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ACCEPTANCE OF AND ATTITUDES TOWARD HUMAN PAPILLOMAVIRUS (HPV) VACCINATION AMONG THE MALE POPULATION - A NARRATIVE REVIEW

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ABSTRACT

Objectives: The aim of the narrative review “Acceptance and Attitudes Toward Human Papillomavirus (HPV) Vaccination Among the Male Population—A Narrative Review” is to present studies available in the literature concerning men’s acceptance, attitudes, and willingness to receive HPV vaccination, taking into account their social and demographic determinants.

Methods: A literature review was conducted in the PubMed and ScienceDirect databases, covering publications from 2021 to 2026. The search was tailored to the specific characteristics of each database using appropriate filters.

Key findings: Decisions regarding HPV vaccination made by men and boys—either independently or with parental involvement—depend on many factors. These include: awareness of the risk and knowledge about HPV and HPV vaccination, vaccination costs, economic status, health insurance coverage, vaccine availability, systemic and sociocultural barriers, disability, special needs, illness, national health policy, logistical issues, perceived vaccine safety, health education, religious and cultural beliefs, general attitudes toward vaccination, ethnicity, place of residence, marital status, exposure to adverse childhood experiences, educational level, age, sexual orientation, recommendations from healthcare providers, and the influence of relatives and friends.

Conclusions: This review highlights a broad spectrum of factors influencing acceptance of and attitudes toward HPV vaccination among men. The findings underscore the need for multilevel interventions that include health education, improved clinical communication, efforts to reduce misinformation, and the implementation of gender-neutral strategies.

KEYWORDS

HPV Vaccine, Use Among Men, Use Among Males, Attitudes, Acceptance, Willingness

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1. Introduction

HPV (human papillomavirus) is the most common sexually transmitted infection (STI) worldwide. It is estimated that most sexually active individuals become infected with at least one type of HPV during their lifetime, often within a few years of becoming sexually active. HPV infection may be asymptomatic, but it can also lead to the development of both benign lesions, such as warts, and cancers in both sexes, including cervical, anal, and penile cancers, as well as head and neck cancers [1, 2].

The literature indicates that men are at significant risk of HPV infection and may serve as an important reservoir for virus transmission. Importantly, high-risk HPV types are detected more frequently in men, and they are disproportionately at higher risk for HPV-related head and neck cancers [2].

The HPV vaccines discovered and approved to date are bivalent, quadrivalent, and nonavalent. Studies indicate that vaccinating boys can significantly reduce the incidence of precancerous lesions and HPV-related cancers, and the nonavalent vaccine provides a higher level of protection compared to quadrivalent vaccines [3, 4, 5].

As part of its global strategy to eliminate HPV, the World Health Organization (WHO) recommends incorporating HPV vaccination into national immunization programs and aims to achieve high population vaccination coverage by 2030 [6]. A 2025 study showed that of the 148 countries with HPV vaccination programs, 76 (51%) included vaccination for both sexes. At the same time, vaccination coverage among boys remains lower than among girls, reflecting the historical focus of vaccination programs primarily on the female population [7].

Despite the effectiveness of this preventive measure, many studies have shown differences in the level of acceptance of HPV vaccination and lower vaccination rates among males [2, 5, 8, 9, 10, 11, 12,

13, 14, 15, 16, 17]. However, there are some exceptions in the scientific literature indicating higher levels of vaccine acceptance among males [18].

HPV vaccination and related health decisions constitute an interdisciplinary field encompassing medicine, public health, and psychology, which requires an analysis of the multifactorial determinants of attitudes toward vaccination [19].

Despite the large number of studies on HPV vaccination, most of the literature focuses on women. The number of studies focusing solely on male populations, rather than mixed populations, is limited. The literature lacks studies summarizing attitudes, acceptance, and decision-making factors regarding HPV vaccination in the male population in a broad sense, encompassing various age groups and social roles; therefore, this review aims to address this gap.

The aim of this narrative review is to present the available studies on men's acceptance, attitudes, and willingness to receive HPV vaccination, taking into account their social and demographic determinants.

2. Methodology: The literature review was conducted in the PubMed and ScienceDirect databases, covering publications from 2021 to 2026. The search was tailored to the specific characteristics of each database using available filters.

In the PubMed database, the "Free full text" filter was applied, and the following publication types were included: Meta-Analysis, Randomized Controlled Trial, Review, Systematic Review, and Observational Study. In the ScienceDirect database, the "Open Access" and "Open Archive" filters were applied, covering Review Articles and Research Articles.

The selection of publications was narrative in nature and was based on an assessment of their relevance to the review topic, based on titles, abstracts, and full-text articles.

In selecting the literature, terms referring to men—such as "gender," "sex," "man," "men," "male," "boy," "son," "father," and "husband"—were used to identify publications pertaining to the study population.

Publications in which the dominant analytical approach was based on categories related to gender identity were excluded to ensure greater consistency in the literature.

3. Results

3.1 Risk Awareness and Knowledge of HPV

Risk awareness and knowledge of HPV are among the most frequently analyzed factors influencing acceptance of HPV vaccination among men. Studies conducted in various populations, including countries with high vaccination rates such as Australia, point to persistent gaps in awareness and understanding of the benefits of HPV vaccination, particularly among men [20].

HPV is still largely perceived as a virus primarily associated with women's health, which is linked to limited public awareness, cultural stigma, and a low perceived susceptibility to infection. Such beliefs have been reported among both men and women [21, 22, 23, 24]. Consequently, HPV vaccination is still primarily associated with cervical cancer prevention and women's health [25, 26].

The literature indicates that the perception of infection risk, knowledge about HPV, and attitudes toward vaccination are often linked to acceptance of the vaccine among men [4]. At the same time, there is a tendency to underestimate one's own risk of infection, which may limit motivation to get vaccinated [5].

