

The acceptability of human papillomavirus vaccination in the United Kingdom: a review of the literature on barriers and facilitators to vaccination

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Introduction

- > Human papillomavirus (HPV) is the most common sexually transmitted infection worldwide, with HPV and HPV-related diseases representing a substantial disease burden for sexually active individuals.^{1,2}
- > In women, high-risk HPV types are responsible for virtually all cervical cancer cases; cervical cancer is the fourth most common cancer and the fourth leading cause of cancer deaths globally.^{2,3}
 - In men, the burden of certain HPV-related diseases is much larger than among females, with a four-fold higher incidence of oropharyngeal cancer observed in men compared to women.^{2,4}
- > Despite the breadth of evidence supporting both the safety of HPV vaccination among adolescents and the impact of vaccination in reducing both HPV infections and HPV-related diseases,⁵⁻⁷ there is growing evidence of delayed vaccination or vaccine refusals resulting from a lack of trust in the safety and effectiveness of vaccines and a mistrust of health authorities.⁸⁻¹⁰
- > The acceptability of HPV vaccination by all key stakeholders, including adolescents and their parents/guardians, is key to the success of HPV vaccination. Understanding the factors that impact vaccine uptake will support the implementation of successful HPV vaccination programmes, by targeting identified barriers.¹¹⁻¹³
 - Successful vaccination programme delivery and uptake is essential to achieve the World Health Organization (WHO) goal for cervical cancer elimination, by meeting the target for 90% of girls fully vaccinated by the age of 15 by 2030.¹⁴
- > This research therefore reviewed the literature to compare the acceptability of HPV vaccination among adolescents and parents/guardians in the United Kingdom (UK).

Methods

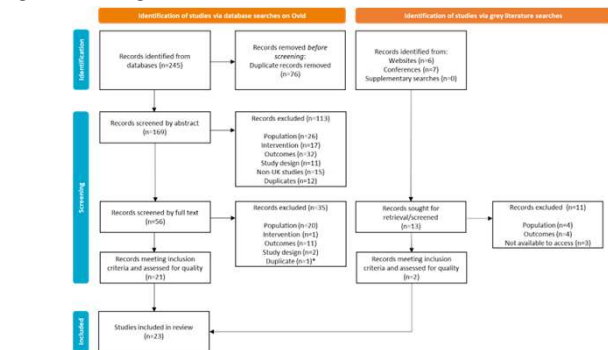
- > A systematic literature review was conducted using Cochrane methodology across Embase, Medline, the Cochrane Library, and grey literature sources to identify publications pertaining to 'adolescents', 'parents/guardians', 'vaccine uptake', 'vaccine hesitancy', and 'barriers or facilitators to vaccination' and 'HPV'.
- > Searches were limited to: English language and articles specific to the UK published between 2017 and July 2022.
- > A qualitative synthesis of reported barriers and facilitators in included publications was undertaken to compare commonalities and differences between adolescents and parents/guardians.

Results

Summary of results

- > Following screening of 169 titles/abstracts from Embase, Medline, the Cochrane Library, and 13 grey literature publications (including full-text screening of 56), 23 publications met the inclusion criteria and were taken forward for synthesis (Figure 1).

Figure 1. PRISMA diagram



Vaccine coverage

- > Thirteen (of the 23) publications reported on HPV vaccine coverage among adolescent girls in the UK, with no publications reporting vaccine coverage in boys despite the introduction of gender-neutral vaccination (GNV) in 2019.¹⁵⁻²⁷
- > Vaccine coverage was generally high (≥80%) across the UK, indicating that vaccination is acceptable to most eligible adolescents and their parents.¹⁵⁻²⁷
 - Sociodemographic factors, including socioeconomic status (SES), ethnicity and religion were associated with vaccine coverage, however, the included literature indicated some heterogeneity in the impact of these factors on vaccine uptake.^{17-20,23,28}

