

Human Papillomavirus Vaccination Barriers; A Systematic Scientific Review

Kaur Shaminder¹, Kaur Gagandeep², Sharma Preksha³

¹Assistant Professor, UCON, BFUHS, Faridkot

²Assistant Professor, UCON, BFUHS, Faridkot
Corresponding Author Email: [gkb4900\[at\]gmail.com](mailto:gkb4900[at]gmail.com)
Mob. No. 8427734900

³Associate Professor, UCON, BFUHS, Faridkot

Abstract: ***Background:** Human papillomavirus (HPV) is associated with poor health outcomes, including cervical cancer. A vaccine is available to protect against HPV infections and prevent HPV-related sequelae; however, vaccination rates have remained low despite the availability of the vaccine. **Objective:** This paper systematically reviews the literature on barriers to HPV vaccination to inform future efforts to increase HPV vaccine coverage. **Methods:** Combinations of the terms “HPV Vaccination Barriers” were searched in the PubMed and CINAHL through January 2012-2022. Original research, published in English discussing barriers in HPV vaccination uptake were included in the study. **Results:** Similar findings were observed among the articles reviewed. The low HPV vaccination uptake was found to be associated with lack of provider recommendations, high cost, inadequate knowledge and awareness of HPV and HPV vaccination, vaccine safety concerns, and stigma associated with sexual activity as a risk of HPV vaccination. **Conclusions:** Provider recommendations and accurate distribution of information must be increased in order to increase the rate of vaccine uptake. Further, research to understand the barriers that may affect unvaccinated adults in the catch-up age range, including males, may be beneficial, as majority of the previous studies focused on either parents of adolescents or women.*

Keywords: HPV, Vaccination, Barriers

1. Introduction

Cervical cancer is the fourth most common cancer among women globally, with an estimated 604 000 new cases and 342 000 deaths in 2020.^[1] Since up to 99% of cervical cancer cases are caused by high-risk HPV infection, HPV vaccination program have been credited with substantially reducing the disease burden in many countries.^[2]

Vaccines for HPV have been available since 2006. The vaccine has been administered to more than 300 million girls and women around the world without serious side effects.^[3] According to WHO, 4.1 million women in India have died from the disease since 2019, and without intervention, as many as 5.7 million will die by 2070.^[1] In UK, HPV vaccination program reduced cervical cancer cases by almost 90% in women in their 20s. An 11-year study in Finland found zero cases of HPV-related cancers in vaccinated women in the country. In Australia, there has been a 90% reduction in HPV types as a result of their National HPV vaccine program.^[4] The Global Strategy for Cervical Cancer elimination, adopted in 2020, states that HPV Vaccination plays a role as the first pillar of the strategy. Each country is expected to meet the 2030 target of 90% of girls fully vaccinated with the HPV vaccine.

(WHO). Despite the availability and effectiveness of HPV vaccination, just 13% of girls aged 9–14 years globally were vaccinated in 2020 against HPV – the virus that causes almost all cases of cervical cancer.^[5]

The adoption of universal HPV vaccination has been difficult, but appears to be increasing over time, as public education improves and governmentally mandated vaccine program increases. Despite the ethical concerns raised, the benefit of vaccination with regard to cancer prevention outweighs the risk.^[6]

