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Effectiveness of Health Education Program on Awareness Regarding HPV Vaccination for Prevention of Cervical Cancer Among Adolescent Girls Studying at Selected Degree Colleges of Belagavi

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Abstract*— Cervical cancer is the fourth most prevalent type of cancer in women. worldwide, with 660,000 new cases and 350,000 deaths annually. In India, it ranks as the second most common cause of cancer deaths, contributing to 25% of global cases. The WHO recommends the HPV vaccine before a female's first sexual experience to prevent cervical cancer. Aimed to assess the effectiveness of a health education program on Awareness regarding HPV vaccination for prevention of cervical cancer among adolescent girls studying at selected degree colleges of Belagavi. A study design, one group pre-test and post-test, was used. A simple random sampling technique was used to select the samples. A sum total of 225 adolescent girls were surveyed using a structured Knowledge questionnaire. Results showed that in the pre-test 81.3% of participants had average knowledge, and 17.8% had a good knowledge level about the HPV vaccine. In the post-test of knowledge, it increased significantly, 57.3% had a good level of knowledge. The percentage of participants with average knowledge decreased to 41.35%. A considerable improvement was seen in the mean knowledge score, which went from 15.23 ± 2.74 to 17.61 ± 3.23 (p = 0.000). was significant association was found between the stream of study and the baseline data of adolescent girls about the HPV vaccination. Conclusion: The results of the study showed that health education initiatives help creating awareness regarding HPV vaccination for the prevention of cervical cancer.

Index Terms: Health education program, HPV Vaccination, cervical cancer, adolescents, knowledge, Prevention.

I. INTRODUCTION

Cervical cancer, the fourth most common cancer in women globally, is estimated to result in 66,0000 cases and more than 35,0000 fatalities annually.[1] The second most prevalent type is cervical cancer, a cause of cancer-related mortality among Indian women, accounting for 25% of all deaths worldwide.[2] India's national immunization program does not include the HPV vaccine. despite WHO guidelines. But it has been accessible since 2008, and in 2016, Punjab and Delhi began to roll it out. The quadrivalent Gardasil TM (Merck, USA) is currently available in India, however, the bivalent CervarixTM (GSK, Belgium) is not[3]

As per WHO guidelines, teenage girls should receive the HPV vaccine, the main preventative measure for cervical cancer, prior to their first sexual encounter.[4] While HPV vaccinations are safe efficacious, their uptake rate among at-risk individuals was less than expected, which diminished their potential public health impact.[5]

Adolescence gets ready to become adults. In addition to sexual maturation, Significant physical, mental, and social changes occur in children during these discrete life phases[6] By educating the public, The government has to take some responsibility for increasing vaccine acceptability[7]. Cancer can prevent the most kind of the disease in as many as 90% of cases. DNA testing for HPV infection is increasingly being utilized to help identify high-risk groups.[8]Indian women are largely ignorant of cervical. cancer caused by HPV and the availability of a safe and effective vaccine.[9] Several studies have shown that college students are unaware of the high danger of controlling HPV and discovered that Most college students weren't in agreement that they were in danger of contracting HPV (56% and over 75%, respectively).[10] Research from a number of nations, including China and Romania, shows that adolescents generally don't know enough about HPV, its vaccinations, and cervical cancer.[11] Research from a number of nations, including China and Romania, shows that adolescents generally don't know enough about HPV, its vaccinations, and cervical cancer.[12]

II. MATERIAL AND METHOD

The research was done with one-group pretest and post-test design among Health sciences students from various fields like Nursing, Physiotherapy, and Pharmacy. The sampling was done with basic random sampling (lottery method) with sample size of 225 adolescent female students.

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Data was collected using a structured knowledge questionnaire, and the baseline data. The ethical clearance received from the institutional ethical committee. The permit to gather data was acquired from principals of all health institutes, and the students provided written informed consent.

A. Data collection

Honouring ethical clearance, participants received an explanation of the study's objectives and gave their informed consent. On the same day, a scheduled teaching session was held after a pre-test on knowledge about HPV vaccinations. On the eighth day after that, a post-test was given

III. RESULTS

The study's findings are explained in two parts.

Section 1

The study had 225 participants, who were split equally between 1st year students of physiotherapy (34.7%), nursing (32.4%), and pharmacy (32.9%). The majority of the participants, 62.6%, were 18 years of age, followed by those who were 19 (34.7%) and 20 years of age or over 2.7%. most of the participants were from the Hindu religion (72%), Christians (14.3%), Muslims (12.4%), and others (1.3%). They had not had any HPV vaccinations.

