International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Knowledge and Attitudes Toward HPV Vaccination Among Students of Govt. K.M. High School and P.C. Girls' School, Aizawl with a View to Developing an Informational Booklet

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Abstract: ***Background:*** *Cervical cancer is one of the leading causes of cancer-related deaths among women in India. Human Papillomavirus (HPV) vaccination is an effective primary prevention method; however, awareness among adolescents remains inadequate.* ***Aim****: To assess the knowledge and attitudes toward HPV vaccination among students of Govt. K.M. High School and P.C. Girls' School, Aizawl, with a view to develop an informational booklet.* ***Methodology****: A descriptive cross-sectional study was conducted among 160 students using non-probability purposive sampling. A structured questionnaire was used to assess knowledge and a Likert-scale tool to measure attitudes. Data were analyzed using descriptive and inferential statistics.* ***Results:*** *Majority of students had poor knowledge (96.2%), while only 3.8% had good knowledge. Attitudes were largely positive (76.9%), while 23.1% reported neutral attitudes. No students had negative attitudes. There was no significant correlation between knowledge and attitude ($r = -0.017$, $p = 0.835$).* ***Conclusion:*** *Students demonstrated poor knowledge but favorable attitudes regarding HPV vaccination. An informational booklet was developed to enhance awareness and promote cervical cancer prevention.*

Keywords: HPV vaccine, knowledge, attitudes, school students

1.Introduction

Cervical cancer remains a major public health concern globally, with India contributing significantly to global incidence and mortality [1,2]. Persistent infection with high-risk human papillomavirus (HPV) strains accounts for nearly all cases of cervical cancer worldwide [3]. Prophylactic HPV vaccination is a proven and effective primary prevention strategy; however, vaccine uptake remains low, particularly among school-aged children, due to inadequate awareness, misconceptions, and lack of structured health education programmes [4,6]. Adolescents represent the optimal age group for HPV vaccination, as recommended by the World Health Organization and national immunization guidelines, to ensure maximum immunogenicity before exposure to HPV [5,7]. School-based assessments play a vital role in identifying existing knowledge gaps and attitudes, thereby guiding the development of effective educational interventions. This study aims to evaluate the knowledge and attitudes of students from Govt. K.M. High School and P.C. Girls' School, Aizawl, and to develop an informational booklet to improve awareness and promote cervical cancer prevention.

1.1. Statement of the Problem

"Knowledge and Attitudes Toward HPV Vaccination Among Students of Govt. K.M. High School and P.C. Girls' School, Aizawl with a view to developing an informational booklet."

1.2. Aim and objectives of the study

- To assess the knowledge on HPV vaccines for cervical cancer among school students.
- To evaluate the attitudes among school students on HPV vaccines for cervical cancer.
- To develop informational booklet regarding HPV vaccines among school students based on the knowledge and attitudes.
- To find the correlation between knowledge and attitudes towards HPV vaccines among school students.

2.Review of Literature

The review of literature is organized under the following headings:

Section 1: Assessment of knowledge and attitudes towards HPV vaccines on Global scenario.

Biyazin T, Yilma A, Yetwale A, et al. [8] conducted a cross-sectional study among female high-school students in Jimma town, Ethiopia, to assess knowledge and attitudes toward human papillomavirus (HPV) vaccination. Participants were selected using a simple random sampling technique, and data were collected through self-administered structured questionnaires. A total of 366 students participated in the study. The findings revealed that overall knowledge and attitudes toward HPV vaccination were low among the participants.

Study related to assessment of knowledge and attitudes towards HPV vaccines on National scenario.

Rashid et al. (2016) [12] conducted a cross-sectional study among 1,580 undergraduate students at a university in Uttar Pradesh, India, to assess knowledge, awareness, and attitudes toward HPV, HPV vaccination, and cervical cancer. The study found moderate to low overall awareness, with female students demonstrating higher knowledge than males. Many participants lacked detailed understanding of HPV-related prevention, highlighting the need for targeted educational interventions, awareness campaigns, and integration of HPV topics into university health programs to improve vaccine uptake and cervical cancer prevention among young adults.

3.Methodology

3.1 Research design

A descriptive cross-sectional design was used.

3.2 Study setting

Govt. K.M. High School and P.C. Girls' School, Aizawl.

3.3 Population

Middle and high school students enrolled in the selected schools.

