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BREAKING BARRIERS, BUILDING PROTECTION: ASSESSING FACTORS INFLUENCING HPV VACCINE ACCEPTANCE AND UPTAKE FOR CERVICAL CANCER PREVENTION AMONG YOUNG WOMEN IN SELECTED COMMUNITIES

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ABSTRACT

Background:

Cervical cancer is one of the leading preventable cancers among women, with persistent infection by the Human Papillomavirus (HPV) recognized as its primary cause. Although safe and effective HPV vaccines are available, vaccination coverage remains inadequate in many low- and middle-income countries. Multiple factors influence vaccine acceptance, including limited knowledge, misconceptions regarding vaccine safety, financial constraints, cultural beliefs, and insufficient recommendations from healthcare professionals. Conversely, family encouragement, peer support, positive attitudes toward vaccination, and improved access to immunization services can enhance vaccine uptake. Identifying these influencing factors is essential for developing evidence-based strategies to strengthen cervical cancer prevention programs.

Aim:

To assess the barriers and facilitators influencing HPV vaccine uptake for cervical cancer prevention among adolescent girls and young women in selected communities.

Methodology:

A community-based descriptive cross-sectional study was conducted among 150 adolescent girls and young women selected through convenience sampling. Data were collected using a structured questionnaire comprising socio-demographic characteristics, knowledge related to HPV infection and cervical cancer, and a five-point Likert scale assessing perceived barriers and facilitators to HPV vaccination. Data analysis included descriptive statistics such as frequencies, percentages, means, and standard deviations. Associations between demographic variables and HPV vaccine uptake were examined using the chi-square test, with statistical significance established at $p < 0.05$.

Results:

The findings indicated that many participants demonstrated limited knowledge regarding HPV infection and its vaccine. Frequently reported barriers included inadequate awareness, concerns about vaccine safety and adverse effects, vaccine cost, prevailing sociocultural beliefs, and the absence of recommendations from healthcare providers. Facilitating factors comprised strong family support, encouragement from peers, awareness of cervical cancer risk, and the availability of vaccination services through public healthcare facilities. Educational status, previous exposure to HPV-related information, and family support were significantly associated with vaccine uptake ($p < 0.05$).

Conclusion:

HPV vaccine uptake is shaped by an interaction of individual knowledge, social influences, and healthcare-related factors. Improving public awareness, addressing misconceptions, promoting healthcare provider advocacy, and ensuring affordable, accessible vaccination services are essential to increase HPV vaccine acceptance and strengthen cervical cancer prevention efforts.

KEYWORDS: HPV vaccination, cervical cancer prevention, vaccine uptake, barriers, facilitators, adolescent girls, community-based study.

INTRODUCTION

Cervical cancer remains one of the leading causes of cancer-related illness and death among women worldwide, despite being largely preventable through timely vaccination and regular screening. Persistent infection with high-risk Human Papillomavirus (HPV), particularly genotypes 16 and 18, is responsible for nearly all cases of cervical cancer. Although effective preventive measures are available, the disease continues to disproportionately affect women living in low- and middle-income countries due to inadequate awareness, delayed diagnosis, and limited access to preventive healthcare services. According

to the World Health Organization (WHO), cervical cancer accounts for more than 600,000 new cases and over 340,000 deaths globally each year, with the majority of deaths occurring in resource-constrained settings. These statistics emphasize the urgent need to strengthen primary prevention strategies, especially HPV vaccination among adolescent girls and young women.¹⁻³

Human Papillomavirus is the most common sexually transmitted viral infection, and while most infections resolve spontaneously, persistent infection with oncogenic HPV types can progress to precancerous lesions and invasive cervical cancer over several years. The availability of prophylactic HPV vaccines has transformed cervical cancer prevention by offering highly effective protection against the most common cancer-causing HPV strains. Clinical evidence has consistently demonstrated that vaccination before the onset of sexual activity significantly reduces the incidence of HPV infection, cervical intraepithelial neoplasia, and ultimately cervical cancer. Recognizing this evidence, the World Health Organization has recommended integrating HPV vaccination into national immunization programmes as part of the global strategy to eliminate cervical cancer as a public health problem. Nevertheless, vaccine coverage remains far below the recommended target in many developing countries, including India.⁴⁻⁶