Despite this, some men declare their willingness to get vaccinated, support the promotion of HPV vaccination among men, and express a desire to recommend the vaccine to those in their social circles [27]. Men are also aware of their role in transmitting the virus to their sexual partners [23].

Similar observations apply to parents of boys, who understand the risks associated with the potential transmission of HPV to their sons' future partners but demonstrate lower awareness of the direct health benefits of vaccination for the boys themselves [28].

Studies on parents consistently indicate that the level of knowledge about HPV influences decisions regarding the vaccination of children. Insufficient knowledge among parents about HPV infection and preventive vaccination is associated with lower acceptance of vaccination for sons compared with daughters [6], whilst greater parental awareness of HPV vaccination is associated with a higher likelihood of boys being vaccinated [19]. Women generally demonstrate a higher level of awareness of HPV and greater concerns about infection than men [29].

Some of the studies also analysed differences between the parents of boys and girls. A study conducted in Kuwait showed that perceptions of the benefits, severity of the infection and barriers to vaccination differed depending on the child's gender. Furthermore, fathers were more likely than mothers to perceive a higher risk of HPV infection and demonstrated a higher level of self-efficacy with regard to vaccination [30]. The similar importance of fathers' roles was confirmed in a study conducted in Kenya, where the relationship between caregivers' knowledge and the decision to vaccinate was stronger among fathers than among mothers [31].

Concerns about vaccine safety and limited knowledge regarding HPV prevention also remain significant issues. Parents still view the vaccine as a relatively new medical intervention and express uncertainty regarding its safety for boys [1, 32, 33]. Attention has also been drawn to gaps in awareness regarding HPV diagnosis in men, including the lack of routine screening, which may influence perceptions of prevention strategies [1, 23]. Misconceptions regarding HPV prevention have also emerged, such as the perception that using condoms or undergoing regular checkups is a sufficient alternative to vaccination [23].

Overall, the study results indicate that factors such as knowledge about HPV, risk awareness, access to information, and perceived susceptibility to infection are described as significant determinants of acceptance of HPV vaccination among men [9, 13, 16, 33, 34, 35, 36, 37, 38, 39, 40, 41].

3.2 Vaccination Costs, Economic Status, and Insurance

An important financial consideration is the price of the vaccine and the level of reimbursement. In the literature, the cost of HPV vaccination is often perceived as high by men [8, 12, 39]. The cost of the vaccine may play a significant role in male acceptance of vaccination [4, 12, 34, 41, 42].

It has been noted that lower economic status and reliance on public health insurance were generally associated with higher vaccination rates among men [19].

3.3 Limited Supply and Availability of Vaccines

Vaccine availability influences vaccination rates among men. The literature describes periodic supply-side constraints resulting from increased global demand, which may have affected the pace of vaccination program implementation in some countries. The historical focus of HPV vaccination programs on the female population stemmed primarily from public health priorities related to cervical cancer prevention. [3] There have been times in the history of vaccination when production capacity and regulations at the time limited the ability to expand programs to include men [17, 43]; however, it should be noted that the situation may have changed since the publication of these articles.

3.4 Systemic and Sociocultural Barriers, Disability/Special Needs/Illness

According to the literature, parents of boys increasingly cited systemic and sociocultural barriers, disability, special health needs, or illness as reasons for their lack of intention to vaccinate against HPV [44]. However, with regard to sociocultural factors during adolescence, these seemed to contribute to an increase in HPV vaccination rates among males, which was linked to parents' reduced concerns about promiscuity and sexual initiation among boys [45].

3.5 National Policy

An important consideration when studying vaccination acceptance among males is whether a given country has a gender-neutral vaccination policy and is taking steps in that direction [11, 21, 36, 39]. The absence of a public policy providing free or affordable HPV vaccines limits vaccination rates among males [12].

According to the literature, in countries of the Middle East and North Africa (MENA) region, HPV vaccination for boys was not recommended, a fact that the authors attributed to the prevalence of male circumcision [22].

3.6 Prisoners

An important aspect is to consider the prison population. There, too, a gender-neutral policy is needed due to the high prevalence of members of target vaccination groups, such as sex workers, the prevalence of risky sexual behaviors, such as anal intercourse, and overcrowding [46, 47]. To enable vaccination in this group, given the limited budget and potential challenges with maintaining the cold chain, the authors [47] suggest considering single-dose vaccines.

3.7 Logistical Challenges

One of the key elements in organizing a vaccination program is the location of the vaccination site. The literature has highlighted men who have sex with men (MSM), for whom information on where to get vaccinated is not always clear [39]. Furthermore, MSM prefer clinics that are welcoming to men belonging to sexual minorities [34, 41]. It is also important for healthcare providers to proactively offer HPV vaccinations outside of sexual health clinics to gay, bisexual, and other men who have sex with men (GBMSM), given the higher prevalence and incidence of HPV infection among this group compared to heterosexual men [25].

It is worth noting that inclusive vaccination programs offering free vaccinations to both men and women have been described. Vaccination programs implemented on college campuses utilized flexible service delivery models, such as periodic campus clinics and pharmacies, which increased vaccine accessibility with limited infrastructure requirements. [5]

3.8 The Issue of Trust

Lack of trust in vaccines is usually associated with fear of side effects [5, 8, 9, 11, 21, 22, 35, 44]. A possible association was observed between lower awareness of adverse events and a higher willingness among men to consider vaccination for their children [48].

Interestingly, in one study, the overall rate of adverse event reporting was significantly higher among women and adults compared to men and both children and adolescents [49]. Another study highlighted women's lower trust in the HPV vaccine [50]. In the literature, this lack of trust is also linked to misinformation [21, 44].