3.4 Sample size

160 students

3.5 Sampling technique

Non-probability purposive sampling.

3.6 Tools

- **Section A:** Demographic variables
- **Section B:** Structured knowledge questionnaire
- **Section C:** Attitude scale (Likert)

3.7 Criteria for sample collection:

Inclusion Criteria:

Students:

- Within the age group of 12-19 years from classes VII-X
- With female students studying classes VII-X
- Who were willing to participate
- Who understood Mizo or English language

Exclusion Criteria:

- All male students from class VII-X

3. 8 Data collection procedure

Administrative permission was obtained from school authorities. After consent, questionnaires were administered in classrooms.

3.9 Data analysis

Data were analyzed using descriptive (frequency, percentage, mean, SD) and inferential (Pearson correlation) statistics.

4.Results

Descriptive and inferential statistics were used to tabulate, analyze, and interpret the gathered data. The following headers are used to arrange and display the data:

Section I: Description of demographic variables of the students.

Table 1: Frequency and Percentage Distribution of Demographic Variables

n=160

Sl. no	Demographic Variables	Frequency (n)	Percentage (%)
1	**Age in years**		
	a. 12-13	51	31.9
	b. 14-15	**67**	**41.9**
	c. 16-17	36	22.4
	d. 17-19	6	3.8
2	**Students level of education**		
	a. Class VII	40	25
	b. Class VIII	40	25
	c. Class IX	40	25
	d. Class X	40	25
3	**Mothers level of education**		
	a) Illiterate	3	1.9
	b) Primary school	10	6.2
	c) Middle school	30	18.8
	d) High school	56	35
	e) Higher secondary	**31**	**19.4**
	f) Graduate and above	30	18.8
4	**Fathers level of education**		
	a. Illiterate	1	0.6
	b. Primary school	5	3.1
	c. Middle school	31	19.4
	d. High school	**50**	**31.2**
	e. Higher secondary	30	18.8
	f. Graduate and above	43	26.9
5	**Occupation of mother**		
	a. Unemployed	**59**	**36.9**
	b. Daily wages	55	34.4
	c. Private service	29	18.1
	d. Government service	17	10.6
6	**Occupation of father**		
	a. Unemployed	11	6.9
	b. Daily wages	**74**	**46.2**
	c. Private service	42	26.2
	d. Government service	33	20.7
7	**Family monthly income**		
	a. Less than Rs 10,000	40	25
	b. Rs 10,001 – 30,000	**67**	**41.9**

	c. Rs 30,001 - 50,000 d. More than Rs 50,000	30 23	18.8 14.3
8	**Source of information regarding HPV vaccine.** a. Health Personnel b. Family c. Friends d. Mass Media **e.** No previous information	 6 19 3 15 **117**	 3.8 11.9 1.9 9.4 **73.1**
9	Do you know any family member or friend who has been diagnosed with Cervical cancer? a. Yes b. No	 18 **142**	 11.2 **88.8**

Table 1 shows that most participants were aged 14–15 years and evenly represented across Classes VII–X. Parents generally had at least secondary education, with fathers more educated than mothers. Most families belonged to a low- to middle-income group, and many mothers were unemployed or daily wage workers, while fathers were mainly daily wage laborers. Awareness of HPV vaccination was very low, with nearly three-quarters of students having no prior knowledge, and limited personal exposure to cervical cancer was reported.

Section II: Assessment of knowledge of the students as measured by Structured Knowledge Questionnaire.

Table 2: Distribution of level of knowledge on HPV vaccines for cervical cancer among school students.
n = 160

Level of knowledge	f	%	Md	x̄	SD
Poor knowledge	154	96.2	3	2.40	1.92
Good knowledge	6	3.8			

Table 2 shows that the vast majority of participants (96.2%) had poor knowledge about the HPV vaccine, while only 3.8% demonstrated good knowledge. Knowledge scores ranged from 0 to 6, with a median of 3, a mean of 2.40, and a standard deviation of 1.92. These findings indicate that overall awareness of the HPV vaccine was low, with most students scoring at the lower end and showing minimal variation in knowledge levels across the group.

Section III: Assessment of attitudes level of the students as measured by Attitude scale using a three-point likert scale.