In India, cervical cancer continues to represent a substantial public health burden, with thousands of new cases and deaths reported annually. Although the Government of India has initiated HPV vaccination programmes in selected regions and incorporated preventive strategies into public health policies, awareness regarding HPV infection and vaccination remains inadequate among adolescents, parents, and even some healthcare providers. Several factors contribute to poor vaccine uptake, including limited knowledge, misconceptions regarding vaccine safety and effectiveness, fear of adverse effects, financial constraints, sociocultural beliefs, and inadequate recommendations from healthcare professionals. These barriers are often compounded by disparities in healthcare accessibility, particularly in rural and underserved communities. Consequently, many eligible young females remain unvaccinated despite the availability of effective preventive interventions.⁷⁻⁹

Conversely, several facilitating factors have been identified that positively influence HPV vaccine acceptance and uptake. Adequate knowledge regarding cervical cancer prevention, positive attitudes toward vaccination, parental encouragement, peer support, healthcare provider recommendations, school-based vaccination initiatives, and improved accessibility of immunization services have all been associated with increased vaccine acceptance. Community awareness campaigns and culturally appropriate health education programmes have also demonstrated effectiveness in improving public confidence in HPV vaccination. Since vaccine-related decisions are influenced by a combination of individual, family, community, and health system factors, understanding these determinants within a specific sociocultural context is essential for designing effective intervention strategies. Such evidence is

particularly important for developing community-based programmes that improve vaccination coverage and reduce inequalities in cervical cancer prevention.^{10–13}

Despite growing national and global efforts to promote HPV vaccination, there remains limited community-based evidence regarding the barriers and facilitators influencing vaccine uptake among young females in many parts of India, including Andhra Pradesh. Most available studies have focused on knowledge or attitudes among hospital-based populations rather than examining the broader community context. Generating local evidence is therefore essential for informing public health policies and designing targeted educational interventions that address community-specific challenges. Understanding the factors that encourage or discourage HPV vaccination will assist healthcare professionals, policymakers, and programme planners in developing strategies that improve vaccine acceptance, strengthen preventive healthcare services, and contribute to the long-term reduction of cervical cancer incidence. Therefore, the present study aims to assess the barriers and facilitators influencing HPV vaccine uptake for cervical cancer prevention among young females in selected communities.^{14–16}

OBJECTIVES OF THE STUDY

- To assess the socio-demographic profile, level of knowledge regarding Human Papillomavirus (HPV) infection, and HPV vaccination status among young females in the selected communities.
- To identify the perceived barriers and facilitating factors that influence HPV vaccine acceptance and uptake among young females in the selected communities.
- To examine the association between selected socio-demographic characteristics, knowledge regarding HPV infection, perceived barriers, facilitating factors, and HPV vaccine uptake among young females.

METHODOLOGY:

A community-based quantitative study with a descriptive cross-sectional design was conducted to assess the barriers and facilitators influencing Human Papillomavirus (HPV) vaccine uptake for cervical cancer prevention among young females in selected communities of Venkatachalam, Nellore District, Andhra Pradesh. This design was considered appropriate as it enabled the assessment of participants' knowledge, vaccination status, perceived barriers, and facilitating factors at a single point in time without manipulating any study variables.

The study population comprised young females residing in the selected communities. Participants who met the eligibility criteria, including those aged 9–26 years, residing in the study area during the data collection period, and willing to participate by providing informed consent (with parental consent and participant assent for minors), were included in the study. Young females who had communication

difficulties, severe illness, cognitive impairment, or had previously participated in similar research were excluded. A sample of 100 participants was selected using a probability-based simple random sampling technique to ensure adequate representation of the target population.

