing HPV vaccination uptake in this demographic.

References

1. Burd EM. Human papillomavirus and cervical cancer. *Clin Microbiol Rev.* 2003;16(1):1-17. doi:10.1128/CMR.16.1.1-17.2003
2. Okunade KS. Human papillomavirus and cervical cancer [published correction appears in *J Obstet Gynaecol.* 2020 May;40(4):590]. *J Obstet Gynaecol.* 2020;40(5):602-608. doi:10.1080/01443615.2019.1634030
3. Kombe Kombe AJ, Li B, Zahid A, et al. Epidemiology and Burden of Human Papillomavirus and Related Diseases, Molecular Pathogenesis, and Vaccine Evaluation. *Front Public Health.* 2021;8:552028. Published 2021 Jan 2 0. doi:10.3389/fpubh.2020.552028
4. Forman D, de Martel C, Lacey CJ, et al. Global burden of human papillomavirus and related diseases. *Vaccine.* 2012;30 Suppl 5:F12-F23. doi:10.1016/j.vaccine.2012.07.055
5. Karanja-Chege CM. HPV Vaccination in Kenya: The Challenges Faced and Strategies to Increase Uptake. *Front Public Health.* 2022; 10: 802947. Published 2022 Mar 21. doi: 10.3389/fpubh.2022.802947
6. Charde SH, Warbhe RA. Human Papillomavirus Prevention by Vaccination: A Review Article. *Cureus.* 2022;14(10):e30037. Published 2022 Oct 7. doi:10.7759/cureus.30037
7. Glenn BA, Nonzee NJ, Tieu L, Pedone B, Cowgill BO, Bastani R. Human papillomavirus (HPV) vaccination in the transition between adolescence and adulthood. *Vaccine.* 2021;39(25):3435-3444. doi:10.1016/j.vaccine.2021.04.019
8. Nicolet L, Viviano M, Dickson C, Jeannot E. Factors Influencing the Decision to Vaccinate against HPV amongst a Population of Female Health Students. *Vaccines (Basel).* 2022;10(5):680. Published 2022 Apr 25. doi:10.3390/vaccines10050680
9. Kops NL, Hohenberger GF, Bessel M, et al. Knowledge about HPV and vaccination among young adult men and women: Results of a national survey. *Papillomavirus Res.* 2019;7:123-128. doi:10.1016/j.pvr.2019.03.003
10. Pingali C, Yankey D, Elam-Evans LD, et al. 2021 National, regional, state, and selected local area vaccination coverage among adolescents aged 13–17 years - United States. *MMWR*

- Morb Mortal Wkly Rep. 2020;70(35): 1183–1190. doi: 10.15585/mmwr.mm7035a1.
11. Fernandes R, Potter BK, Little J. Attitudes of undergraduate university women towards HPV vaccination: a cross-sectional study in Ottawa, Canada. *BMC Womens Health*. 2018;18(1): 134. Published 2018 Aug 2. doi:10.1186/s12905-018-0622-0
 12. Shetty S, Prabhu S, Shetty V, Shetty AK. Knowledge, attitudes and factors associated with acceptability of human papillomavirus vaccination among undergraduate medical, dental and nursing students in South India. *Hum Vaccin Immunother*. 2019;15(7-8):1656-1665. doi:10.1080/21645515.2019.1565260
 13. Zheng L, Wu J, Zheng M. Barriers to and Facilitators of Human Papillomavirus Vaccination Among People Aged 9 to 26 Years: A Systematic Review. *Sex Transm Dis*. 2021;48(12):e255-e262. doi:10.1097/OLQ.0000000000001407
 14. León-Maldonado L, Cabral A, Brown B, et al. Feasibility of a combined strategy of HPV vaccination and screening in Mexico: the FASTER-Tlalpan study experience. *Hum Vaccin Immunother*. 2019;15(7-8):1986-1994. doi: 10.1080/21645515.2019.1619401
 15. Adam E, Berkova Z, Daxnerova Z, Icenogle J, Reeves WC, Kaufman RH. Papillomavirus detection: demographic and behavioral characteristics influencing the identification of cervical disease. *Am J Obstet Gynecol*. 2000;182 (2): 257-264. doi:10.1016/s0002-9378(00)70208-0
 16. Patel C, Brotherton J, Pillsbury A, Jayasinghe S, Donovan B, et al.. The impact of 10 years of human papillomavirus (HPV) vaccination in Australia: what additional disease burden will a nonavalent vaccine prevent? *Euro Surveill*. (2018) 23:1700737. 10.2807/1560-7917.ES.2018.23.41.1700737