

A Study to assess the effectiveness of structured teaching programme on Knowledge Regarding Human Papilloma Virus Vaccination Among Adolescent Girls in a selected college in Puducherry

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Background: One important protective measure is HPV vaccination. Adolescent females in particular frequently lack awareness and information about HPV and its immunization.

Techniques:Pre-test and post-test pre-experimental designs with a single group were employed. Convenience sampling was used to choose 120 young females in total. Both written and verbal consent were acquired. An interview schedule was used to gather demographic information. A 13-item Human Papillomavirus Knowledge Questionnaire (HPV-KQ) was used to evaluate knowledge. A comprehensive educational session about HPV infection, cervical cancer, risk factors, transmission, signs and symptoms, screening, and vaccination was given to the attendees. The same questionnaire was used for a post-test seven days later. Descriptive statistics (mean, standard deviation, frequency, percentage) and inferential statistics (paired t-test, chi-square test) were used in the analysis of the data using SPSS v25.

Result: According to the pre-test results, 52 people (43.3%) lacked sufficient knowledge, 68 people (56.7%) had somewhat adequate knowledge, and no one has adequate knowledge. According to the post-test results, 99 participants (82.5%) had acceptable knowledge, 21 participants (17.5%) had marginally sufficient knowledge, and none remained in the deficient group, suggesting a considerable improvement. The STP's efficiency was confirmed by a paired t-test, which revealed a substantial improvement in mean knowledge scores from 5.19 (pre-test) to 9.31 (post-test), $t = -33.444$, $p < 0.001$.

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Conclusion: Adolescent females' vaccination knowledge is greatly enhanced by structured educational programs. Improved awareness, preventative measures, and well-informed choices regarding HPV vaccine might result from increased understanding.

Keywords: Human papilloma virus vaccination, adolescent girls, structured teaching programme, knowledge

Introduction:

Human papillomavirus (HPV) is one of the most common sexually transmitted viral infections, affecting both men and women worldwide. The major cause of cervical cancer is persistent infection with high-risk HPV strains, which has been linked to anal, vaginal, vulvar, penile, and oropharyngeal cancers. Cervical cancer is a major public health concern, particularly in low- and middle-income countries that lack adequate screening and preventive programs. According to global health data, HPV infection is the cause of almost all cervical cancers. HPV strains 16 and 18 account for more than 70% of cervical cancer incidences globally. Early preventive medicines are crucial in lowering HPV-related morbidity and death. Vaccination against HPV has been found to be an effective primary prevention method for HPV-related diseases (1). HPV vaccinations are preventive vaccines designed to prevent infection with high-risk HPV strains that cause cervical cancer. These vaccines encourage the immune system to create protective antibodies, preventing HPV infection before it occurs. Currently available vaccines include bivalent, quadrivalent, and nonavalent vaccines, which protect against numerous HPV strains. The World Health Organization advises HPV vaccination for females aged 9-14 years before the initiation of sexual engagement to provide optimal protection. Studies have shown that HPV vaccines are extremely efficient in preventing persistent HPV infections and precancerous cervical lesions. To lower the incidence of cervical cancer, many nations have introduced HPV vaccination into their national immunization programmes. Thus, increasing vaccine coverage is considered a critical approach to worldwide cervical cancer prevention (2).

Despite the efficacy of HPV vaccination, Awareness and acceptance of HPV vaccination remain low in many underdeveloped countries. Lack of education, misunderstandings about vaccine safety, and restricted access to healthcare all contribute to low vaccination rates. Educational interventions and health promotion programs can help improve awareness and attitudes towards HPV vaccination. Healthcare workers, particularly nurses, play a vital role in educating adolescents, parents, and communities about the advantages of HPV vaccination. Improving public health education can increase vaccination acceptability and coverage rates. Raising awareness and vaccination rates can drastically reduce the incidence of HPV infections and cervical cancer. Thus, promoting HPV vaccination through effective health education techniques is critical for preventing future generations from developing HPV-related disorders (1,2). Adolescence is an important period for health education and preventive measures, particularly in terms of reproductive health and sexually transmitted illnesses. Adolescent females who are aware of the human papillomavirus (HPV) and its vaccination are better able to avoid cervical cancer later in life. Adequate awareness helps young girls realize the need to be vaccinated against HPV before they become infected. However, studies have shown that understanding of HPV infection, transmission, and vaccination remain inadequate among teenagers in many regions worldwide. A Lack of awareness may result in low vaccine adoption and coverage. Adolescent-targeted educational programs can help Adolescents learn and practice healthy habits. consequently, boosting understanding among adolescent females is critical for increasing HPV vaccine