3.9 Health Education

The need for education regarding the perception of HPV vaccination as a means of preventing HPV infections and various cancers has been demonstrated, a point emphasized particularly among men [45]. Parents with a positive attitude toward HPV vaccination were also more likely to express a need for additional information about the vaccine [3].

Additionally, educational interventions appear to have a stronger impact on fathers than on mothers [48].

In certain communities, educational efforts should be specifically targeted at men, particularly where they are the ones who decide whether their child receives the vaccine [51].

3.10 Religious and Cultural Beliefs

Religious and cultural beliefs can act as a barrier to accepting vaccination [36]. Reluctance toward vaccination has been observed among men despite recommendations from religious leaders, indicating a more complex decision-making process [22].

3.11 General Attitudes Toward Vaccination

According to the literature, receiving other vaccinations was associated with higher HPV vaccination rates among males [19]. It was noted that sons were less likely to begin the HPV vaccination series only when their parents had not been vaccinated [26].

3.12 Origin and Place of Residence

Differences in vaccination uptake were observed among males based on their country of origin within a given country [22]. Depending on the country, who makes the decision about vaccination may depend on gender [37, 51]. Hispanic race was associated with higher vaccination rates among males, as was living in urban areas [19].

3.13 Marital Status

The findings regarding the impact of marital status on men's attitudes toward HPV vaccination are inconclusive. In some cases, being single was associated with a positive attitude toward vaccination, while in others it was associated with a negative attitude [22]. People in relationships were more willing to get vaccinated [24, 27]. One study found that teenagers with single parents had a higher vaccination coverage rate [19].

3.14 Exposure to Adverse Childhood Experiences

Exposure to adverse childhood experiences was associated with lower vaccination rates among children, including boys [52].

3.15 Educational Level and Age

Medical education was associated with higher acceptance of vaccination [4, 27], as was higher educational attainment [22]. Interestingly, the gender difference—manifesting as lower vaccination rates among men—persisted among medical students [5].

A low level of parental education was associated with lower vaccination rates among boys [12], while a higher level of parental education was associated with more frequent initiation of vaccination [14].

The age range of 10 to 20 years was associated with higher vaccination rates [19]. Higher acceptance of vaccinations was observed among students [13, 22], but not always—sometimes it was lower than among employed and unemployed individuals [38].

3.16 Sexual Orientation

Based on the available literature, it can be concluded that MSM, including homosexual men, demonstrate greater acceptance of vaccination [4, 5, 21]. It is worth noting that, in the case of MSM, open communication with a doctor may be a factor promoting vaccination [53]. Heterosexual men may benefit from herd immunity resulting from the vaccination of women. However, this does not apply to MSM; therefore, regardless of gender, it is necessary to ensure an adequate level of vaccination coverage [54].

3.17 Recommendations from Healthcare Providers

Recommendations from healthcare providers can positively influence vaccination decisions [4, 11, 24, 35]. However, some men reported a lack of sufficient recommendations [12, 39]. Such recommendations had a greater impact on parents of daughters than on parents of sons [30], and among parents of daughters, a conversation with a healthcare professional had a stronger influence on the decision of the father [31].

3.18 Influence and Recommendations from Relatives and Friends

The literature also notes that males whose relatives or friends had been vaccinated were more willing to get vaccinated [27]. Recommendations from close relatives and acquaintances also played a role in the decision to receive the vaccine [4, 35], as did knowing someone infected with HPV or diagnosed with cancer [1, 33]. It has been noted that men may influence their partners' decisions regarding HPV vaccination [43].

4. Discussion

The issue of insufficient acceptance of HPV vaccination among males requires an examination of the causes and consideration of potential solutions. According to the literature, barriers to vaccinating boys are similar to those encountered with girls [55]; however, there are relatively few studies focusing on boys [6]. One possible explanation for the smaller number of studies may be the later inclusion or current exclusion of boys from HPV vaccination programs in various countries.

MSM are a group requiring special attention among men, as they are more likely to develop HPV-related diseases in the genital and anal regions, such as anal cancer, than heterosexual men [56].

One issue worth considering is the role of men in decisions regarding childhood vaccinations. Sometimes fathers are the primary decision-makers [45, 50]. For this reason, it is important to gather fathers' views on HPV vaccination and the factors influencing their decisions [31, 57]. Some studies indicate a higher level of acceptance of childhood vaccinations among fathers than among mothers [18, 48], although this is not always the case [57]. There are reports in the literature that fathers are less involved in the vaccination process, which authors link to the concept of gender roles [29], although fathers' approaches to deciding on their children's vaccinations can vary greatly [55]. Differences have been noted in fathers' decisions regarding HPV vaccination depending on the child's gender. One study reports that having a daughter was associated with a higher likelihood of accepting the HPV vaccine [29].

The impact of being a boy on parents' vaccination decisions should be considered here. For example, a significant effect of any reminder on receiving the next required dose of the HPV vaccine was observed among boys, but not among girls [58]. The authors of the study on this topic suspect that the differences in results between the two genders are due to differing concerns about vaccine side effects, differing perceptions of their children's sexual activity, baseline levels of awareness about HPV and vaccination, previously received recommendations. The literature provides evidence that parents are less willing to have their sons vaccinated than their daughters [6, 17].

It is worth considering the source of the disparity between the number of vaccinated boys and girls. One possible reason may be the lower percentage of healthcare professionals recommending vaccination for boys—58% (95% CI: 0.40, 0.75) and 29% (95% CI: 0.18, 0.41) [59]. A review citing earlier studies (Agawu et al. 2015; Gilkey et al. 2012) indicated that personalized, gender-specific recommendations could improve vaccination rates among adolescent boys [14].