Data were collected using a structured, pretested questionnaire developed after an extensive review of the literature and consultation with subject experts. The questionnaire consisted of four sections. The first section collected socio-demographic information, including age, educational status, occupation, marital status, socioeconomic status, religion, family type, area of residence, and HPV vaccination status. The second section comprised 15 multiple-choice questions assessing participants' knowledge regarding HPV infection, cervical cancer, and HPV vaccination. The third section included 12 statements measuring perceived barriers to HPV vaccine uptake, while the fourth section consisted of 10 statements evaluating factors that facilitate vaccine acceptance. Responses to the barriers and facilitators were recorded using a five-point Likert scale ranging from "strongly disagree" to "strongly agree," with higher scores indicating greater perceived barriers or facilitators, respectively.

Content validity of the instrument was established through evaluation by a panel of experts from the fields of community health nursing, obstetrics and gynecological nursing, public health, and biostatistics. Recommendations provided by the experts were incorporated to improve the clarity, relevance, and comprehensiveness of the questionnaire. Reliability was assessed using the test–retest method among participants with characteristics similar to those of the study population, yielding a reliability coefficient of $r = 0.86$, indicating good stability and internal consistency of the instrument. A pilot study involving 10% of the estimated sample was conducted in a community not included in the main study to assess the feasibility of the methodology, the clarity of the questionnaire, and the logistics of data collection. Since no major modifications were required, the pilot participants were excluded from the final analysis.

Ethical approval for the study was obtained from the Institutional Ethics Committee of Narayana College of Nursing, Nellore, before commencement of the research. Administrative permission was secured from the concerned local authorities. All participants were informed about the purpose, procedures, potential benefits, and voluntary nature of participation. Written informed consent was obtained from adult participants, while parental consent and participant assent were obtained for those below 18 years of age. Confidentiality and anonymity of participants' information were maintained throughout the study, and participants were informed of their right to withdraw from the study at any stage without any consequences.

Data collection was carried out over a predetermined period through face-to-face administration of the structured questionnaire in the selected communities. Each participant required approximately 15–20

minutes to complete the questionnaire. The researcher ensured privacy during data collection and clarified any doubts raised by participants without influencing their responses. Completed questionnaires were reviewed for completeness, coded, and entered into the Statistical Package for the Social Sciences (SPSS) version 26.0 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant characteristics and study variables. Inferential statistics, particularly the chi-square test, were employed to determine the association between selected socio-demographic variables, knowledge level, perceived barriers, facilitating factors, and HPV vaccine uptake. Statistical significance was considered at a **p-value < 0.05**. This methodological approach enabled a comprehensive assessment of the factors influencing HPV vaccine uptake among young females and generated evidence that may support the development of targeted community-based interventions for cervical cancer prevention.

RESULTS:

A total of 100 young females participated in the study. The majority of participants (58%) were aged 18–21 years, while 42% belonged to the 15–17 years age group. Nearly half (46%) had completed higher secondary education, followed by secondary education (28%) and graduation or above (26%). Most participants were unmarried (88%) and students (64%). Regarding socioeconomic status, 36% belonged to the middle class and 28% to the lower-middle class. The majority of participants were Hindus (72%), belonged to nuclear families (54%), and resided in rural areas (44%).

Assessment of HPV vaccination status revealed that 50% of the participants had not received any HPV vaccine, whereas 28% were partially vaccinated and only 22% had completed the recommended vaccination schedule. Among vaccinated participants, 20% had received two doses, 18% had received one dose, and 12% had completed three doses. Government healthcare facilities were the most common place of vaccination (24%), followed by private healthcare facilities (14%) and school-based vaccination programmes (10%). Most vaccinated participants had received their first dose between 16 and 18 years of age (22%).

