

Original Article

Knowledge about Human Papillomavirus (HPV) Infection among Adolescent Girls in a Selected Girls School in Enayetpur, Sirajganj

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Abstract

Background: Human papillomavirus (HPV) is a common sexually transmitted infection and the leading cause of cervical cancer globally. In Bangladesh, cervical cancer remains a major public health concern, and HPV vaccination has been introduced to reduce disease burden. Despite vaccination programs, awareness and knowledge about HPV infection and prevention among adolescents remain variable.

Objective(s): To assess the knowledge about HPV infection, its transmission, associated diseases, and preventive measures, including vaccination, among adolescent girls in a selected girls' school in Enayetpur, Sirajganj, Bangladesh.

Materials and methods: A descriptive cross-sectional study was conducted at Meher-Un-Nessa Girls' High School, Enayetpur, from July to December 2024. A total of 130 students from classes VIII, IX, and X were selected using convenience sampling. Data were collected through face-to-face interviews using a semi-structured questionnaire and analyzed using SPSS version 27. Findings were presented using tables and graphs.

Results: The majority of respondents were 14-15 years old (83.8%) and predominantly from nuclear families (68.5%). Most respondents (77.7%) correctly identified cervical cancer as an HPV-related disease, though misconceptions were present, such as 67.7% incorrectly mentioning cold and cough. Regarding HPV transmission, 52.3% identified sexual contact, while 66.2% mentioned physical touch. Awareness of the HPV vaccine was high (97.7%), but only 41.5% reported having received it. Concerning prevention, 84.6% recognized vaccination, 76.2% mentioned health education, and 50.0% cited safe behavior, while 17.7% did not know preventive measures.

Conclusion: Adolescent girls in this school had reasonable awareness of HPV infection and vaccination but demonstrated gaps in knowledge regarding transmission and preventive behaviors. Targeted school-based health education programs emphasizing accurate information and vaccine uptake are recommended to reduce future HPV-related disease burden in Bangladesh.

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Introduction

Human papillomavirus (HPV) is a highly prevalent sexually transmitted infection and the principal cause of cervical cancer and other anogenital cancers worldwide.¹ Cervical cancer remains a major public health problem, particularly in low- and middle-income countries where access to preventive screening and vaccination programs

is limited.¹ In Bangladesh, cervical cancer is one of the leading causes of cancer-related deaths among women, with thousands of new cases reported annually.² HPV types 16 and 18 are responsible for the majority of cervical cancer cases and have been detected in high-grade cervical lesions and invasive cervical cancer specimens in the country.³

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To address this burden, the Government of Bangladesh, with support from UNICEF and Gavi (the Vaccine Alliance), has implemented nationwide HPV vaccination campaigns targeting adolescent girls aged 10-14 years.^{4,5} These campaigns have achieved high coverage, with reports indicating that over 90% of eligible girls received the HPV vaccine across Bangladesh.⁵ The HPV vaccine has been integrated into the national immunization strategy as a primary preventive measure against cervical cancer.⁶

Despite these efforts, evidence suggests that knowledge and awareness about HPV infection, its modes of transmission, and preventive interventions including vaccination remain limited among adolescents and their caregivers in Bangladesh.¹⁻³ Understanding adolescents' knowledge and perceptions is essential for strengthening health education programs, improving vaccine uptake, and reducing the future burden of HPV-related diseases.

Therefore, this study aimed to assess the knowledge about HPV infection and its prevention among adolescent girls in a selected girls' school in Enayetpur, Sirajganj, Bangladesh.

Materials and methods

This descriptive cross-sectional study was conducted at Meher-Un-Nessa Girls' High School in Enayetpur of Chauhali upazila under Sirajganj District, Bangladesh. The study was carried out over a six-month period from July to December 2024. The target population comprised students of Meher-Un-Nessa Girls' High School in Enayetpur, Chauhali upazila, Sirajganj District. A convenience sampling technique was adopted to select the respondents. A total of 100 students were included in the study. Students of classes VIII, IX, and X who provided informed consent were considered eligible and included in the study. Students who did not provide consent and those who were ill during the data collection period were excluded. Data were collected using a semi-structured questionnaire designed to assess knowledge regarding Human Papillomavirus (HPV) infection. The questionnaire contained both closed-ended and relevant structured questions. Data were collected through face-to-face interviews to ensure clarity and completeness of responses. Prior to analysis, the collected data were checked, cleaned, and edited to identify and correct any inconsistencies or errors. The data were then entered into a computer and analyzed using Statistical Package for the Social Sciences (SPSS) software version 27. The findings were presented in the form of tables and graphs in the report for clear interpretation and understanding.