The type of information conveyed to the parents of boys and to men themselves is significant. The literature indicates that males show greater acceptance of vaccination when health communication emphasizes the risk of gender-specific cancers and other HPV-related consequences beyond cervical cancer [17, 60]. Studies cited in the results of our review indicate that parents influenced the decision-making process among adolescents. However, there are also cases where the decision is made by the adolescent, for example, among MSM [45].

One study indicated that a physician's gender and knowledge of HPV may influence how they recommend vaccination [22].

The literature highlights the need for consistent recommendations regarding vaccination of males from healthcare providers, achieved through training for healthcare workers to increase vaccination rates [19].

When promoting vaccination, it is important to focus on early education [27], culturally appropriate messaging and the involvement of trusted community members. Among men, as in other groups, developing appropriate interventions and using communication techniques targeted at a specific factor or group of factors causing resistance could help increase acceptance of vaccination.

Gender-neutral vaccination promotion [23] and appeals to social responsibility may increase trust and vaccination rates among men [21]. It appears that gender-neutral HPV vaccination strategies can reduce the stigma associated with vaccination [55].

According to the literature, among awareness-raising initiatives, those conducted through social networks and social media have a greater impact on individuals compared to those that rely on brochures and printed materials. Therefore, both the content and the form of messages directed at men and parents of boys are crucial in conveying information. The need for initiatives regarding HPV and HPV vaccination specifically targeted at men has been emphasized in order to strengthen their engagement in preventive health care [3].

In addition to providing recommendations, interventions such as media campaigns tailored to the parents of teenage boys are also needed to combat misinformation about vaccination [44].

An issue that has received less attention in research—and one that should be considered when designing interventions—is the influence of social norms on the decision to get vaccinated. A study has been published suggesting that factors related to gender norms may influence vaccination intentions among men. Higher levels of traits associated with masculinity and self-reliance were linked to greater susceptibility to social context, including the doctor's gender and the perceived level of acceptance of vaccination among other men [61].

Attention has been drawn to the importance of frequent contact with healthcare providers, which creates more opportunities to discuss HPV and vaccination and to convey recommendations that may positively influence vaccination acceptance [5, 19]. It is important to engage the community in the discussion [35].

Choosing the right timing for communication about vaccination may also be crucial—for example, during a period of heightened interest in vaccines due to the COVID-19 pandemic [29]. Among parents of children eligible for the HPV vaccine, fathers and parents of boys were significantly more likely to say that the COVID-19 pandemic had contributed to a more positive view of vaccinating their children [62].

Another issue to consider is the number of vaccine doses administered. In the context of vaccination strategies, single-dose regimens are being considered, as they could increase vaccine

accessibility in populations with lower vaccination coverage [6]. As noted in the Results section of this review, single-dose vaccinations may prove particularly beneficial for certain groups, such as prisoners. At the same time, administering a single dose will increase vaccine availability, for example, for boys. A study conducted in Tanzania provides evidence of the acceptability of single-dose HPV vaccination among men [35]. However, caution is still warranted when reducing the number of doses, as the literature indicates that it is unknown whether a single dose of the vaccine will provide sufficient protection [54].

HPV vaccination for men is viewed as an important issue in terms of gender equality and the economic burden of disease [35]. The possibility of implementing health policy strategies, such as raising awareness and knowledge among parents as key decision-makers in the vaccination process, is highlighted [19]. The importance of interventions targeting specific groups is also emphasized, such as combining HPV vaccination with recommendations for HIV prevention—Pre-Exposure Prophylaxis (PrEP)—and strengthening the competence of healthcare personnel regarding MSM health [53].

Vaccinations administered to men also strengthen the population's herd immunity [54]. Calls for social responsibility may increase vaccination rates among men [21]. This is important not only in the MSM population but also among heterosexual men, given that men are the primary vector of HPV transmission to women [43] and often have more sexual partners than women [37].

Limitations: When analyzing the results of this review, one must take into account the heterogeneity of the included studies in terms of population, countries, and research methods used.

Conclusions

This review indicates that acceptance of HPV vaccination among men is influenced by a combination of factors, including knowledge, perceived risk of infection, sociocultural factors, systemic determinants, and communication with healthcare providers. Despite the growing number of countries implementing gender-neutral HPV vaccination programs, significant differences in vaccination rates between boys and girls are still observed in the literature.

The findings of this review highlight the role of social norms and gender-related factors in shaping men's health decisions regarding HPV prevention. Attitudes toward vaccination may depend on the social context, including physicians' recommendations, the child's gender, and perceived norms regarding masculinity and health behaviors among other men. At the same time, the influence of parents on decisions regarding their children's vaccination is evident, highlighting the need to incorporate their perspective into public health strategies and to implement appropriate educational interventions that raise their awareness of HPV. Depending on cultural factors in a given region, the father's consent may be crucial in deciding whether to vaccinate a child.

Key barriers to vaccination acceptance include insufficient awareness of HPV as a threat to men, concerns about potential vaccine side effects, limited access to vaccinations and a lack of consistent, gender-specific recommendations from healthcare providers. Economic factors and systemic inequalities in access to preventive care also play a role.

The results of this review suggest that increasing vaccination coverage among men and boys requires multi-level interventions that include health education, improved clinical communication, efforts to reduce misinformation, and the implementation of gender-neutral strategies. When communicating information about HPV and HPV vaccines, the method of delivery, the content of the message, and the timing of its delivery are all important. It may be particularly important to tailor the message to specific social groups and also to strengthen the role of healthcare professionals in recommending vaccination and engaging in open dialogue with patients.

In summary, increasing the level of acceptance of HPV vaccination among men requires coordinated efforts at the individual, systemic, and societal levels, taking into account various factors, discussed in this review.