uptake (3). Several studies have found that many adolescent females lack awareness of HPV infection and its long-term health effects. Misconceptions about vaccines, fear of adverse effects, and lack of solid information frequently impact people's attitudes toward HPV vaccination. School-based health education initiatives have been shown to greatly increased awareness and attitudes towards HPV vaccination. Teachers, nurses, and other healthcare workers play important roles in provide accurate information about HPV and cervical cancer prevention. When teenagers receive adequate health information, their desire to be vaccinated against HPV increases. As a result, increasing school health education initiatives can help teenage females understand and accept vaccines (4). Parental influence and sociocultural variables both influence teenagers' awareness and decision-making regarding HPV vaccination. Many communities have restricted discussion regarding sexually transmitted illnesses, leading to a lack of knowledge among young females. According to studies, teenagers who receive information from healthcare experts or school-based programs have a better understanding of the HPV vaccine. Encourage open conversations regarding reproductive health to promote preventative interventions. Improving teenagers' understanding can lead to higher vaccination rates and fewer HPV-related illnesses (3).

Research findings also show that awareness of HPV vaccination is substantially linked to good views regarding vaccination. Adolescents who understand the benefits of vaccination are more inclined to accept and advocate it to others. Health education initiatives, such as seminars, awareness campaigns, and organized teaching programs, have been shown to improve knowledge among female's school age. Such interventions not only increase awareness of HPV infections but also dispel myths and prejudices about vaccination. Structured Teaching Programme (STP) is a structured educational technique that aims to increase individuals' knowledge and understanding of certain health subjects. In the context of HPV

vaccination, STP is critical for teaching teenage females about the origins, transmission, prevention, and effects of HPV infection. Many teenagers lack appropriate awareness of cervical cancer prevention and the benefits of HPV vaccination. STP and other educational initiatives aim to deliver accurate information and overcome vaccination myths. Through structured instruction sessions, students developed a greater awareness of HPV infection and the need for vaccination. Thus, improving awareness among teenage females is an important technique for encouraging preventive health practices. Studies have shown that organized educational programs greatly increased young women's knowledge and awareness of HPV vaccination (6).

Methods:

This study was carried out at the Vinayaka Missions Research Foundation's School of Allied Health Sciences, DU Campus, Puducherry, using a pre-experimental design, one group, and pre- and post-test evaluations. Before commencing the study, the investigator explained the aims and objectives to the participants and obtained their written informed consent. The participants' confidentiality and identities were preserved. The first portion includes a pre-test to assess adolescent girls' comprehension of the HPV vaccine. The pre-test consisted of a 13-item Human Papillomavirus Knowledge Questionnaire (HPV-KQ). Participants were advised to read each question carefully and select the best appropriate response. Each accurate answer earned one point, while each wrong response received zero. Following the pre-test, the investigator administered a Structured Teaching Program (STP) to the second phase individuals. The training program contains information about the importance of HPV vaccination and prevention strategies. To improve comprehension, the program included lectures, discussions, and appropriate teaching aids. The third phase included a seven-day post-test on the same 13-item Human Papillomavirus Knowledge Questionnaire (HPV-KQ) as the pretest. The post-test is intended to evaluate the

effectiveness of the Structured Teaching Programme by comparing knowledge scores obtained before and after the educational intervention among adolescent females. The Chi-square test was used to investigate the link between adolescent girls' awareness of HPV vaccination and particular demographic characteristics.