Results

Table I: Sociodemographic characteristics of the respondents (n=130)

Variable	Frequency	Percent
Age		
13 years	8	6.2
14 years	44	33.8
15 years	65	50.0
16 years	13	10.0
Mean: 14.64, SD: ± 0.746		
Religion		
Islam	125	96.2
Sanatan	5	3.8
Family type		
Nuclear	89	68.5
Joint/Extended	41	31.5
Family size		
4-5 persons	86	66.2
6-7 persons	26	20.0
8-9 persons	18	13.8
Mean: 5.36, SD: ± 1.474		

Table 1 presents the sociodemographic characteristics of the 130 adolescent girls who participated in the study on knowledge about Human Papillomavirus (HPV) infection. Regarding age distribution, half of the respondents (50.0%) were 15 years old, followed by 33.8% who were 14 years old. A smaller proportion were 16 years old (10.0%) and 13 years old (6.2%). The mean age of the respondents was 14.64 years (SD ± 0.746), indicating that the majority were in mid-adolescence. In terms of religion, most of the respondents were Muslim (96.2%), while 3.8% belonged to the Sanatan religion. Concerning family type, more than two-thirds (68.5%) of the participants came from nuclear families, whereas 31.5% belonged to joint or extended families. With regard to family size, the majority (66.2%) had 4-5 family members. About one-fifth (20.0%) reported 6-7 members in their family, and 13.8% had 8-9 members. The mean family size was 5.36 (SD ± 1.474).

Figure 1 presents the distribution of respondents according to their academic class. Among the 130 adolescent girls, the highest proportion (47.7%) were studying in Class X (n=62). This was followed by 33.8% (n=44) from Class VIII. The lowest proportion of respondents, 18.5% (n=24), belonged to Class IX.

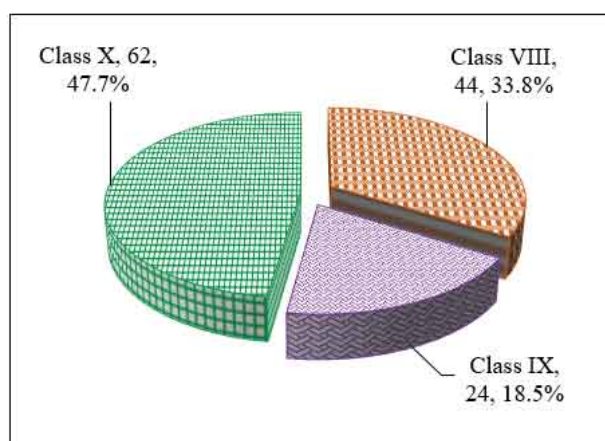


Figure 1: Distribution of the respondents by academic class (n=120)

Table II presents the respondents' knowledge regarding diseases caused by Human Papillomavirus (HPV), its mode of transmission, and awareness of the HPV vaccine. Regarding diseases caused by HPV (multiple responses), 101 (77.7%) respondents mentioned cervical cancer and 98 (75.4%) reported skin diseases. However, 88 (67.7%) incorrectly identified cold and cough as diseases caused by HPV. A total of 13 (10.0%) respondents stated that they did not know about diseases caused by HPV. In terms of mode of transmission (multiple responses), 86 (66.2%) respondents mentioned physical touch, 70 (53.8%) reported transmission through blood, and 68 (52.3%) identified sexual contact. Only 4 (3.1%) respondents stated that they did not know the mode of transmission. Regarding knowledge of the HPV vaccine, 127 (97.7%) respondents were aware that a vaccine is available, while 3 (2.3%) did not know about the existence of the vaccine.

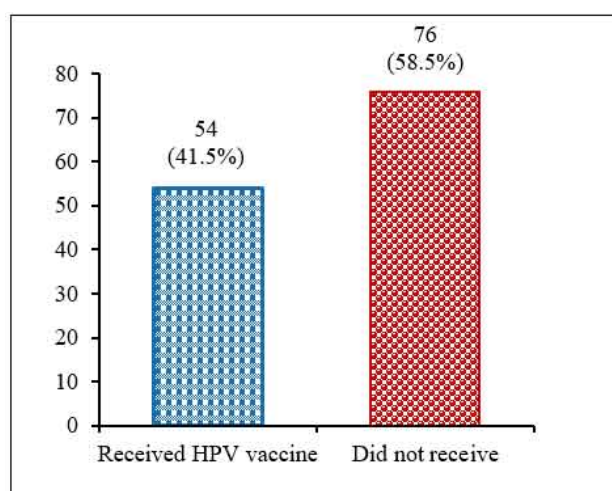


Figure 2: Distribution of the respondents by HPV vaccine uptake (n=130)

Table II: Respondents knowledge of diseases caused by human papilloma virus

Variable	Frequency	Percent
Diseases caused by HPV*		
Cold and cough	88	67.7
Skin diseases	98	75.4
Cervical cancer	101	77.7
Don't know	13	10.0
Mode of transmission*		
Sexual contact	68	52.3
Physical touch	86	66.2
Through blood	70	53.8
Don't know	4	3.1
Knowledge of HPV vaccine		
There is vaccine	127	97.7
Don't know	3	2.3

* Multiple responses

Figure 2 shows the distribution of respondents according to HPV vaccine uptake among the 130 participants. Out of the total respondents, 54 (41.5%) reported that they had received the HPV vaccine. In contrast, 76 (58.5%) stated that they had not received the vaccine.