REFERENCES

1. Becker, E. R., Shegog, R., Savas, L. S., Frost, E. L., Healy, C. M., Spinner, S. W., & Vernon, S. W. (2021). Informing content and feature design of a parent-focused human papillomavirus vaccination digital behavior change intervention: Synchronous text-based focus group study. *JMIR Formative Research*, 5(11), e28846. <https://doi.org/10.2196/28846>
2. Fleszar-Pavlović, S. E., & Cameron, L. D. (2024). Developing a narrative communication intervention in the context of HPV vaccination. *PEC Innovation*, 4, 100272. <https://doi.org/10.1016/j.pecinn.2024.100272>
3. Valdecantos, R. L., Sorrentino, M., Mercogliano, M., Giordano, V., Trama, U., Triassi, M., & Palladino, R. (2025). The structural and organizational aspects of the human papillomavirus vaccine affecting immunization coverage in Europe: A systematic review. *BMC Public Health*, 25(1), 1254. <https://doi.org/10.1186/s12889-025-22343-w>
4. Shen, F., Du, Y., Cao, K., Chen, C., Yang, M., Yan, R., & Yang, S. (2023). Acceptance of the human papillomavirus vaccine among general men and men with a same-sex orientation and its influencing factors: A systematic review and meta-analysis. *Vaccines*, 12(1), 16. <https://doi.org/10.3390/vaccines12010016>
5. Yan, Y., Guan, S., Chen, W., Shi, J., Chao, R., Fang, J., Zheng, C., & Yang, Z. (2026). Trends, disparities, and multilevel interventions: A global review of HPV vaccination among university students. *Human Vaccines & Immunotherapeutics*, 22(1), 2667395. <https://doi.org/10.1080/21645515.2026.2667395>
6. Heyde, S., Osmani, V., Schauburger, G., Cooney, C., & Klug, S. J. (2024). Global parental acceptance, attitudes, and knowledge regarding human papillomavirus vaccinations for their children: A systematic literature review and meta-analysis. *BMC Women's Health*, 24(1), 537. <https://doi.org/10.1186/s12905-024-03377-5>
7. Han, J., Zhang, L., Chen, Y., Zhang, Y., Wang, L., Cai, R., . . . Zhu, L. (2025). Global HPV vaccination programs and coverage rates: A systematic review. *EClinicalMedicine*, 84. <https://doi.org/10.1016/j.eclinm.2025.103290>
8. Iwami, M., Bouaddi, O., Razai, M. S., Mansour, R., Morais, B., Ali, N. M., Crawshaw, A. F., Bojang, S., Seedat, F., Deal, A., Webb, S., Carter, J., Aspray, N., Clemente, N. S., Arroyo-Laguna, J., Krishna, S., Augustin, Y., Staines, H. M., & Hargreaves, S. (2025). Drivers of human papillomavirus vaccine uptake in migrant populations and interventions to improve coverage: A systematic review and meta-analysis. *The Lancet Public Health*, 10(8), e693–e711. [https://doi.org/10.1016/S2468-2667\(25\)00148-3](https://doi.org/10.1016/S2468-2667(25)00148-3)
9. Cunningham-Erves, J., Sanderson, M., Jin, S. W., Davis, J., & Brandt, H. M. (2025). Predictors of HPV vaccination coverage among adolescents in Tennessee during the COVID-19 pandemic: A cross-sectional study. *Vaccine*, 46, 126581. <https://doi.org/10.1016/j.vaccine.2024.126581>
10. Krokidi, E., Rao, A. P., Ambrosino, E., & Thomas, P. P. M. (2023). The impact of health education interventions on HPV vaccination uptake, awareness, and acceptance among people under 30 years old in India: A literature review with systematic search. *Frontiers in Reproductive Health*, 5, 1151179. <https://doi.org/10.3389/frph.2023.1151179>
11. Zahid, S. I., Alnuaimi, B., Tamimi, K., Zahid, N. I., Al Saad, L., Zahid, M. I., Muttappallymyalil, J., & Sreedharan, J. (2025). Human papillomavirus (HPV) vaccine utilization and its determinants among adolescents in the United Arab Emirates (UAE): A review. *Cureus*, 17(9), e93179. <https://doi.org/10.7759/cureus.93179>
12. Sono, S., Sukhanonsawat, N., Naknuan, N., Auttasongkroh, P., Suwanno, R., Kiratikosol, K., . . . Laomanachareon, S. (2024). Human papillomavirus vaccination status among university students in Southern Thailand: A cross-sectional study. *Preventive Medicine Reports*, 46, 102857. <https://doi.org/10.1016/j.pmedr.2024.102857>
13. Xie, L., Ren, J., Min, S., Zhu, X., Xu, D., Qiao, K., . . . Tan, Y. (2023). Knowledge, attitude, and perception regarding HPV-related diseases and vaccination among the general public in Guizhou Province, China. *Vaccine*, 41(5), 1119–1131. <https://doi.org/10.1016/j.vaccine.2022.12.027>
14. Mullin, T., & Von Ah, D. (2026). Factors influencing HPV vaccination uptake in adolescents: Evidence to guide clinical practice. *Worldviews on Evidence-Based Nursing*, 23(1), e70120. <https://doi.org/10.1111/wvn.70120>
15. Edelstein, M., Shibli, H., & Bornstein, J. (2025). Differences in knowledge, attitudes, and intentions toward HPV vaccination among young adults from diverse sociocultural groups in Israel: A cross-sectional study. *Vaccine*, 44, 126548. <https://doi.org/10.1016/j.vaccine.2024.126548>
16. Soares, L. M. C., de Medonca, A. E. O., de Souza, D. L. B., Carvalho, A. V., Flores, M. G., Neto, A. M., . . . Rodrigues, A. N. (2025). Factors associated with HPV vaccine hesitancy: A nationally representative cross-sectional study. *Vaccine*, 59, 127278. <https://doi.org/10.1016/j.vaccine.2025.127278>
17. Huang, Z., Ji, M., Ren, J., Sun, X., Boulton, M. L., Zikmund-Fisher, B. J., & Wagner, A. L. (2022). Effect of the framing of HPV vaccination on parents' willingness to accept an HPV vaccine. *Vaccine*, 40(6), 897–903. <https://doi.org/10.1016/j.vaccine.2021.12.051>
18. Tabche, C., Atwan, Z., Al Khaldi, S., Sidiropoulou, Z., Sharma, I., Kumar, S., . . . Rawaf, S. (2026). Cervical cancer in the Arab world: Knowledge gaps, health system and cultural barriers, and the path forward. *Cancer Treatment and Research Communications*, 101250. <https://doi.org/10.1016/j.ctarc.2026.101250>
19. Shin, H., Jeon, S., Cho, I., & Park, H. (2022). Factors affecting human papillomavirus vaccination in men: Systematic review. *JMIR Public Health and Surveillance*, 8(4), e34070. <https://doi.org/10.2196/34070>