The findings showed varying levels of knowledge regarding HPV infection, cervical cancer prevention, and HPV vaccination. Good knowledge was observed among 22% of participants, followed by average knowledge (20%), very good knowledge (18%), excellent knowledge (14%), below-average knowledge (14%), and poor knowledge (12%). Regarding perceived barriers, 46% of participants experienced a moderate level of barriers, while 30% reported high barriers and 24% reported low barriers. In contrast, facilitating factors were encouraging, with 42% reporting high facilitators, 40% moderate facilitators, and 18% low facilitators toward HPV vaccine uptake.

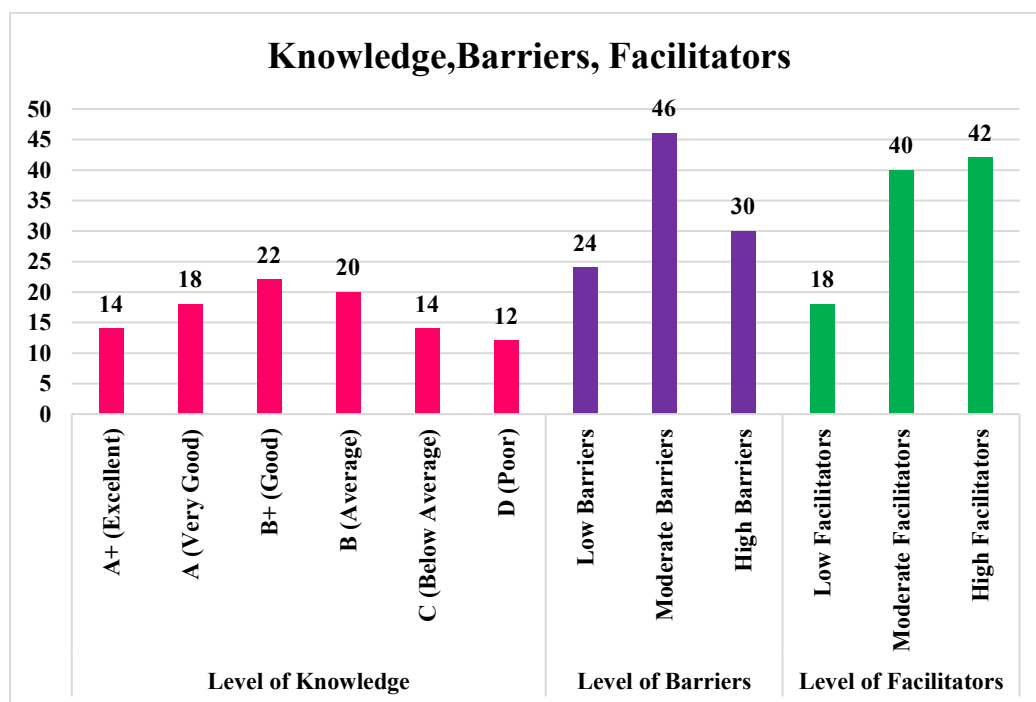


Figure-1: Percentage distribution of Young Females according to Knowledge, Barriers and Facilitators

Table-1: Mean and Standard Deviation of Knowledge, Perceived Barriers, and Facilitators related to HPV Vaccine Uptake among Young Females

n = 100

Variables	Mean	Standard Deviation
Knowledge	9.62	1.48
Barriers	41.85	4.12
Facilitators	39.74	3.96

The mean knowledge score was 9.62 ± 1.48 , indicating a moderate level of knowledge among participants. The mean perceived barrier score was 41.85 ± 4.12 , suggesting that participants experienced a moderate degree of obstacles to HPV vaccination. The mean facilitator score was 39.74 ± 3.96 , reflecting the presence of relatively strong positive factors supporting vaccine acceptance and uptake.

