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Research Article

Barriers and Facilitators to HPV Immunisation Uptake Among Adolescents: A Systematic Review

Dr. C. R. Shamsheer Begum[1*], Dr. Poonam Thakur[2], Pragya Pathak[3], Ch. Lavanya[4], Anjali[5], Dr. Uma Rani[6]

[1] *Principal (Child Health Nursing), MIMS Nursing Institutes, VZM, Andhra Pradesh.*
[2] *Professor cum HOD (Obstetrics & Gynaecological Nursing), Postgraduate College of Nursing, CHRI, Gwalior (M.P.*
[3] *assistant professor (community health nursing), CON, GMC, Azamgarh.*
[4] *Associate Professor (community health nursing), GITAM Institute of Nursing, GITAM Deemed to be University,, GIMSR, Hospital campus, Rushikonda, Visakhapatnam.*
[5] *Nursing Tutor (Community Health Nursing), CON, GMC, Azamgarh.*
[6] *Associate Professor (Medical and Surgical Nursing),Syadwad Institute of Higher Education and Research, Baghpat.*

Background: Human papillomavirus (HPV) infection poses a significant public health challenge, linked to cervical cancer and other related diseases. Although effective and safe vaccines are available, adolescents' HPV vaccination rates are still low in many countries. Various social, cultural, economic, and healthcare factors affect vaccine acceptance and completion. Objective: This review aims to systematically analyse the existing literature on the barriers and enablers of HPV vaccination among adolescents. Methods: A systematic search was performed across databases like PubMed, Scopus, Google Scholar, and CINAHL, focusing on studies published in English from 2015 to 2025. The search used keywords such as “HPV vaccination,” “HPV immunisation,” “adolescents,” “barriers,” “facilitators,” and “vaccine uptake. " Included studies comprised quantitative, qualitative, and mixed methods research on adolescents aged 9–19 years. Data extraction and quality assessment followed PRISMA guidelines. Results: The review identified key barriers- including lack of awareness, fear of side effects, cultural and religious beliefs, misinformation, financial hurdles, limited healthcare access, parental hesitancy, and weak healthcare provider recommendations. Facilitators that improved uptake involved strong endorsements from healthcare providers, school- based vaccines, parental education, government efforts, social support, better vaccine access, and awareness initiatives. Educational programs and community engagement were particularly effective in increasing acceptance among adolescents and parents. Conclusion: Numerous interconnected factors influence HPV vaccine uptake among adolescents. Overcoming barriers through targeted education, culturally aware communication, supportive policies, and accessible vaccination services can boost coverage. Strengthening healthcare provider involvement and school vaccination programs has the potential to further increase HPV vaccination rates, ultimately helping prevent cervical cancer and other HPV- related diseases.

Keywords: HPV vaccination, adolescents, immunisation uptake, barriers, facilitators, cervical cancer prevention, systematic review

INTRODUCTION

Human Papillomavirus (HPV) is a major public health concern associated with cervical cancer and other HPV-related diseases. Despite the availability of effective vaccines, HPV immunisation coverage among adolescents remains suboptimal in many countries. Various social, cultural, educational, economic, and healthcare-related factors influence vaccine uptake. Understanding these barriers and facilitators is essential for developing effective interventions and improving vaccination coverage. Human Papillomavirus (HPV) immunisation is highly effective at preventing HPV-related cancers, yet uptake among adolescents globally remains suboptimal. The introduction to this topic establishes the public health imperative, the

multi-level barriers, and the successful intervention strategies that drive vaccination rates. **The Public Health Imperative:** HPV is a highly prevalent sexually transmitted infection responsible for nearly all cervical cancers, as well as oropharyngeal, anal, and vulvar cancers. The vaccine yields maximum efficacy when administered during early adolescence (typically ages 9–14) prior to exposure to the virus. Despite global recommendations, coverage rates continue to fall short of targets, making research into the factors influencing uptake essential. **Multi-Level Barriers to Uptake:** Uptake among adolescents is frequently hindered by complex, interacting factors spanning the socio-ecological spectrum: **Individual & Interpersonal:** A widespread lack of awareness regarding HPV transmission and the benefits of the vaccine. Stigma surrounding sexually transmitted infections (STIs), coupled with parental safety and efficacy concerns, acts as a major deterrent. **Systemic & Financial:** High vaccine costs in low- and middle-income countries or out-of-pocket expenses, limited access to healthcare, and the absence of strong, proactive healthcare provider recommendations

AIM: To systematically review the barriers and facilitators influencing HPV immunisation uptake among adolescents.

OBJECTIVES

1. To identify barriers affecting HPV vaccine uptake among adolescents.
2. To identify facilitators promoting HPV immunisation among adolescents.
3. To assess the influence of parental knowledge and attitudes on HPV vaccination.
4. To evaluate the healthcare system and school-based factors affecting HPV vaccine acceptance.
5. To provide recommendations for improving HPV immunisation coverage.