20. Davies, C., Stoney, T., Hutton, H., Parrella, A., Kang, M., Macartney, K., Leask, J., McCaffery, K., Zimet, G., Brotherton, J. M. L., Marshall, H. S., Skinner, S. R., & HPV.edu Study Group. (2021). School-based HPV vaccination positively impacts parents' attitudes toward adolescent vaccination. *Vaccine*, 39(30), 4190–4198. <https://doi.org/10.1016/j.vaccine.2021.05.051>
21. Wong, L. P., Chen, X., Huang, Z., Zimet, G., Zhao, Q., Lin, Y., & Hu, Z. (2025). Addressing male HPV vaccination in China: A narrative review of challenges and opportunities. *Human Vaccines & Immunotherapeutics*, 21(1), 2552061. <https://doi.org/10.1080/21645515.2025.2552061>
22. Vincent, S. C., Al Yacquobi, S., & Al Hashmi, A. (2024). A systematic review of knowledge, attitudes, and factors influencing HPV vaccine acceptance among adolescents, parents, teachers, and healthcare professionals in the Middle East and North Africa (MENA) region. *Cureus*, 16(5), e60293. <https://doi.org/10.7759/cureus.60293>
23. Mantina, N. M., Smith, J., Miiro, F. N., Magrath, P. A., McClelland, D. J., Barraza, L., Ruiz, J., & Madhivanan, P. (2025). Perspectives on HPV vaccine decision-making among young adults: A qualitative systematic review and evidence synthesis. *PLoS ONE*, 20(5), e0321448. <https://doi.org/10.1371/journal.pone.0321448>
24. Comer, D., Warner, N. Z., & Noone, C. (2024). Human papillomavirus vaccination in gay and bisexual men: Predictors, dynamic norms, and connectedness to the LGBT+ community. *Vaccine*, 42(23), 126014. <https://doi.org/10.1016/j.vaccine.2024.05.062>
25. Pow, J., Clarke, L., McHale, S., & Gray-Brunton, C. (2025). A systematic review and thematic synthesis exploring how gay, bisexual, and other men who have sex with men (GBMSM) experience HPV and HPV vaccination. *Human Vaccines & Immunotherapeutics*, 21(1), 2490440. <https://doi.org/10.1080/21645515.2025.2490440>
26. Pollard, E., Holt, H. K., Vu, M., & Tsai, M. H. (2025). The importance of parental human papillomavirus vaccine series initiation for reducing sex disparities in human papillomavirus vaccine series initiation among children in the United States. *Preventive Medicine Reports*, 56, 103160. <https://doi.org/10.1016/j.pmedr.2025.103160>
27. Jia, S., Pan, B., Hong, D., Zhang, Q., Jiang, H., Hong, Y., & Hong, J. (2023). A survey of potential acceptance of the 9-valent HPV vaccine among Chinese male college students. *Human Vaccines & Immunotherapeutics*, 19(3), 2272533. <https://doi.org/10.1080/21645515.2023.2272533>
28. Mansfield, L. N., Chung, R. J., Silva, S. G., Merwin, E. I., & Gonzalez-Guarda, R. M. (2022). Social determinants of human papillomavirus vaccine series completion among U.S. adolescents: A mixed-methods study. *SSM - Population Health*, 18, 101082. <https://doi.org/10.1016/j.ssmph.2022.101082>
29. Oka, E., Ueda, Y., Yagi, A., Ito, Y., Hosokawa, Y., Tabuchi, T., & Kimura, T. (2024). Parental gender influences their intention to have their children vaccinated against HPV, and the association between HPV and COVID-19 vaccination intentions. *Vaccine: X*, 17, 100441. <https://doi.org/10.1016/j.jvacx.2024.100441>
30. Abuzoor, A., Jabin, M. S. R., Eshareturi, C., Nesbitt, R., & Jonker, C. (2025). Using the health belief model to examine parental knowledge and health beliefs about human papillomavirus (HPV) and the iHPV vaccine in Kuwait: A cross-sectional survey study. *JMIR Public Health and Surveillance*, 11, e75818. <https://doi.org/10.2196/75818>
31. Moucheraud, C., Ochieng, E., Ogutu, V., Chang, L. C., Golub, G., Crespi, C. M., & Szilagyi, P. G. (2024). Intervention-amenable factors associated with lack of HPV vaccination in Kenya: Results from a large national phone survey. *Vaccine*, 42(26), 126410. <https://doi.org/10.1016/j.vaccine.2024.126410>
32. Gallant, A. J., Johnson, C., Steenbeek, A., Leigh, J. P., Halperin, S. A., & Curran, J. A. (2024). Stakeholders' experiences with school-based immunization programs during the COVID-19 pandemic in the Canadian Maritimes: A qualitative study. *Public Health in Practice*, 7, 100505. <https://doi.org/10.1016/j.puhip.2024.100505>
33. Schwartz, B. I., Maccani, M., Bansal, S., & Gannon, M. (2023). Parental perceptions of the HPV vaccine for the prevention of anogenital and oropharyngeal cancers. *Vaccine: X*, 14, 100298. <https://doi.org/10.1016/j.jvacx.2023.100298>
34. Zou, Z., Hu, Y., Yang, H., Zhao, M., Cao, Y., Tiesasapjaroen, W., . . . Zhang, L. (2025). Preferences and willingness-to-pay for human papillomavirus vaccination among men who have sex with men in China: A discrete choice experiment. *Vaccine*, 65, 127806. <https://doi.org/10.1016/j.vaccine.2025.127806>
35. Kelly, S. A., Changalucha, J., Malibwa, D., Ewing, V. L., Mkungu, G., Deogratias, D., . . . Lees, S. (2026). Knowledge and acceptability of male HPV vaccination among young people and community stakeholders in northwest Tanzania: Social sciences in the Add-Vacc trial. *Vaccine*, 69, 128002. <https://doi.org/10.1016/j.vaccine.2025.128002>
36. Anni, N. S., Alvarez, E., Chagla, Z., Billah, S. M. B., & Mbuagbaw, L. (2025). Knowledge, attitudes, and practices regarding HPV and its vaccine among Bangladeshi men: A qualitative study. *Vaccine: X*, 100775. <https://doi.org/10.1016/j.jvacx.2025.100775>
37. Johm, P., Jallow, M. M., Manneh, E., & Clarke, E. (2025). Primary caregivers' acceptance of gendered human papillomavirus (HPV) vaccination across The Gambia. *Vaccine: X*, 100755. <https://doi.org/10.1016/j.jvacx.2025.100755>
38. Shen, F., Du, Y., Cao, K., Chen, C., Yang, M., Yan, R., & Yang, S. (2023). Acceptance of the human papillomavirus vaccine among general men and men with a same-sex orientation and its influencing factors: A systematic review and meta-analysis. *Vaccines*, 12(1), 16. <https://doi.org/10.3390/vaccines12010016>

