

A study to assess the effectiveness of structured teaching programme on knowledge regarding cervical cancer and its prevention among adolescent girls at selected school, Bareilly, U.P.

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Abstract :

Background: Cervical cancer is a major public health concern among women worldwide and is largely preventable through HPV vaccination, health education, safe sexual practices, and regular cervical screening. Improving knowledge among adolescent girls is important for promoting early preventive practices and reducing future cervical cancer risk. **Objective:** To assess the effectiveness of a Structured Teaching Programme (STP) on knowledge regarding cervical cancer and its prevention among adolescent girls at a selected school in Bareilly, Uttar Pradesh. **Materials And Methods:** A pre-experimental one-group pre-test-post-test research design was adopted. Eighty-four adolescent girls from S S Thakur Sahab Singh GIC, Simra Boripur, Bareilly, were selected using purposive sampling. Data were collected using a structured knowledge questionnaire. Descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, paired t-test, and chi-square test, were used for analysis. **Results:** The pre-test mean knowledge score was 7.17 ± 2.122 , which increased to 21.81 ± 1.787 in the post-test, with a mean gain of 14.64 points. The calculated paired t-value was 43.35 (df = 83), indicating a statistically significant improvement in knowledge following the STP ($p < 0.05$). A significant association was also found between pre-test knowledge and selected demographic variables, including educational status and previous knowledge. **Conclusion:** The findings indicate that the Structured Teaching Programme was effective in improving knowledge regarding cervical cancer and its prevention among adolescent girls. Structured health education may therefore be useful in promoting awareness of cervical cancer prevention and preventive practices among adolescents.

Keywords: Adolescent Girls, Cervical Cancer, Prevention.

INTRODUCTION

Adolescence is a critical phase in human development, marked by physical, psychological, and social changes. This period often requires increased focus on health promotion and preventive strategies to ensure long-term well-being. Among various health concerns, cervical cancer remains a significant threat to adolescent girls, especially in developing countries like India. Cervical cancer is a malignant disease that develops in the cells lining the cervix, the lower narrow portion of the uterus that connects the uterine cavity to the vagina. It is one of the most common cancers affecting women worldwide and remains a major public health concern, particularly in developing countries. Cervical cancer develops slowly over several years, usually beginning with precancerous changes in the cervical epithelial cells. If these abnormal cellular changes are not detected and treated in the early stages, they may progress to invasive cancer. The disease is largely preventable and curable when identified early through regular screening and timely treatment.¹

Prevention of cervical cancer is highly effective and includes both primary and secondary preventive strategies. Primary prevention focuses on HPV vaccination, health education, promotion of safe sexual

practices, avoidance of tobacco use, and maintenance of good personal hygiene. HPV vaccines provide protection against the most common high-risk HPV types and are most effective when administered before exposure to the virus, preferably during early adolescence. Secondary prevention includes regular cervical screening programs aimed at detecting and treating precancerous lesions before they progress to cancer. Public awareness campaigns and educational interventions play a vital role in improving knowledge and encouraging preventive behaviors among women and adolescent girls²

NEED OF THE STUDY

India has the second-largest adolescent population in the world, with approximately 243 million individuals aged 10–19 years, accounting for nearly 22.8% of the country's population. Adolescence is a critical developmental period characterized by rapid physical, psychological, emotional, and social changes. Therefore, providing health education during this stage is essential for promoting healthy behaviours and preventing diseases later in life. Many adolescent girls have limited knowledge regarding cervical cancer, its risk factors, symptoms, HPV vaccination, and the importance of cervical cancer screening. Early educational interventions can improve awareness and encourage preventive health practices³

Sharma et al. (2021) reported that only **30% of adolescent girls were aware of cervical cancer**, and an even smaller proportion had knowledge regarding **Human Papillomavirus (HPV) vaccination**. The study highlighted a significant gap in awareness among adolescent girls and emphasized the need for educational interventions to improve knowledge regarding cervical cancer prevention.⁴

Therefore, the investigator considered it necessary to conduct the present study to assess the effectiveness of a Structured Teaching Programme on knowledge regarding prevention of cervical cancer among adolescent girls studying in selected schools of Bareilly, Uttar Pradesh.