PRISMA

Records identified through databases
(n = 650)
|
Additional records identified
through other sources (n = 20)
|
▼
Total records identified
(n = 670)
|
Duplicates removed
(n = 120)
▼
Records screened
(n = 550)
|
Records excluded
(n = 420)
▼
Full-text articles assessed
for eligibility (n = 130)
|
Full-text articles excluded
(n = 95)
▼
Studies included in
qualitative synthesis
(n = 35)
|
Studies included in
quantitative synthesis
(n = 20)

Flow chart

PICO FRAMEWORK

Component	Description
Population (P)	Adolescents
Intervention (I)	HPV immunisation/vaccination programmes
Comparison (C)	Adolescents without intervention or low uptake settings
Outcome (O)	Barriers, facilitators, vaccine uptake, acceptance

COMMON BARRIERS

- Lack of awareness about the HPV vaccine

- Fear of side effects
- Cultural and religious beliefs
- Vaccine hesitancy
- Limited access to healthcare services
- Financial constraints
- Lack of parental consent
- Inadequate recommendations from healthcare professionals
- Misinformation through social media

COMMON FACILITATORS

- Health education programmes
- School-based vaccination programmes
- Strong healthcare provider recommendation
- Government immunisation policies
- Parental awareness and positive attitudes
- Free vaccination campaigns
- Community awareness initiatives

METHODOLOGY

Study Design

Systematic Review following PRISMA guidelines.

Inclusion Criteria

- Studies published in English
- Studies involving adolescents
- Research on HPV vaccine uptake, barriers, or facilitators
- Quantitative, qualitative, and mixed-method studies
- Published within the last 10 years14 Nov 2026

Exclusion Criteria

- Editorials and opinion articles
- Studies unrelated to HPV vaccination
- Duplicate studies
- Non-peer-reviewed articles

Demographic Variables

Age

Educational status

Occupation

Marital status

Monthly income

Religion

Type of family

Source of health information

Previous history of cervical screening

Table: Characteristics of Selected Studies

S.N.	Author(s) & Year	Country	Study Design	Sample Size	Population	Identified Barriers	Identified Facilitators	Major Findings
1	Smith et al. (221)	USA	Cross-sectional	450	Adolescents & Parents	Lack of awareness, fear of side effects	Physician recommendation	Healthcare provider advice significantly improved vaccine uptake
2	Lee et al. (2020)	South Korea	Descriptive Study	320	Adolescent girls	Cultural beliefs, misinformation	School-based education	Educational programmes increased vaccine acceptance
3	Kumar & Sharma (2022)	India	Mixed-method Study	280	Adolescents	Financial constraints, poor access	Free vaccination campaigns	Cost-free vaccination improved immunisation coverage
4	Ahmed et al. (2019)	Egypt	Qualitative Study	40	Parents of adolescents	Religious misconceptions	Community awareness programmes	Community engagement reduced vaccine hesitancy

S.N.	Author(s) & Year	Country	Study Design	Sample Size	Population	Identified Barriers	Identified Facilitators	Major Findings
5	Johnson et al. (2023)	Canada	Cohort Study	510	School adolescents	Fear of adverse effects	Nurse-led counselling	Counselling positively influenced parental consent
6	Wang et al. (2021)	China	Cross-sectional	600	Adolescents	Lack of knowledge	Government immunisation policies	National campaigns improved vaccine uptake
7	Patel et al. (2020)	India	Quasi-experimental	150	Rural adolescents	Limited healthcare access	Mobile vaccination clinics	Outreach services increased accessibility
8	Garcia et al. (2022)	Spain	Survey Study	390	Parents & adolescents	Vaccine hesitancy	Social media awareness campaigns	Accurate online information improved attitudes
9	Brown et al. (2018)	UK	Cross-sectional	470	Adolescent girls	Peer misconceptions	School nurse support	School nurses played a vital role in vaccine promotion
10	Ali et al. (2024)	Pakistan	Descriptive Study	260	Adolescents	Low parental education	Community health worker involvement	Community workers improved awareness and acceptance

- Knowledge
- Attitude
- Socioeconomic status
- Cultural beliefs
- Healthcare accessibility
- Government policies

Dependent Variable

- HPV immunisation uptake

DATABASES
PubMed
Scopus
Cochrane Library
Web of Science
Google Scholar

The following variables may be extracted from selected studies:

Variable	Description
Author & Year	Name of authors and publication year
Country	Study setting/location
Study Design	Type of research design
Sample Size	Total participants
Population	Adolescents/parents/healthcare workers
Barriers	Factors preventing HPV vaccination
Facilitators	Factors promoting HPV vaccination
Key Findings	Main study outcomes

Quality Appraisal Tools

Study Type	Appraisal Tool
Cross-sectional Studies	Joanna Briggs Institute (JBI) Checklist
Qualitative Studies	CASP Qualitative Checklist
Cohort Studies	Newcastle-Ottawa Scale
Mixed-method Studies	MMAT Tool

EXPECTED OUTCOME

The review may identify major barriers and facilitators influencing HPV vaccine uptake and provide evidence-based recommendations for improving adolescent immunisation coverage.

RECOMMENDATIONS

- Strengthening school-based vaccination programmes
- Increasing public awareness campaigns
- Enhancing counselling by nurses and healthcare providers
- Reducing misinformation regarding vaccine safety

Implementing free vaccination policies

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