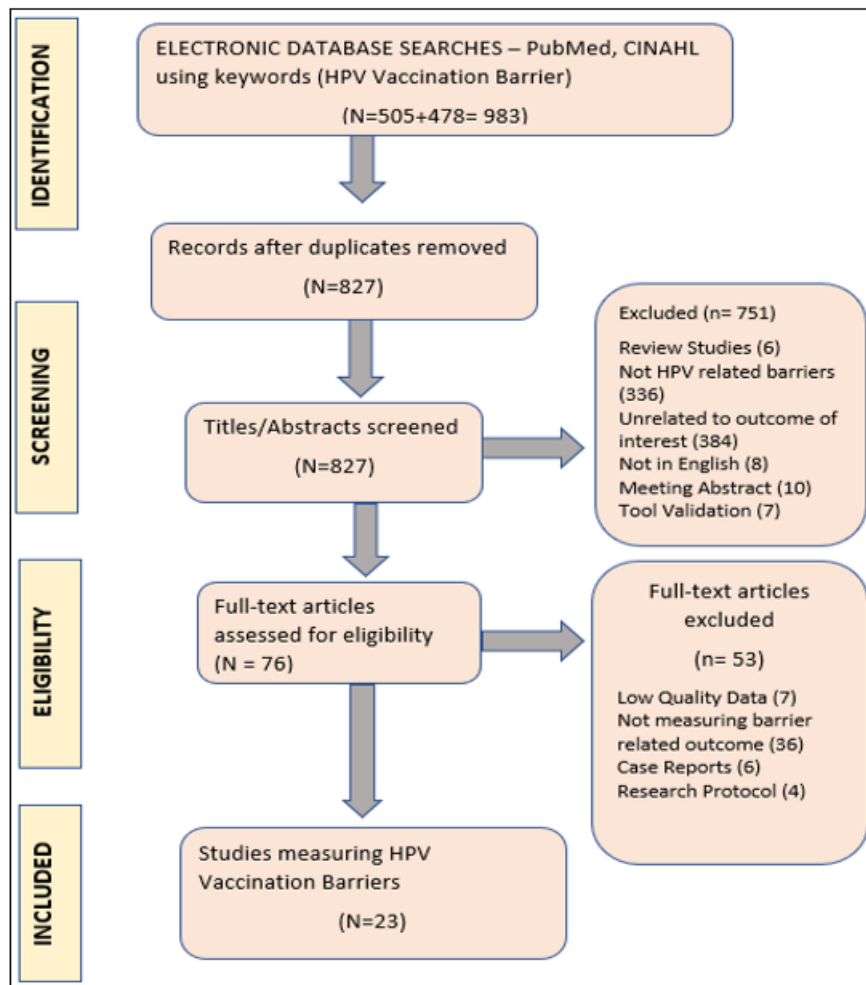
Objective of the Study

This study reviews the literature on barriers to HPV vaccination to inform future efforts to increase HPV vaccine coverage.

2. Material and Methods

Combinations of the terms “HPV Vaccination Barriers” were searched in the PubMed and CINAHL through January 2012-2022. Original research articles published in English discussing barriers in HPV vaccination uptake were included in the study.

Prism Flow



3. Results

1) Parent related barriers:

Three studies included safety and efficacy concerns about the HPV vaccine.^[8,10,11] One study highlighted that agreeing to vaccination means they are condoning premarital sex and concerns that their children will engage in riskier sexual behaviors if they receive the vaccine.^[8] Parental beliefs that their children are not at risk for HPV infection and that children are not old enough for the HPV vaccine were also reported as barriers.^[8] Another study revealed parent not receiving a Health Care Professional's recommendation for the HPV Vaccine, is also a key barrier.^[17]

2) Parent related barriers:

Perceived stigma about vaccination among parents of adolescents is significant barrier in one third studies.^[10] More than half of studies shows, inadequate education/understanding in parents about HPV infection.^[8] One study from Georgia shows parents' distrust of the health care system.^[7]

3) Gender related barriers:

Majority i.e 12 studies shows that people don't think that vaccination is required in males due to Lack of perceived benefit or need to vaccinate males.^[9,13,14,16] A few studies reports that population is unaware that vaccine can be given to males.^[14,18,19]

4) Financial barriers:

Cost of the HPV vaccine is also considered as barrier for getting vaccinated^[7] and in few studies, lack of insurance coverage for vaccination was also a concern among people.^[12,15]

Lack of organizational support:

Studies conducted in low income countries shows that there is lack of government initiatives to introduce HPV vaccination in national immunization schedule, which is also felt as a barrier.^[20]

4. Conclusion

Our study findings show that access to the HPV vaccine is governed by parental influences, health professional recommendations, social norms and values, financial concerns, organizational factors and policy context. As such, interventions targeted only at young women, are likely to be the least effective approach. Although young women are the main participants and beneficiaries of the HPV vaccination program, their views are underrepresented in the literature. Future research efforts should develop context specific, culturally appropriate strategies that may increase equitable access to the cost-effective, gender-neutral HPV vaccine.