STATEMENT OF THE PROBLEM

“A study to assess the effectiveness of structured teaching programme on knowledge regarding cervical cancer and its prevention among adolescent girls at selected school, Bareilly, U.P.”

OBJECTIVES OF THE STUDY

- To assess the level of knowledge regarding cervical cancer and its prevention among adolescent girls at a selected school in Bareilly, Uttar Pradesh.
- To evaluate the effectiveness of a Structured Teaching Programme on knowledge regarding cervical cancer and its prevention among adolescent girls.
- To determine the association between pre-test knowledge scores regarding cervical cancer and its prevention and selected demographic variables among adolescent girls

HYPOTHESIS

H1: There will be a significant difference between pre-test and post-test knowledge scores regarding cervical cancer and its prevention among adolescent girls.

H2: There will be a significant association between pre-test knowledge and selected demographic variables among adolescent girls.

OPERATIONAL DEFINITION

1. **Effectiveness:** - It refers to the extent to which the structured teaching programme has achieved the desired effect in improving the knowledge of adolescent girls regarding Prevention of cervical cancer.
2. **Structured teaching Program:** - It refers to a systematically organized teaching programme prepared by the investigator on cervical cancer, etiology, clinical manifestation, risk factors, diagnostic tests and its prevention with the use of A.V. Aids to enhance girls awareness about cervical cancer and its prevention.
3. **Knowledge:** - In this study, knowledge refers to awareness of adolescent girls regarding prevention of cervical cancer.
4. **Cervical cancer:** - Refers to Cancer of cervix, which is a part of female reproductive system.
5. **Adolescent girls:** - In this study Adolescent girls refer to female students aged 10–19 years who are studying in the selected school and are willing to participate in the study.
6. **Prevention of cervical cancer:** It is a measure taken to reduce the incidence and to limit the progression of cervical cancer and provide intervention regarding cervical cancer.

CONCEPTUAL FRAMEWORK

The study was guided by the **Context–Input–Process–Product (CIPP) Model developed by Daniel L. Stufflebeam**. The adolescent girls and their demographic characteristics constituted the context; baseline knowledge and study resources represented the inputs; the Structured Teaching Programme (STP) constituted the process; and post-test knowledge regarding cervical cancer and its prevention represented the product. Comparison of pre-test and post-test knowledge scores provided feedback on the effectiveness of the Structured Teaching Programme

LITERATURE REVIEW

Review Of Literature Related to Level of Knowledge Regarding Cervical Cancer.

Joshi and Kalra (2025) conducted a cross-sectional study among 100 female patients aged 20 years and above attending the Gynaecology OPD at People Medical College Hospitals and Research Centre to assess awareness regarding cervical cancer. Data were collected using a pre-tested self-administered questionnaire. The findings revealed that most participants had poor awareness about Pap smear screening, cervical cancer risk factors, and HPV vaccination. The study concluded that targeted health education and awareness programmes are essential to improve knowledge, promote cervical cancer prevention, and encourage early detection through regular screening.⁵

2. Review of Literature Related to Prevalence of Cervical Cancer.

Wu J., et al. (2025) conducted a population-based analysis using GLOBOCAN 2022 data to assess the global burden of cervical cancer. The findings revealed that 662,044 new cases and 348,709 deaths occurred worldwide in 2022, with the highest burden observed in low- and middle-income countries, particularly India and China. India accounted for 19% of global cases and 23% of deaths. The study also found a higher incidence and mortality of cervical cancer in countries with a lower Human Development Index (HDI). The authors concluded that strengthening HPV vaccination, cervical cancer screening, and early treatment programmes is essential to reduce the global burden of cervical cancer and achieve the WHO elimination targets.⁶

3. Review Of Literature Related to Level of Knowledge Regarding Prevention of Cervical Cancer.

Das A., et al. (2025) conducted a cross-sectional study among 227 adolescent girls aged 14–19 years in Kolkata to assess their knowledge, attitude, and practices regarding cervical cancer prevention. Data were collected using a pre-designed questionnaire. The findings revealed that 91% of participants had inadequate knowledge, 47% had an unfavourable attitude, only 22% had undergone Pap smear/HPV testing, and 13% had received HPV vaccination. The study concluded that behaviour change communication and targeted health education programmes are essential to improve awareness, promote cervical cancer screening, and increase HPV vaccination coverage among adolescent girls.⁷