Analysis of the association between study variables and socio-demographic characteristics demonstrated

that educational status and marital status were significantly associated with participants' knowledge regarding HPV infection and vaccination ($p < 0.05$), whereas age, occupation, and area of residence were not significantly associated ($p > 0.05$). Similarly, marital status showed a statistically significant association with perceived barriers to HPV vaccination ($p < 0.05$), while age, education, occupation, and residence were not significantly associated. Furthermore, education level and marital status were significantly associated with facilitating factors influencing HPV vaccine uptake ($p < 0.05$), whereas no significant associations were observed for age, occupation, or area of residence ($p > 0.05$).

Overall, the study findings demonstrate that HPV vaccine coverage among young females remained suboptimal, with only one-fifth of participants being fully vaccinated. Although participants reported moderate levels of knowledge and substantial facilitating factors, moderate-to-high perceived barriers persisted, highlighting important factors that may influence HPV vaccine uptake within the community.

DISCUSSION

The present study explored the barriers and facilitators influencing Human Papillomavirus (HPV) vaccine uptake among young females residing in selected communities. Despite the proven effectiveness of HPV vaccination in preventing cervical cancer, the findings revealed that vaccine uptake remained suboptimal, with only 22% of participants being fully vaccinated and half of the study population remaining unvaccinated. These findings suggest that substantial gaps continue to exist between vaccine availability and utilization within the community. Similar observations have been reported by Bruni et al., who demonstrated that HPV vaccination coverage remains considerably lower in low- and middle-income countries because of inadequate awareness, limited access to immunization services, and socioeconomic inequalities. Likewise, the World Health Organization has highlighted that improving vaccine coverage is essential to achieve the global strategy for cervical cancer elimination.^{17, 18}

Knowledge regarding HPV infection, cervical cancer, and HPV vaccination plays a vital role in influencing vaccine acceptance. In the present study, participants demonstrated an overall moderate level of knowledge, with only a small proportion exhibiting excellent knowledge. This finding indicates that many young females continue to have limited understanding of HPV infection and its role in cervical cancer prevention. Comparable findings were reported by Kessels et al., who observed that insufficient knowledge among adolescents and their parents was a major contributor to poor vaccine acceptance. Similarly, Newman et al. concluded that inadequate awareness and misconceptions regarding vaccine efficacy and safety significantly reduce HPV vaccination rates, particularly in developing countries.^{19, 20} These findings reinforce the need for structured educational programmes targeting adolescents, parents, and communities.

Perceived barriers constituted another important determinant of HPV vaccine uptake. Nearly half of the participants in the present study reported moderate barriers, while almost one-third experienced high barriers. Frequently identified challenges included inadequate awareness, concerns regarding vaccine safety, fear of adverse effects, financial constraints, and limited recommendations from healthcare professionals. These findings are consistent with the systematic review conducted by Gallagher et al., which identified insufficient knowledge, vaccine hesitancy, concerns regarding safety, and accessibility issues as the most common barriers to HPV vaccination worldwide. Similarly, Shapiro et al. reported that sociocultural beliefs, misinformation, and parental concerns remain significant obstacles to vaccine acceptance, particularly in conservative societies where discussions about reproductive health are limited.^{21, 22}

The present study also identified several facilitating factors that positively influenced HPV vaccine uptake. Family encouragement, improved awareness, accessibility of vaccination services, and positive healthcare provider recommendations were among the most commonly reported facilitators. More than two-fifths of the participants demonstrated high facilitator scores, indicating that supportive environments can substantially enhance vaccination behaviour. These findings concur with those of Brewer et al., who demonstrated that healthcare provider recommendation is the strongest predictor of HPV vaccine acceptance among adolescents. Likewise, Gilkey and McRee emphasized that parental support, school-based immunization programmes, and effective communication by healthcare professionals significantly improve vaccine uptake and completion rates.^{23, 24}