Table I: Distribution by baseline data characteristics of adolescent girls studying at selected degree colleges of Belagavi.

Variables	**n (%)**
Stream of Study	
Pharmacy	74 (32.9)
Nursing	73 (32.4)
Physiotherapy	78 (34.7)
Standard of studying	
D-Pharma 1st Year	74 (32.9)
BSc 1st Year	73 (32.4)
1st Year	78 (34.7)
Age	
≤18 Years	141 (62.6)
19 Years	78 (34.7)
≥20 Years	6 (2.7)
Religion	
Hindu	162 (72)
Christian	32 (14.3)
Muslim	28 (12.4)
Others	3 (1.3)
Family history of Cervical cancer	
Yes	0 (0.0)
No	225 (100.0)
Have you received the HPV vaccine?	
Yes	0 (0.0)
No	225 (100.0)

Section 2

Table II: Distribution of Pre and Post-Test Knowledge Levels About HPV Vaccination in the Prevention of Cervical Cancer Among Adolescent Girls

Variable	**Pre-Knowledge (N = 225)**	**Post-Knowledge (N = 225)**
Knowledge Level	n (%)	n (%)
Poor	2 (0.9)	3 (1.4)
Average	183 (81.3)	93 (41.3)
Good	40 (17.8)	129 (57.3)

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The table presents the distribution of adolescent girls' pre-and post-test levels of understanding about HPV vaccination and cervical tumour prevention is shown in the table. Only 17.8% of Participants were classified according to high knowledge and 0.9% as having poor knowledge before the intervention, with the majority (81.3%) having an average level of knowledge. The percentage of participants with good knowledge rose to 57.3% after the intervention, indicating a notable increase. However, the proportion of participants with low knowledge marginally climbed to 1.4%, while the percentage with average knowledge fell to 41.3%.

Table III: Comparison of Pre-Test and Post-Test Knowledge score on HPV Vaccination among Adolescent Girls in the Study

Knowledge	Mean ± SD	Minimum	Maximum	p-value
Pre-Test	15.23 ± 2.74	6.00	22.00	0.05*
Post-Test	17.61 ± 3.23	4.00	24.00	

*Significant at $p < 0.05$ and p-value obtained by the Wilcoxon Signed-Rank Test

The table shows that teenage girls' pre-post-test knowledge scores on HPV vaccination are contrasted in the table. With a statistically significant improvement ($p < 0.05$), the average knowledge score rose dramatically from 15.23 ± 2.74 in the pre-test to 17.61 ± 3.23 in the post-test, with a p-value of 0.000. This noteworthy rise in knowledge scores indicates that the participants' comprehension of HPV vaccination was successfully improved by the intervention

Table IV: Association Between Socio-Demographic Variables and Pre-Test Knowledge Levels on HPV Vaccination

Variables	Level of Pre-Test Knowledge			Fisher (p-value)
	Poor	Average	Good	
	n (%)	n (%)	n (%)	
Stream of Study				
Pharmacy	2 (2.7)	66 (89.2)	6 (8.1)	14.33 (0.002)*
Nursing	0 (0.0)	62 (84.9)	11 (15.1)	
Physiotherapy	0 (0.0)	55 (70.5)	23 (29.5)	
Age				
≤18 Years	2 (1.4)	112 (79.4)	27 (19.2)	2.96 (0.680)
19 Years	0 (0.0)	65 (83.3)	13 (16.7)	
≥20 Years	0 (0.0)	6 (100)	0 (0.0)	
Religion				
Hindu	2 (1.2)	127 (78.4)	33 (20.4)	7.38 (0.310)
Christian	0 (0.0)	30 (93.8)	2 (6.2)	
Muslim	0 (0.0)	24 (85.7)	4 (14.3)	
Others	0 (0.0)	2 (66.7)	1 (33.3)	

*Significant at $p < 0.05$ and p-value obtained by the Fisher Exact Test

The table shows the Association between pre. Evaluate your level of knowledge with the HPV vaccine. among teenage females and sociodemographic factors is shown in the table. Pre-test knowledge levels and the stream of study were found to be significantly correlated ($p = 0.002$), with physiotherapy students demonstrating a higher percentage of good knowledge (29.5%) than pharmacy (8.1%) and nursing (15.1%). Age ($p = 0.680$) and religion ($p = 0.310$) however, did not show a substantial association with pre-test knowledge levels. It indicates that although age and religion do not seem to affect pre-test knowledge regarding HPV vaccination significantly, the field of study may.