MATERIAL AND METHOD

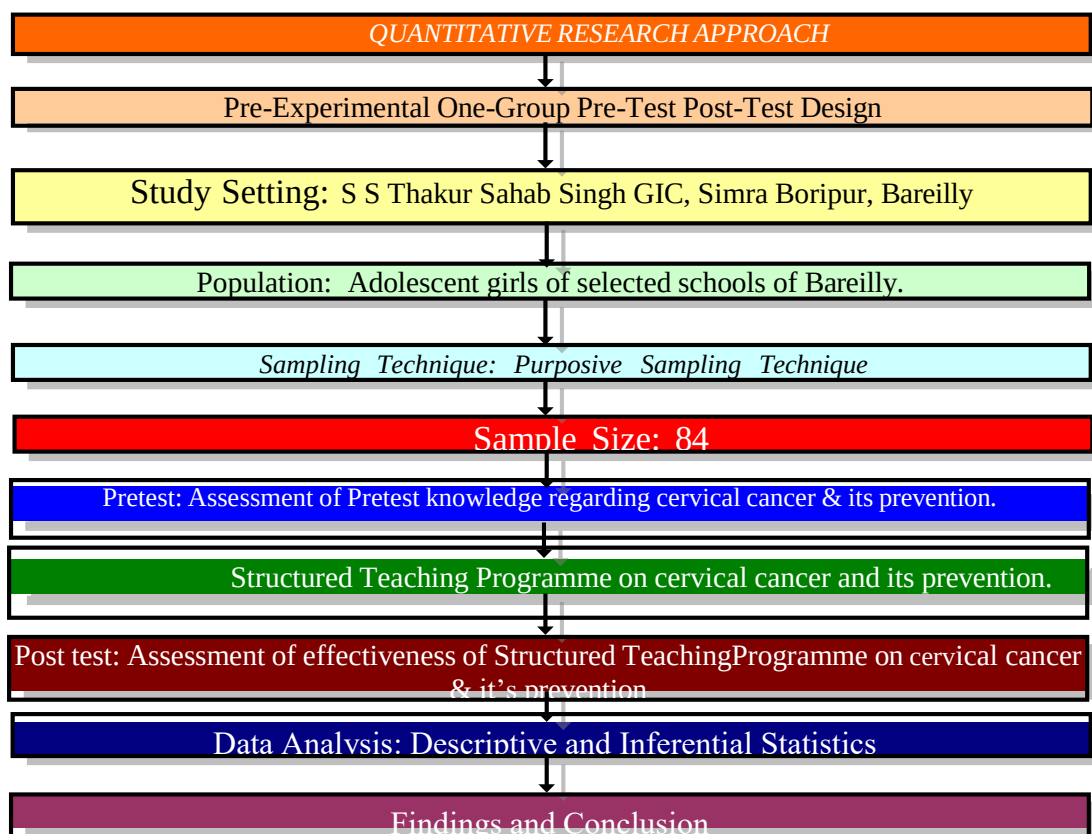


Fig 3.1: - Schematic Representation of the Research Methodology of the Study

RESEARCH DESIGN

In present study pre-experimental research design one group pre-test post-test design was used.

RESEARCH SETTING

The study was conducted in selected hospital od Bareilly. The hospital were:

- For pilot study: Lata Deep Inter College, Bareilly,
- For main study: S S Thakur Sahab Singh GIC Simra Boripur, Bareilly.

TARGET POPULATION

In present research study the target population consists of Adolescents Girls.

SAMPLE SIZE AND SAMPLING TECHNIQUE

The sample size is 84 sample and the technique is Purposive sampling technique is used in this study.

TOOL

A structured questionnaire was developed on the basis of objectives of the study. Tool was developed after extensive review of literature from various text books, journals, internet search and discussion and guidance from the experts in the field of Nursing, from the department of Obstetrics and Gynaecology.