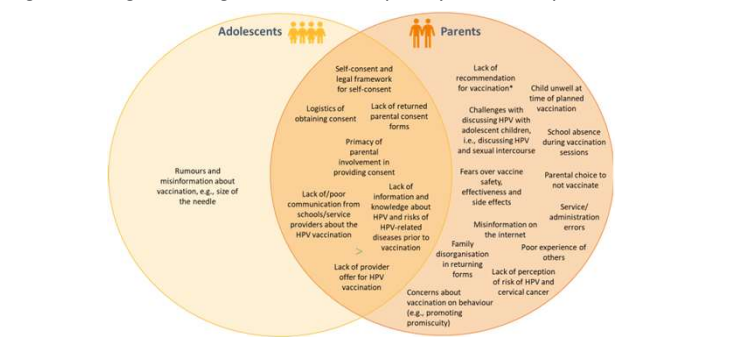
Barriers to vaccination

- > The majority (n=19/23) of included publications reported on barriers to vaccination, with a greater number of barriers reported by parents than adolescents (Figure 2).^{11,15-19,21,25,29-35}
 - Analysis of the barriers reported overall identified that health and school system factors (i.e., logistical factors) were the most frequently cited.^{11,15-17,19,29-34}
 - Poor understanding and application of consent, poor communication from schools and service providers, and school absence were frequently identified as barriers to vaccination.^{11,15-17,19,29-33}
- > Understanding and application of consent was raised as a barrier to vaccination by both adolescents and parents, with parents primarily noting that the logistics of receiving or returning the consent form were a barrier to vaccination, and adolescents identified not returning consent forms, and lack of awareness around self-consent as barriers to vaccination.^{15,17,29-31}
 - Most parents and adolescents were not aware of the legal framework for self-consent for HPV vaccination, with parents stating a preference for making the decision given the age of vaccine receipt (aged 12–13 years), or an involvement in the decision making as a minimum.¹⁵
- > Poor communication from schools and service providers about HPV and vaccination were also identified as barriers, with information provided via leaflets seen as insufficient for communicating the risks and benefits of both HPV and vaccination, respectively.^{11,19,29,32}
- > Adolescents reported that they would prefer a lesson with a health care professional (HCP) or teacher over simply receiving a leaflet to provide them with information about HPV, to allow an informed decision about receiving the vaccine.³²
- > Parents also identified that there were limitations with the current forms of communication about HPV and HPV vaccination, impacting their knowledge and subsequent support for vaccination.^{11,19,29}

Results (continued)

- > While misinformation regarding vaccination was identified by both parents and adolescents, adolescents were primarily concerned by rumours and misinformation from other students resulting in fear of vaccination (e.g., needle size or risk of death), while parents were concerned by misinformation from the internet related to adverse events.³⁰
 - However, concerns about vaccine safety and effectiveness were infrequently reported among both adolescents and parents, in contrast with the wider published literature.^{36,37}

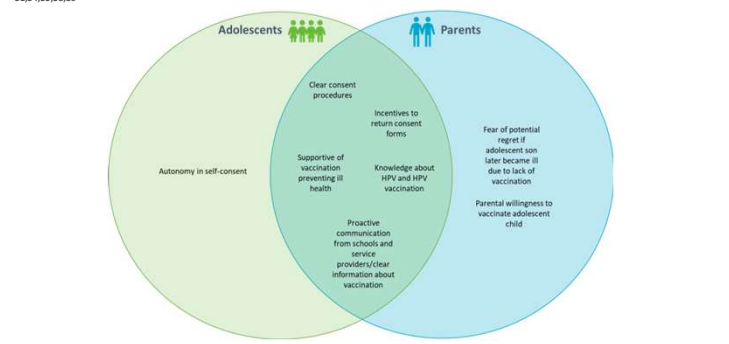
Figure 2. Venn diagram illustrating barriers to vaccination reported by adolescents and parents^{11,15-19,21,25,29-35}



Facilitators to vaccination

- > Among studies reporting on both barriers and facilitators to vaccination (n=11), proactive communication from schools and service providers and clear information about vaccination were identified as facilitators to vaccination coverage by three studies among both adolescents and parents.^{29,34,35}
- > Related to this, both adolescents and parents reported that knowledge of HPV and vaccination and being supportive of vaccination in preventing ill health were facilitators to vaccination (Figure 3).^{11,15,21,34}
- > Furthermore, adolescents and parents both reported the importance of clear consent procedures, and the use of incentives to return consent forms as facilitators to improving vaccination coverage.^{18,30,31,38}
 - Adolescents reported that having autonomy in consent may act as a facilitator, while parents identified parental willingness towards vaccination and fear of potential illnesses with a lack of vaccination as facilitators to vaccine receipt.^{18,30,31,38}

Figure 3. Venn diagram illustrating facilitators to vaccination reported by adolescents and parents^{11,15,18,21,34-39}



Conclusions

- > The studies identified in this literature review broadly presented a positive opinion of HPV vaccination among both adolescents and parents in the UK, with generally high vaccine coverage. However, the literature review identified many important barriers that could hinder vaccine uptake and that should be addressed to further improve HPV vaccination coverage.
 - Despite generally high vaccine uptake in the UK, HPV vaccine coverage does not consistently achieve the 90% WHO target for cervical cancer elimination.¹⁴
 - Heterogeneity in vaccine uptake trends due to SES, ethnicity and religion warrant further research to fully elucidate any barriers to vaccination and implement programmatic change to ensure all target populations receive HPV vaccination in the UK.
- > There is currently a lack of evidence among adolescent boys (and non-binary or transgender adolescents) to evaluate any differences in vaccination coverage or barriers compared to girls, likely as a result of the timing of the COVID-19 pandemic coinciding with the introduction of GNV in the UK.⁴⁰
- > Conducting research among adolescent boys, and non-binary or transgender adolescents, will also allow policy makers to review the factors impacting uptake in the initial years of the GNV programme and develop targeted, or programmatic, changes to improve vaccination rates.
- > While numerous barriers to vaccination were identified, few studies specifically set out to evaluate facilitators to HPV vaccination among adolescents or parents in the UK.
 - Rather, studies reported facilitators alongside identified barriers, or in relation to vaccine coverage rates, indicating the need for further specific research in this area to understand public health/programmatic approaches that may increase vaccination coverage in the UK.
- > The review also identified that there is a lack of understanding about the benefits of HPV vaccination, highlighting the need for broader population awareness of HPV-related disease, beyond cervical cancer, alongside clear communication about the safety and effectiveness of HPV vaccines.