39. Huang, R., Wang, Z., Yuan, T., Nadarzynski, T., Qian, H. Z., Li, P., . . . Zou, H. (2021). Using protection motivation theory to explain the intention to initiate human papillomavirus vaccination among men who have sex with men in China. *Tumor Virus Research*, 12, 200222. <https://doi.org/10.1016/j.tvr.2021.200222>
40. Wang, Z., Lau, J. T., Ip, T. K. M., Yu, Y., Fong, F., Fang, Y., & Mo, P. K. (2021). Two web-based and theory-based interventions with and without brief motivational interviewing to promote human papillomavirus vaccination among Chinese men who have sex with men: A randomized controlled trial. *Journal of Medical Internet Research*, 23(2), e21465. <https://doi.org/10.2196/21465>
41. Volpi, C. R., Chama, J., Adebisi, R., Aigoro, J. A., Bawa, Y. J., Kolawole, K. E., . . . Nowak, R. G. (2026). Understanding HPV vaccine preferences among sexual minority men living with HIV in Abuja, Nigeria using a discrete choice experiment. *Vaccine*, 87, 128771. <https://doi.org/10.1016/j.vaccine.2026.128771>
42. Hristamyan, M. (2026). Assessment of attitudes and practices regarding human papillomavirus vaccines among medical university students: Preliminary results. *Folia Medica*, 68(1), e160562. <https://doi.org/10.3897/folmed.68.e160562>
43. Yin, G., Zhang, Y., Chen, C., Ren, H., Guo, B., & Zhang, M. (2021). Have you ever heard of the human papillomavirus (HPV) vaccine? Awareness of the HPV vaccine among college students in China based on a meta-analysis. *Human Vaccines & Immunotherapeutics*, 17(8), 2736–2747. <https://doi.org/10.1080/21645515.2021.1899731>
44. Escabi-Wojna, E., Alvelo-Fernandez, P. M., Suarez, E., & Colon-Lopez, V. (2025). Sex differences in parental reasons for lack of intent to initiate HPV vaccination among adolescents ages 13–17 years: National Immunization Survey–Teen 2019–2021. *Vaccine*, 44, 126584. <https://doi.org/10.1016/j.vaccine.2024.126584>
45. Cooper, S., Schmidt, B. M., Jama, N. A., Ryan, J., Leon, N., Mavundza, E. J., Burnett, R. J., Tanywe, A. C., & Wiysonge, C. S. (2025). Factors that influence caregivers' and adolescents' views and practices regarding human papillomavirus (HPV) vaccination for adolescents: A qualitative evidence synthesis. *The Cochrane Database of Systematic Reviews*, 4(4), CD013430. <https://doi.org/10.1002/14651858.CD013430.pub2>
46. Cocco, N., Fantozzi, M. P. T., Ihuthia, J. N., Moazen, B., Meroueh, F., Barbîroş, I., . . . Yiasemi, I. (2024). Cancer-preventing vaccination programs in prison: Promoting health equity in Europe. *The Lancet Regional Health – Europe*, 43. <https://doi.org/10.1016/j.lanepe.2024.100958>
47. Maassen, A., Nejat, A., De Zeeuw, J., Tavoschi, L., Karnaki, P., Bobáková, D. F., . . . Edelstein, M. (2025). Why are Europe's underserved still unprotected? A call to address structural barriers to immunization. *The Lancet Primary Care*, 1(6). <https://doi.org/10.1016/j.lanprc.2025.100062>
48. Suzuki, Y., Sukegawa, A., Ueda, Y., Sekine, M., Enomoto, T., & Miyagi, E. (2021). Effect of a brief web-based educational intervention on willingness to consider human papillomavirus vaccination for children in Japan: Randomized controlled trial. *Journal of Medical Internet Research*, 23(9), e28355. <https://doi.org/10.2196/28355>
49. Dalla Valle, D., Benoni, R., Soriolo, N., Battistella, C., Moretti, F., Gonella, L. A., . . . Zanon, G. (2024). Safety profile assessment of HPV4 and HPV9 vaccines through the passive surveillance system of the Veneto Region (Italy) between 2008 and 2022: A 15-year retrospective observational study. *Vaccine: X*, 19, 100511. <https://doi.org/10.1016/j.jvacx.2024.100511>
50. Khuu, E., Moussaoui, S., Vignier, N., Bonello, K., & Archer, E. (2025). Vaccine hesitancy among migrant populations in Europe: A mixed-methods systematic review. *Vaccine*, 68, 127954. <https://doi.org/10.1016/j.vaccine.2025.127954>
51. Yusuf, K. K., Olorunsaiye, C. Z., Gadanya, M. A., Ouedraogo, S., Abdullahi, A. A., & Salihu, H. M. (2024). HPV vaccine hesitancy among parents and caregivers of adolescents in Northern Nigeria. *Vaccine: X*, 21, 100591. <https://doi.org/10.1016/j.jvacx.2024.100591>
52. Andresen, J. B., Graugaard, C., Andersson, M., & Frisch, M. (2026). Associations of adverse childhood experiences, sexual identity, and sexual risk indicators with HPV vaccination uptake in Denmark—A nationwide epidemiological study. *Vaccine*, 77, 128367. <https://doi.org/10.1016/j.vaccine.2026.128367>
53. Annequin, M., Mora, M., Fressard, L., Cogordan, C., Brosset, E., Bocquier, A., . . . Verger, P. (2025). The relationship between men who have sex with men on PrEP and care providers is essential for HPV vaccination: A mixed-methods study in France. *Vaccine*, 56, 127190. <https://doi.org/10.1016/j.vaccine.2025.127190>
54. Araújo, M. G., Magalhães, G. M., Garcia, L. C., Vieira, É. C., de Carvalho, M. D. L. R., & Guedes, A. C. M. (2021). Update on human papillomavirus—Part II: Complementary diagnosis, treatment, and prophylaxis. *Anais Brasileiros de Dermatologia*, 96(2), 125–138. <https://doi.org/10.1016/j.abd.2020.11.005>
55. Mohamed, Y., Luey, E., Kata, U., Tukia, O., Lotulelei, S., Tei, A., . . . Kaufman, J. (2025). “The only vaccine that we really question is the new vaccine”: A qualitative exploration of the social and behavioural drivers of human papillomavirus (HPV) vaccination in Tonga. *Vaccine*, 59, 127280. <https://doi.org/10.1016/j.vaccine.2025.127280>
56. Guo, Y., Liu, X., Nicholas, S., Maitland, E., & Liu, R. (2025). Revisiting global HPV vaccination behavior and its determinants: A comprehensive review. *Risk Management and Healthcare Policy*, 18, 2675–2689. <https://doi.org/10.2147/RMHP.S524223>