DATA COLLECTION

Before the data collection, the researcher introduced herself, explained the purpose of the study to the Adolescent girls studying at S S Thakur Sahab Singh GIC Simra Boripur, Bareilly. Data collection was done using questionnaire method. In pretest the researcher administered structured questionnaire to each participant to assess the knowledge of Adolescent girls on Cervical Cancer. The subjects took 20-30 minutes to answer the questionnaire. After that a structured teaching programme was conducted on the same day approximately for 30 minutes. After that the researcher clarified many doubts asked by the participants regarding the study and also in general, according to the need of each participant. Then each participant was thanked and instructed to come on seventh day after the pretest. The researcher had given a reminder through phone on previous day. Post test was conducted after one week by using the same questionnaire to find out the effectiveness of teaching programme. The data collection process was terminated after thanking the participants for their co-operation. After completion of data collection, the questionnaires were coded and entered into the master data sheet for statistical analysis.

The data collection period was 4 weeks (1.05.2026 to 30.05.2026). Data was collected for 6 days in a week.

DATA ANALYSIS

The data obtained from the sample was analyzed by descriptive and inferential statistics.

RESULT

Section I: Distribution of sample characteristics according to demographic variables.

Table 1: Frequency And Percentage Distribution of Adolescent Girls According to Socio-Demographic Variables.

S No.	Demographic data	Frequency	Percentage (%)
1.	Age in years		
	a. 16 years	30	35.7
	b. 17 years	38	45.3
	c. 18 years	16	19
2	Educational status		
	a. Class XI	64	76.2
	b. Class XII	20	23.8
3	Stream of Adolescent girls		
	a. Science	28	33.3
	b. Arts	56	66.7
4.	Education of father		
	a. Profession or honors	0	0
	b. Graduate	3	3.6
	c. Intermediate or diploma	4	4.8
	d. High school certificate	22	26.2
	e. Middle school certificate	31	36.8
	f. Primary school certificate	22	26.2
	g. Illiterate	2	2.4
5.	Education of mother		
	a. Profession or honors	0	0
	b. Graduate	6	7.1
	c. Intermediate or diploma	0	0
	d. High school certificate	40	47.6
	e. Middle school certificate	24	28.6
	f. Primary school certificate	10	11.9
	g. Illiterate	4	4.8
6.	Monthly family income		
	a. ≥ 1, 23, 322	0	0
	b. 61, 663 – 1, 23, 321	0	0
	c. 46, 129 – 61, 662	5	6
	d. 30, 831–46, 128	31	36.9
	e. 18, 497 – 30, 830	37	44
	f. 6, 175 – 18, 496	11	13.1
	g. ≤ 6, 174	0	0
7.	Family history of cervical cancer		
	a. Yes	0	0
	b. No	84	100
8.	Previous knowledge		
	a. Yes	29	34.5
	b. No	55	65.5
	Source of previous knowledge		
	a. Mass media	12	41.4

9.	b. Family member	7	24.2
	c. Social media	5	17.2
	d. Others	5	17.2

Table reveals that:

- Maximum adolescent girls 38(45.3%) were in the age group of 17 yrs, 30(35.7%) in 16 yrs, and 16(19%) in the age group of 18 years.
- Maximum numbers of the adolescent girls were from XI standard 64(76.2%) and 20(23.8%) were from XII Standard.
- Maximum numbers of the adolescent girls were from arts stream 56(66.7%) and 28(33.3%) were from science stream.
- Maximum number of father in relation to educational status 31(36.8%) were Middle school passed, 22(26.2%) were primary school passed, 4(4.8%) were intermediate passed and 3(3.6%) were Graduated.
- Maximum number of Mother in relation to educational status 40(47.6%) were High school passed, 24(28.6%) were middle school passed, 10(11.9%) were primary school passed, 6(7.1%) were graduated and 4(4.8%) were Non literate.
- Maximum no. of adolescent girls 37(44%) belongs to monthly Family Income of 18,497-30,830, 31(36.9%) adolescent girls belongs to 30,831-46,128 monthly family income, 11(13.1%) belongs to 6,175-18,496 and 5(6%) belongs to 46,129-61,662 monthly family income.
- Maximum no. of adolescent girls 84(100%) were not having family history of cervical cancer.
- Majority of the adolescent girls 55 (65.5%) had no previous knowledge regarding cervical cancer, whereas only 29 (34.5%) had previous knowledge.
- Maximum no. of adolescent girls 12(41.4%) were having previous knowledge through mass media, 7(24.2%) were having previous knowledge through Family members, 5(17.2%) were having previous knowledge through Social media, and 5(17.2%) were having previous knowledge through others

Section II: Assessment of pre-test knowledge & post-test knowledge regarding cervical cancer and its prevention.