Table III: Respondents' knowledge of HPV prevention

Knowledge of HPV prevention	Frequency	Percent
Health education	99	76.2
Vaccination	110	84.6
Safe behavior	65	50.0
Don't know	23	17.7

* Multiple responses

Table III presents the respondents' knowledge about the prevention of Human Papillomavirus (HPV) infection. As multiple responses were allowed, the total percentage exceeds 100%. Among the respondents, 110 (84.6%) identified vaccination as an effective preventive measure against HPV infection. A considerable proportion, 99 (76.2%), mentioned health education as a preventive strategy. Half of the respondents, 65 (50.0%), recognized safe behavior as a method of prevention. However, 23 (17.7%) respondents reported that they did not know how HPV infection could be prevented. Overall, the

findings suggest that although most respondents were aware of vaccination and health education as preventive measures, a notable proportion still lacked adequate knowledge regarding HPV prevention.

Discussion

This study assessed the knowledge about Human Papillomavirus (HPV) infection among adolescent girls in a selected girls' school in Enayetpur, Sirajganj, Bangladesh. The majority of participants were in mid-adolescence (mean age 14.64 years), consistent with other school-based studies in Bangladesh, which targeted adolescent girls as the primary recipients of HPV education and vaccination programs.⁷ Most respondents came from nuclear families with an average family size of 5.36, reflecting the common family structures in semi-urban and rural areas of Bangladesh.⁸ Academic class distribution showed a higher proportion of girls in Class X, which may indicate increased exposure to health education at higher secondary levels.

Regarding knowledge of diseases caused by HPV, 77.7% of participants correctly identified cervical cancer as associated with HPV infection. This aligns with findings from similar studies among adolescent girls in Bangladesh, where awareness of cervical cancer was higher than awareness of other HPV-related conditions.⁹ However, misconceptions were evident, as 67.7% of respondents incorrectly reported cold and cough as HPV-related diseases. Misunderstanding of disease causation highlights the need for targeted health education interventions in schools to clarify HPV-specific health risks.¹⁰

The respondents' knowledge of HPV transmission was also mixed. While a majority (66.2%) mentioned physical touch and 53.8% mentioned transmission through blood, only 52.3% identified sexual contact, which is the primary mode of HPV transmission. This finding is similar to previous studies in Bangladesh and other low- and middle-income countries, indicating that adolescents often have partial or inaccurate knowledge of viral transmission pathways.^{11,12} Encouragingly, awareness of HPV vaccination was high (97.7%), reflecting the success of national immunization campaigns.^{7,8} Nevertheless, actual vaccine uptake among participants was 41.5%, suggesting a gap between awareness and practice, which may be influenced by parental consent, accessibility, and sociocultural factors.¹³

Knowledge of preventive measures was relatively strong, with 84.6% recognizing vaccination and 76.2% noting health education as important prevention strategies. Safe behavior, such as practicing safe sexual conduct, was recognized by only 50% of respondents. These findings are consistent with other Bangladeshi studies, emphasizing that while knowledge of vaccination is high,

broader preventive behaviors remain under-recognized among adolescents.^{9,12}

Overall, the study demonstrates that while school-going adolescent girls in Enayetpur have reasonable awareness about HPV and vaccination, misconceptions about transmission, disease causation, and preventive behaviors persist. These findings underline the importance of integrating structured HPV education into school curricula, emphasizing both vaccination and correct behavioral prevention strategies, and involving parents and teachers to reinforce accurate knowledge.^{7,10,13}

Conclusion

The findings of this study indicate that adolescent girls in the selected girls' school in Enayetpur, Sirajganj, have moderate to good knowledge regarding HPV infection and its prevention. Awareness of cervical cancer and the availability of HPV vaccination was high; however, significant misconceptions exist regarding HPV transmission, disease causation, and preventive behaviors, such as safe sexual practices. Although most participants recognized vaccination and health education as preventive strategies, actual vaccine uptake was suboptimal, highlighting a gap between knowledge and practice. These results underscore the need for targeted school-based health education programs that emphasize accurate information on HPV transmission, disease prevention, and the importance of vaccination. Involving parents, teachers, and community stakeholders in awareness campaigns may further enhance vaccine uptake and adoption of safe behaviors. Strengthening adolescent-focused HPV education could contribute substantially to reducing the future burden of cervical cancer and other HPV-related diseases in Bangladesh.

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