The association analysis demonstrated that educational status was significantly associated with knowledge and facilitating factors related to HPV vaccination. Participants with higher educational attainment were more likely to possess better knowledge and perceive stronger facilitators toward vaccination. Similar findings were reported by Donadiki et al., who observed that education positively influences awareness, health literacy, and preventive health-seeking behaviour. Higher educational attainment enables individuals to access reliable health information and make informed decisions regarding vaccination.²⁵ Marital status also demonstrated a statistically significant association with knowledge, barriers, and facilitators in the present study. This may reflect differences in health responsibilities, exposure to reproductive health information, and healthcare utilization between married and unmarried women. Comparable findings have been reported in studies from Asian countries, where marital status influenced women's attitudes toward preventive healthcare services and vaccination.²⁶

Interestingly, age, occupation, and area of residence were not significantly associated with knowledge, perceived barriers, or facilitating factors in the present study. These findings suggest that inadequate awareness and vaccine hesitancy are common across different demographic groups within the community.

Similar observations were reported by Loke et al., who found that demographic characteristics alone do not consistently predict HPV vaccine acceptance unless accompanied by differences in health literacy, access to healthcare, and social support.²⁷ Therefore, community-wide educational interventions may be more effective than programmes targeting specific demographic groups.

The overall findings of the present study indicate that although facilitating factors such as family support and healthcare accessibility are present, moderate levels of knowledge and persistent barriers continue to hinder HPV vaccine uptake among young females. These findings emphasize the importance of strengthening community awareness programmes, integrating HPV vaccination into school and primary healthcare services, enhancing healthcare provider counselling, and implementing culturally appropriate educational strategies. Such interventions are expected to improve vaccine acceptance and contribute toward achieving the World Health Organization's goal of eliminating cervical cancer as a public health problem.²⁸

CONCLUSION

The present study demonstrated that HPV vaccine uptake among young females remains inadequate despite the availability of safe and effective vaccines. Moderate levels of knowledge, together with persistent barriers such as poor awareness, concerns regarding vaccine safety, financial limitations, and inadequate healthcare provider recommendations, continue to influence vaccination decisions. At the same time, family support, positive healthcare provider communication, accessible vaccination services, and improved health education emerged as important facilitators of vaccine acceptance. Educational attainment and marital status showed significant associations with knowledge and vaccination-related perceptions, indicating the importance of addressing social determinants while designing intervention strategies.

The findings highlight the need for comprehensive community-based awareness programmes, school and college health education initiatives, stronger involvement of healthcare professionals in vaccine counselling, and wider availability of affordable HPV vaccination services. Implementing evidence-based public health interventions that address both individual and health system barriers can substantially improve HPV vaccine uptake and strengthen cervical cancer prevention among young females.

REFERENCES:

1. World Health Organization. Cervical cancer [Internet]. Geneva: World Health Organization; 2024 [cited 2026 Jul 20]. Available from: [WHO Cervical Cancer](#)

2. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2024;74(3):229-63.
3. International Agency for Research on Cancer. Global Cancer Observatory: Cancer Today [Internet]. Lyon: IARC; 2024 [cited 2026 Jul 20]. Available from: [Global Cancer Observatory](#)
4. World Health Organization. Human papillomavirus vaccines: WHO position paper, December 2022. *Wkly Epidemiol Rec.* 2022;97(50):645-72.
5. Garland SM, Kjaer SK, Muñoz N, Block SL, Brown DR, DiNubile MJ, et al. Impact and effectiveness of human papillomavirus vaccination: A systematic review. *Clin Microbiol Infect.* 2016;22(Suppl 5):S2-S15.
6. Brisson M, Kim JJ, Canfell K, Drolet M, Gingras G, Burger EA, et al. Impact of HPV vaccination and cervical screening on cervical cancer elimination: A comparative modelling analysis in 78 low-income and lower-middle-income countries. *Lancet.* 2020;395(10224):575-90.
7. ICO/IARC Information Centre on HPV and Cancer. Human papillomavirus and related diseases report: India. Barcelona: ICO/IARC Information Centre; 2024.
8. Ministry of Health and Family Welfare. National Programme for Prevention and Control of Non-Communicable Diseases. New Delhi: Government of India; 2024.
9. Basu P, Mehta S, Grover S, et al. Human papillomavirus vaccination in India: Progress, challenges and opportunities. *Lancet Reg Health Southeast Asia.* 2023;14:100210.
10. MacDonald NE. Vaccine hesitancy: Definition, scope and determinants. *Vaccine.* 2015;33(34):4161-4.
11. Brewer NT, Hall ME, Malo TL, Gilkey MB, Quinn B, Lathren C. Announcements versus conversations to improve HPV vaccination coverage: A randomized trial. *Pediatrics.* 2017;139(1):e20161764.
12. World Health Organization. Global strategy to accelerate the elimination of cervical cancer as a public health problem. Geneva: World Health Organization; 2020.
13. United Nations Children's Fund. Human papillomavirus vaccine: Immunization programme guidance. New York: UNICEF; 2024.
14. Gavi, the Vaccine Alliance. Human papillomavirus vaccine support programme [Internet]. Geneva: Gavi; 2024 [cited 2026 Jul 20]. Available from: [Gavi HPV Programme](#)
15. International Agency for Research on Cancer. IARC handbooks of cancer prevention: Cervix cancer screening. Lyon: IARC; 2022.
16. World Health Organization. Immunization agenda 2030: A global strategy to leave no one behind. Geneva: World Health Organization; 2020.