Table 2: Frequency and percentage distribution of pre -test and posttest level of knowledge of Adolescent girls.

N=84

Sl.no	Knowledge Level	Pre test		Post test	
		Frequency	Percentage	Frequency	Percentage
1	Inadequate knowledge	19	22.6%	8	9.5%
2	Moderately adequate knowledge	54	64.3%	41	48.8%
3	Adequate knowledge	11	13.1%	35	41.7%

Table 2 depicts the Frequency and percentage distribution of post - test level of knowledge of Adolescent girls regarding cervical cancer and its prevention. Results revealed that in post - test majority 41 (48.8%) of

participants had moderately adequate knowledge, 35 (41.7%) had adequate knowledge and 8 (9.5%) of participants had inadequate knowledge.

Section III: Comparison of pre-test and post-test knowledge scores to determine effectiveness of the Structured Teaching Programme.

Table 3: Mean, Median, Mode, Standard Deviation and Range of knowledge scores of subjects regarding regarding cervical cancer and its prevention among adolescent girls. N=84

Comparison of Knowledge Score	Mean	SD	Mean Difference	paired t-value	df	p-value
Pre-test	7.17	2.122	14.64	43.35	83	<0.001*
Post-test	21.81	1.787				

Table 3: depicts the effectiveness of the Structured Teaching Programme on knowledge regarding cervical cancer and its prevention among adolescent girls. The mean pre-test knowledge score was 7.17 ± 2.122 , whereas the mean post-test knowledge score was 21.81 ± 1.787 . The mean difference between the pre-test and post-test knowledge scores was 14.64. The effectiveness of the Structured Teaching Programme was assessed using the paired t-test. The obtained *t*-value ($t = 43.35$) with 83 degrees of freedom was found to be highly statistically significant ($p < 0.001$). Therefore, the Structured Teaching Programme was effective in improving the knowledge of adolescent girls regarding cervical cancer and its prevention. Hence, the research hypothesis (H_1) was accepted.

Section IV: Association between pre-test knowledge scores and selected demographic variables.

Table 4: Association Between pre-test knowledge scores of subjects and selected socio-demographic variables.

S. No.	Demographic variables	Pre - test level of knowledge			value	df	p value
		Inadequate	Moderate	Adequate			
1	Age in years						
	16 years	7	19	4	0.934	4	0.920 NS
	17 years	8	24	6			
	18 years	4	11	1			
2	Educational status						
	Class XI	10	43	11	9.603	2	0.008*
	Class XII	9	11	0			
3	Stream of Adolescent girls						
	Science	8	16	4	1.037	2	96N S
	Arts	11	38	7			
	Education of father						

4	Profession or honors	-- 0	-- 3	-- 0			
	Graduate	0	4	0			
	Intermediate or diploma	7	11	4			
	High school	8	19	4	7.388	10	88N S
	Middle school	4	15	3			
	Primary school	0	2	0			
	Illiterate						
5	Education of mother						
	Profession or honors	-- 1	-- 4	-- 1			
	Graduate	-- 11	-- 23	-- 6			
	Intermediate or diploma	4	19	1			
	High school	1	6	3	8.531	8	83N S
	Middle school	2	2	0			
	Primary school						
6	Monthly family income						
	≥ 1, 23, 322	--	--	--			
	61, 663 – 1, 23, 321	-- 1	-- 3	-- 1			
	46, 129 – 61, 662	5	20	6			
	30, 831–46, 128	8	25	4	6.081	6	14N S
	18, 497 – 30, 830	5	6	0			
	6, 175 – 18, 496	--	--				
7	Family history of cervical cancer						
	Yes	-- 19	-- 54	-- 9	NA	NA	NA
8	Previous knowledge of students regarding cervical cancer						
	Yes	6	32	10			
	No	13	22	1	10.29	2	0.005*

Table 4: reveals that there was association found between two variables, those were educational status and previous knowledge regarding cervical cancer . Hence H2 was accepted. Whereas in regards with remaining variables there was no association found.