Table 3: Distribution of level of attitudes among school students on HPV vaccines for cervical cancer
. **n = 160**

Level of attitude	f	%	Score range	Median	Mean	SD
Negative attitude	0	0	17-30 13	23	23.07	2.521
Neutral attitude	37	23.1				
Positive attitude	123	76.9				

Table 3 shows that the majority of participants (76.9%) had a positive attitude toward the HPV vaccine, while 23.1% displayed a neutral attitude. Notably, none reported a negative attitude. Attitude scores ranged from 17 to 30, with a median of 23, a mean of 23.07, and a standard deviation of 2.521, indicating that most responses. Most responses reflected a generally favorable viewpoint with minimal variation. The absence of negative attitudes suggests participants did not oppose HPV vaccination; however, the presence of neutral attitudes may reflect uncertainty or limited awareness—likely linked to the overall poor knowledge levels observed in the study. Despite knowledge gaps, the strong positive attitude is encouraging, indicating openness to vaccination. This highlights the need for enhanced health education programs, which could strengthen positive perceptions and potentially translate them into improved HPV vaccine uptake, contributing to cervical cancer prevention.

Section IV – Correlation between knowledge level and attitudes level towards HPV vaccines among school students.

Table 4: Correlation between knowledge and attitudes among school students on HPV vaccines for cervical cancer.
n = 160

Correlation	r value	P value
Knowledge and attitude	- 0.017	0.835

***p<0.05 level of significance**

NS-Non significant

Table 4 depicts the correlation between knowledge and attitudes among school students on HPV vaccines for cervical cancer was measured by karl pearson correlation (r=-0.017, p=0.835) indicate negative correlation and was found to be statistically non-significant.

5.Discussion

The findings of the present study revealed that although the majority of students possessed poor knowledge regarding HPV infection and vaccination, their attitudes toward HPV vaccination were predominantly positive. These findings are consistent with several international studies. Similar deficits in knowledge were reported by Biyazin et al. among Ethiopian high school students and by Beutlin and Jose among nursing students, indicating that inadequate awareness of HPV vaccination is a widespread global issue [8,9] . Studies conducted in India and other low- and middle-income countries, such as that by Dewan et al., also highlighted limited understanding of HPV and its vaccine among adolescents [10] .

In contrast, a study conducted in Saudi Arabia by Alherz et al. reported comparatively higher levels of knowledge among parents, suggesting that health awareness may differ significantly between adolescents and adults [11] .Despite limited knowledge, the positive attitudes observed in the present study align with findings from Ethiopia and India, where students demonstrated willingness to accept HPV vaccination once informed about its benefits [8,10] .The absence of a significant correlation between knowledge and

attitude further suggests adolescents' perceptions are shaped more by social and peer factors than by factual understanding.

Overall, the comparison with previous studies underscores the global importance of improving HPV-related awareness among adolescents while simultaneously leveraging their favorable attitudes through effective school-based education and communication strategies. The development of an informational booklet, as undertaken in the present study, represents a practical step toward enhancing awareness and promoting cervical cancer prevention among adolescent students.

6.Limitations

The following limitations were recognized in the study:

- The study's geographic limitation may reduce the generalizability of findings.
- The study assessed only knowledge and attitude toward HPV vaccination and did not explore actual vaccine uptake or behavioural practices.

7.Conclusion

The study concludes that knowledge and awareness about HPV and its vaccine are largely inadequate among middle and high school students, despite some willingness to accept vaccination. Misconceptions, limited exposure to accurate information, and socio-cultural influences continue to influence students' attitudes, highlighting the need for focused educational efforts. The informational booklet developed from the study serves as a practical tool to address these gaps and support school health programs. Strengthening HPV-related education is crucial for improving vaccine acceptance and ultimately reducing the burden of cervical cancer. The study offers a foundation for future research and emphasizes the importance of coordinated educational, community, and policy-driven strategies to enhance HPV vaccination efforts in India.

8.Recommendations

- Future studies should involve larger, demographically diverse samples.
- Assess actual HPV vaccine uptake among adolescents in similar research.
- Carry out qualitative studies to explore reasons for poor knowledge and factors influencing attitudes.
- Evaluate the effectiveness of school-based educational interventions on knowledge and attitudes.
- Investigate the roles of parents, teachers, and healthcare providers in shaping adolescents' acceptance of HPV vaccination.
- Identify socio-economic and cultural barriers and facilitators affecting HPV vaccination.
- Examine the long-term impact of awareness programs on adolescents' knowledge, attitudes, and preventive behaviors.

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