References

- [1] The Lancet Oncology [https://doi.org/10.1016/S1470-2045\(22\)00567-8](https://doi.org/10.1016/S1470-2045(22)00567-8)

- [2] <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>
- [3] Garland SM, Hernandez-Avila M, Wheeler CM, et al. Quadrivalent vaccine against human papillomavirus to prevent anogenital diseases. *N Eng J Med.* 2007; 356:1928–1943
- [4] What India needs for cervical cancer elimination – Gender-neutral HPV vaccination August 24, 2022, 1:31 AM IST
- [5] Walker TY, Elam-Evans LD, Singleton JA, et al. National, regional, state, and selected local area vaccination coverage among adolescents aged 13–17 years- United States, 2016. *MMWR Morb Mortal Wkly Rep.* 2017; 66:874–882
- [6] Mark Donald White. *Translational andrology and urology* 2014 Dec.; 3(4): 429- 434. doi:10.3978/j.issn 2223-4683. 2014.11.02
- [7] Luque JS, Raychowdhury S, Weaver M. Health care provider challenges for reaching Hispanic immigrants with HPV vaccination in rural Georgia. *Rural Remote Health.* 2012;12(2):1975
- [8] Hastings T.J., Hohmann L.A., McFarland S.J., Teeter B.S., Westrick S.C. Pharmacists' attitudes and perceived barriers to Human Papillomavirus (HPV) vaccination services. *Pharmacy.* 2017;5:45. doi: 10.3390/pharmacy5030045.
- [9] Perkins RB, Clark JA. Providers' attitudes toward human papillomavirus vaccination in young men: challenges for implementation of 2011 recommendations. *Am J MensHealth.* 2012;6(4):320–323.
- [10] Islam J.Y., Gruber J.F., Kepka D., Kunwar M., Smith S.B., Rothholz M.C., Brewer N.T., Smith J.S. Pharmacist insights into adolescent Human Papillomavirus vaccination provision in the United States. *Hum. Vaccines Immunother.* 2019;15: 1839–1850. doi: 10.1080/21645515.2018.1556077.
- [11] Tolentino V., Unni E., Montuoro J., Bezzant-Ogborn D., Kepka D. Utah pharmacists' knowledge, attitudes, and barriers regarding Human Papillomavirus vaccine recommendation. *J. Am. Pharm. Assoc.* 2018;58:S16–S23. doi: 10.1016/j.japh.2018.04.014.
- [12] Dorell CG, Yankey D, Santibanez TA, Markowitz LE. Human papillomavirus vaccination series initiation and completion, 2008–2009 [published correction appears in *Pediatrics.* 2012;130(1):166–168] *Pediatrics.* 2011;128(5):830–839.
- [13] Berenson AB, Rahman M. Gender differences among low income women in their intent to vaccinate their sons and daughters against human papillomavirus infection. *J Pediatr Adolesc Gynecol.* 2012;25(3):218–220.
- [14] Oldach BR, Katz ML. Ohio Appalachia public health department personnel: human papillomavirus (HPV) vaccine availability, and acceptance and concerns among parents of male and female adolescents. *J Community Health.* 2012;37(6):1157–1163.
- [15] Tsui J, Gee GC, Rodriguez HP, et al. Exploring the role of neighborhood socio- demographic factors on HPV vaccine initiation among low-income, ethnic minority girls. *J Immigr Minor Health.* 2013;15(4):732–740.
- [16] Wilson R, Brown DR, Boothe MA, Harris CE. Knowledge and acceptability of the HPV vaccine among ethnically diverse black women. *J Immigr MinorHealth.* 2013;15(4):747–757.
- [17] Ylitalo KR, Lee H, Mehta NK. Health care provider recommendation, human papillomavirus vaccination, and race/ethnicity in the US National Immunization Survey. *Am J Public Health.* 2012;103(1):164–169.
- [18] Reimer RA, Houlihan AE, Gerrard M, Deer MM, Lund AJ. Ethnic differences in predictors of HPV vaccination: comparisons of predictors for Latina and non-Latina white women. *J Sex Res.* [published online October, 2, 2012].
- [19] Dempsey AF, Butchart A, Singer D, Clark S, Davis M. Factors associated with parental intentions for male human papillomavirus vaccination: results of a national survey. *Sex Transm Dis.* 2011;38(8):769–776.
- [20] Ryan G. Exploring opportunities to leverage pharmacists in rural areas to promote administration of Human Papillomavirus vaccine. *Prev. Chronic Dis.* 2020;17 doi: 10.5888/pcd17