57. Alanazi, Y. A., Albilasi, B., Almaa, Z., Alqubaishi, A. H., Alshammari, K. H., Aljahdali, F. K., . . . Alnafisah, M. A. (2026). Paternal vaccine hesitancy and its impact on childhood immunization coverage in Saudi Arabia: A systematic review. *Journal of Infection and Public Health*, 103210. <https://doi.org/10.1016/j.jiph.2026.103210>
58. Glenn, B. A., Crespi, C. M., Herrmann, A. K., Nonzee, N. J., Rosen, D. L., Park, C. L., . . . Bastani, R. (2023). Effectiveness and feasibility of three types of parent reminders to increase adolescent human papillomavirus (HPV) vaccination. *Preventive Medicine*, 169, 107448. <https://doi.org/10.1016/j.ypmed.2023.107448>
59. Bakare, D., Gobbo, E., Akinsola, K. O., Bakare, A. A., Salako, J., Hanson, C., Herzig van Wees, S., Falade, A., & King, C. (2024). Healthcare worker practices for HPV vaccine recommendation: A systematic review and meta-analysis. *Human Vaccines & Immunotherapeutics*, 20(1), 2402122. <https://doi.org/10.1080/21645515.2024.2402122>
60. Dorismond, V. G., Boscardin, W. J., & Sawaya, G. F. (2023). The association between YouTube use and knowledge of human papillomavirus-related cancers. *PEC Innovation*, 3, 100186. <https://doi.org/10.1016/j.pecinn.2023.100186>
61. Peterson, L. M., Orr, J. A., Rogelberg, S. D., & Olsen, N. (2022). Social-contextual factors interact with masculinity to influence college men's HPV vaccination intentions: The role of descriptive norms, prototypes, and physician gender. *Journal of Behavioral Medicine*, 45(6), 825–840. <https://doi.org/10.1007/s10865-022-00350-1>
62. Klassen, A. C., Lee, G., Chiang, S., Murray, R., Guan, M., Lo, W. J., . . . Massey, P. M. (2024). Did the COVID-19 experience change U.S. parents' attitudes toward HPV vaccination? Results from a national survey. *Vaccine*, 42(7), 1704–1713. <https://doi.org/10.1016/j.vaccine.2024.01.105>