DISCUSSION

The primary finding of the study was a 14.64-point increase in mean knowledge following the Structured Teaching Programme. The mean knowledge score increased from 7.17 ± 2.122 in the pre-test to 21.81 ± 1.787 in the post-test. The paired t-test demonstrated a statistically significant difference between the pre-test and post-test knowledge scores, $t(83) = 43.35$, $p < 0.001$, indicating that the Structured Teaching Programme was effective in improving knowledge regarding cervical cancer and its prevention among adolescent girls. H1 was therefore supported.

The pre-test findings showed that 54 (64.3%) adolescent girls had moderately adequate knowledge, 19 (22.6%) had inadequate knowledge and only 11 (13.1%) had adequate knowledge regarding cervical cancer and its prevention. These findings indicate that there was considerable scope for improving knowledge through a planned educational intervention.

Following administration of the Structured Teaching Programme, the proportion of participants with adequate knowledge increased to 35 (41.7%), while 41 (48.8%) had moderately adequate knowledge and only 8 (9.5%) had inadequate knowledge. The shift towards higher knowledge levels after the intervention supports the usefulness of structured school-based health education in improving awareness regarding cervical cancer and its prevention.

The association analysis showed that educational status and previous knowledge regarding cervical cancer were significantly associated with pre-test knowledge. Educational status was significantly associated with pre-test knowledge ($\chi^2 = 9.603$, $df = 2$, $p = 0.008$), and previous knowledge regarding cervical cancer was also significantly associated with pre-test knowledge ($\chi^2 = 10.29$, $df = 2$, $p = 0.005$). In contrast, age, stream of study, father's education, mother's education and monthly family income were not statistically significant. Thus, H2 was partially supported.

The finding regarding previous knowledge suggests that prior exposure to information about cervical cancer may be related to the level of baseline knowledge. In the present study, 55 (65.5%) adolescent girls reported having no previous knowledge regarding cervical cancer, while only 29 (34.5%) reported previous knowledge. Among those who had previous knowledge, mass media was the most frequently reported source of information.

The findings should, however, be interpreted in view of the study design. The pre-experimental one-group pre-test–post-test design does not include a control group; therefore, factors such as testing effects, maturation or exposure to other information cannot be completely excluded. Since the same knowledge questionnaire was administered during the pre-test and post-test, familiarity with the questions may also have contributed to the improvement in scores. The seven-day interval primarily demonstrates short-term improvement in knowledge and does not establish long-term retention or changes in preventive behaviour.

The study was conducted among 84 adolescent girls from a selected school in Bareilly using purposive sampling. Therefore, the findings may not be generalizable to adolescent girls from other schools, districts or populations. Despite these limitations, the substantial improvement in knowledge scores following the intervention provides evidence that the Structured Teaching Programme was associated with improved knowledge regarding cervical cancer and its prevention among the adolescent girls included in the study.

RECOMMENDATIONS

- Conduct the study with a control group and a larger sample.
- Include multiple schools to improve generalizability.
- Assess knowledge retention at one, three and six months.
- Compare STP with video-assisted or blended teaching methods.
- Assess preventive practices and HPV vaccination awareness in addition to knowledge.

SUMMARY

The primary aim of the present study is to evaluate the effectiveness of Structured teaching programme on the knowledge regarding cervical cancer and its prevention among adolescent girls and equip them with adequate knowledge to deal with the problem.

CONCLUSION

Based on the findings of the study, the following conclusions were drawn.

1. The overall pretest knowledge scores about cervical cancer was average.
2. Structured teaching programme was administered to the Adolescent girls.
3. Post test results showed the significant improvement in the level of knowledge regarding cervical cancer. Thus, it was concluded that the structured teaching programme was effective in improving the knowledge of Adolescent girls regarding cervical cancer and its prevention.

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