Table V: Association Between Socio-Demographic Variables and Post-Test Knowledge Levels on HPV Vaccination

Variables	Level of Post-Test Knowledge			Fisher (p-value)
	Poor	Average	Good	
	n (%)	n (%)	n (%)	
Stream of Study				
Pharmacy	0 (0.0)	19 (25.7)	55 (74.3)	44.801 (0.000)*
Nursing	3 (4.1)	51 (69.9)	19 (26)	

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Variables	Level of Post-Test Knowledge			Fisher (p-value)
	Poor	Average	Good	
	n (%)	n (%)	n (%)	
Physiotherapy	0 (0.0)	23 (29.5)	55 (70.5)	
Age				
≤18 Years	2 (1.5)	59 (41.8)	80 (56.7)	2.875 (0.624)
19 Years	1 (1.3)	30 (38.4)	47 (60.3)	
≥20 Years	0 (0.0)	4 (66.7)	2 (33.3)	
Religion				
Hindu	2 (1.2)	59 (36.5)	101 (62.3)	18.03 (0.003)*
Christian	0 (0.0)	23 (71.9)	9 (28.1)	
Muslim	1 (3.6)	9 (32.1)	18 (64.3)	
Others	0 (0.0)	2 (66.7)	1 (33.3)	

*Significant at $p < 0.05$ and p-value obtained by the Fisher Exact Test

The table displays the Association between post-test Levels of awareness regarding Teenage girls who have received an HPV vaccine and sociodemographic factors. Post-test knowledge levels and the stream of study were discovered to be much correlated (p = 0.000), with a much higher percentage of students from physiotherapy (70.5%) and pharmacy (74.3%) obtaining good knowledge than nursing (26%). Furthermore, there was a strong correlation (p = 0.003) between religion and post-test knowledge levels, with Hindu students having a larger percentage of good knowledge (62.3%) than Christian (28.1%) and Muslim (64.3%) students There was no significant link between age and post-test knowledge levels (p = 0.624). These findings show that age has no discernible impact on post. test knowledge levels, the field of study, and religion may.

IV. DISCUSSION

The present study revealed the effectiveness of a health education program on Awareness regarding HPV vaccination and its role in preventing cervical cancer in teenage college girls. Before the intervention, most participants (81.3%) had an average level of knowledge, with only 17.8% classified as having good knowledge and 0.9% as having poor knowledge. After the intervention, Significant progress was noted, with the proportion of participants having a good knowledge level, i.e. 57.3%. Conversely, the percentage of participants with average knowledge level was 41.3%, poor knowledge slightly increased to 1.4%.

Whereas a study conducted by Janki Patel. To assess how well a self-instructional module on HPV vaccination knowledge works among teenage girls at a particular arts and commerce college in Mehsana City. Showed a similar result, such as 62.5% knew a lot about the HPV vaccine. 37.5% of respondents knew about HPV vaccinations on average. (Patel, J. 2018.

The present study showed a relationship between pre-test Levels of awareness regarding HPV vaccination among teenage females and sociodemographic factors, as shown in the table. Pre-test knowledge levels and the stream of study were shown to be significantly correlated (p = 0.002), with physiotherapy students demonstrating a higher percentage of good knowledge (29.5%) than pharmacy (8.1%) and nursing (15.1%). However, it implies that even though age with pre-test knowledge levels. This implies that even despite age and religion do not seem to affect pre-test knowledge regarding HPV vaccination significantly, the field of study may.

Similar results were discovered from the study done in Greek female students enrolled in higher education. Overall, 59.1% of respondents knew a lot about the vaccination, with health sciences accounting for 67.5% of student enrolment. and 54.0% of students not studying health sciences knowing a lot about it ($p < 0.01$). According to bivariate analysis, all pupils, A high degree of knowledge was significantly correlated with the following factors: being in the age range of 21 and 26; being vaccinated (67.4% vs. 56.2% non-vaccinated); being in a relationship; and having family or friends with HPV. (Donadiki, E. 2013)

The current investigation revealed notable distinctions between socio-demographic and pre-test knowledge levels that are 18.03 (0.003) for religion, and 44.801(0.000the study conducted by Universidad Federal do Ceará. Fortaleza, CE, Brazil. had similar findings regarding religion (p=0.007) Universidad Federal do Ceará. Fortaleza, CE, Brazil results contradicted findings with age (p=0.030), race (p=0.007) and income (p=0.001). (Ferreira, H. L. O. C., 2022)

V. CONCLUSION

The study concluded that it demonstrates how well educational initiatives work to increase teenage girls' awareness of HPV vaccination as a preventative measure against cervical cancer. The necessity of organized awareness campaigns is supported by both researches, although variations in baseline knowledge.

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Conflict of Interest: The authors declares no conflict of interest.

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