Results

This study examined the frequency and percentage breakdown of demographic factors among teenage girls. Most participants 44 (36.7%), were between the ages of 18 and 20, followed by 39 (32.5%) who were 24, 25 and 37 (30.8%) at 2123 years old. In terms of religion, the majority of participants (78, 65.0%) identified as Hindus, followed by Muslims (25, 20.8%) and Christians. In terms of family structure, 41 (34.2%) participants belonged to nuclear families, 40 (33.3%) to joint families, and 39 (32.5%) to extended families. In terms of where they lived, 63 (52.5%) participants were from rural areas, while 57 (47.5%) were from cities. All 120

participants (100%) were undergraduates college students.

Monthly household income was distributed as follows: 35 (29.2%) earned less than ₹10,000, 32 (26.7%) earned more than ₹20,000, 29 (24.2%) earned between ₹10,000 and ₹15,000, and 24 (20.0%) earned between ₹15,000 and ₹20,000. In terms of menarche age, 59 (49.2%) participants had it between the ages of 10 and 13, followed by 42 (35.0%) between the ages of 13 and 16, and 19 (15.8%) beyond the age of 16. In terms of menstrual cycle patterns, 80 women (66.7%) reported regular cycles, and 40 (33.3%) reported irregular periods. All 120 participants (100%) were single and childfree. Only four patients (3.3%) reported a family history of cancer, whereas the great majority, 116 (96.7%) did not. The majority of the 115 people (95.8%) had not received the HPV vaccine, while only 5 (4.2%) had. In terms of information source 70(58.3%) participants cited family as their primary source, followed by television (36,30.0%) and newspapers (14, 11.7%).

Table 1 Frequency and Percentage Distribution of Pre-test and Post-test Level of Knowledge Regarding HPV Vaccination among Adolescent Girls (N = 120)

Knowledge Level	Pre-Test	Pre-Test	Post-Test	Post-Test
Knowledge Level	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Inadequate	52	43.3%	0	0%
moderate	68	56.7%	21	17.5%
adequate	0	0%	99	82.5%
Total	120	100%	120	100%

Table 1 shows the frequency and percentage distribution of adolescent girls' pre- and post-test awareness of HPV infection and vaccination. In the pre-test evaluation, more than half of the participants (68 [56.7%]) reported pretty acceptable knowledge, whereas 52 (43.3%)

reported insufficient comprehension. Before the intervention, none of the participants had enough information. In the post-test evaluation, 99 (82.5%) people shown adequate knowledge, 21 (17.5%) showed moderate knowledge, and none demonstrated insufficient understandin

Table 2 Effectiveness of Structured Teaching Programme (STP) on Adolescent Girls' Knowledge Regarding HPV Vaccination (N = 120)

Knowledge Score	Mean	Standard Deviation	Mean Difference	t-value	df	p-value
Pre-test	5.19	2.159	4.117	33.44	119	0.001*
Post-test	9.31	2.118	4.117	33.44	119	0.001*

**** $-p < 0.001$ highly significant**

Table 2 illustrates how the adolescent girls' comprehension of HPV vaccination was enhanced by the Structured Teaching Program. After the intervention, the average post-test knowledge score increased from 5.19 (SD= 2.159) to 9.31 (SD=2.118). The pre-and post-test knowledge scores differed by an average of 4.117. The calculated paired t-value was 33.44 with 119 degrees of freedom and a p-value of 0.001, indicating statistical significance at the $p < 0.05$ level. This indicates the knowledge of young women increased significantly when the Structured Teaching Program was implemented. Consequently, the Structured Teaching Program was successful in improving teenage girls' comprehension of the HPV vaccine.