17. Bruni L, Saura-Lázaro A, Montoliu A, Brotons M, Alemany L, Diallo MS, et al. HPV vaccination introduction worldwide and WHO/UNICEF estimates of national HPV immunization coverage 2010-2019. *Prev Med.* 2021;144:106399.
18. World Health Organization. Global strategy to accelerate the elimination of cervical cancer as a public health problem. Geneva: World Health Organization; 2020.
19. Kessels SJ, Marshall HS, Watson M, Braunack-Mayer AJ, Reuzel RP. Factors associated with HPV vaccine uptake in teenage girls: A systematic review. *Vaccine.* 2012;30(24):3546-56.
20. Newman PA, Logie CH, Lacombe-Duncan A, Baiden P, Tepjan S, Rubincam C, et al. Parents' uptake of human papillomavirus vaccines for their children: A systematic review and meta-analysis. *BMJ Open.* 2018;8(4):e019206.
21. Gallagher KE, LaMontagne DS, Watson-Jones D. Status of HPV vaccine introduction and barriers to country uptake. *Vaccine.* 2018;36(32 Pt A):4761-7.
22. Shapiro GK, Tatar O, Dubé E, Amsel R, Prue G, Zimet GD, et al. The vaccine hesitancy scale: Psychometric properties and validation. *Vaccine.* 2018;36(5):660-7.
23. Brewer NT, Hall ME, Malo TL, Gilkey MB, Quinn B, Lathren C. Announcements versus conversations to improve HPV vaccination coverage: A randomized trial. *Pediatrics.* 2017;139(1):e20161764.
24. Gilkey MB, McRee AL. Provider communication about HPV vaccination: A systematic review. *Hum Vaccin Immunother.* 2016;12(6):1454-68.
25. Donadiki EM, Jiménez-García R, Hernández-Barrera V, Carrasco-Garrido P, López de Andrés A, Jimenez-Trujillo I, et al. Health belief model applied to HPV vaccination among female university students. *Vaccine.* 2014;32(39):5013-8.
26. Holman DM, Benard V, Roland KB, Watson M, Liddon N, Stokley S. Barriers to human papillomavirus vaccination among US adolescents: A systematic review of the literature. *JAMA Pediatr.* 2014;168(1):76-82.
27. Loke AY, Kwan ML, Wong YT, Wong AKY. The uptake of human papillomavirus vaccination and its associated factors among adolescents: A systematic review. *Int J Environ Res Public Health.* 2017;14(12):1419.
28. World Health Organization. Human papillomavirus vaccines: WHO position paper, December 2022. *Wkly Epidemiol Rec.* 2022;97(50):645-72.

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