The results indicate that age ($\chi^2 = 1.451$, $p = 0.484$), religion ($\chi^2 = 4.127$, $p = 0.127$), family type ($\chi^2 = 1.419$, $p = 0.492$), residence ($\chi^2 = 1.863$, $p = 0.172$), family income ($\chi^2 = 2.394$, $p = 0.495$), age at menarche ($\chi^2 = 2.676$, $p = 0.262$), menstrual cycle ($\chi^2 = 0.068$, $p = 0.794$), family history of cancer ($\chi^2 = 0.075$, $p = 0.784$), And HPV vaccination status ($\chi^2 = 2.857$, $p = 0.041$) were statistically significant at the $p < 0.05$ level, and the source of knowledge ($X^2=1.490$, $P=0.475$)was not.

Discussion

Currently, 68 (56.7%) of the 120 teenage girls who took the pre-test had reasonably acceptable knowledge, while 52 (43.3%) did not, according to the study's findings. Before the intervention, none of the participants had sufficient information. In the post-test evaluation, 99 individuals (82.5%) showed sufficient knowledge, whereas 21 participants (17.5%) demonstrated moderate knowledge, and none

demonstrated insufficient knowledge. The mean and standard deviation of teenage girls' HPV vaccine knowledge before and after the test. The mean and standard deviation of teenage girls' HPV vaccine knowledge before and after the test. The average pre-test knowledge score was 5.19, with a 2.159 standard deviation (SD).

The average post-test knowledge score increased to 9.31, with a standard deviation of 2.118, after the proposed training program was Implemented. The average score increased significantly from 5.19 to 9.31, indicating that the Structured Teaching Program was successful in raising teenage girls' knowledge about HPV Vaccination. The average post-test knowledge score rose from the average pre-test score of 5.19 (SD= 2.159) to 9.31 (SD=2.118) following the intervention. The average difference between the pre- and post-test knowledge scores was 4.117. The computed paired t-value was 33.44, based on 119 degrees of freedom. At the $p < 0.05$ level, A p-value of 0.001 indicated statistical significance.

This suggests that teenage girls' knowledge levels significantly improved when the Structured Teaching Program was Implemented. Consequently, it was discovered that the Structured Teaching Program was successful in raising adolescent girls' awareness of the HPV vaccination. The relationship between teenage girls' pre-test awareness of HPV vaccination and certain demographic traits. The association was investigated using the chi-square test.

The findings show that age ($\chi^2 = 1.451$, $p = 0.484$), religion ($\chi^2 = 4.127$, $p = 0.127$), family type ($\chi^2 = 1.419$, $p = 0.492$), residence ($\chi^2 = 1.863$, $p = 0.172$), family income ($\chi^2 = 2.394$, $p = 0.495$), age at menarche ($\chi^2 = 2.676$, $p =$

0.262), menstrual cycle ($\chi^2 = 0.068$, $p = 0.794$), family history of cancer ($\chi^2 = 0.075$, $p = 0.784$), and source of knowledge ($\chi^2 = 1.490$, $p = 0.475$) were not statistically significant at the $p < 0.05$ significance level, while HPV vaccination status ($\chi^2 = 2.857$, $p = 0.041$) was statistically significant.

Conclusion:

This study aimed to assess the impact of a Structured Teaching Programme (STP) on teenage girls' understanding of HPV vaccination at a particular institution in Pondicherry. The study's findings demonstrate that a significant proportion of participants lacked significant understanding of HPV and its vaccination prior to the intervention. Specifically, the pre-test evaluation showed that none of the participants had acceptable knowledge before STP, with 68 individuals (56.7%) having somewhat suitable knowledge and 52 individuals (43.3%) having inadequate knowledge. This indicates that young girls have a conspicuous lack of knowledge and comprehension of immunization. A post-test evaluation conducted after the session showed a notable increase in mean knowledge. Of the participants, 99 (82.5%) had adequate knowledge,

21 (17.5%) had slightly acceptable knowledge, and none had inadequate knowledge. The influence of the STP was further substantiated by the matched sample analysis, which showed a significant increase in the mean knowledge score from 5.19 (pre-test) to 9.31 (post-test), with a t-value of -33.444 ($p < 0.001$). This significant statistical improvement indicates that the STP was highly successful in raising teenage girls' knowledge of HPV infection and vaccination.

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