

EFFECT OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF CERVICAL CANCER AMONG ADOLESCENT SCHOOL-GOING GIRLS IN SELECTED SCHOOLS OF GREATER NOIDA

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Abstract : Introduction: It is estimated that more than 85% of cervical cancer cases can be prevented by a combination of HPV vaccination, cervical cancer screening and adopting a healthy lifestyle, but a majority of the adolescents in India do not possess awareness regarding any of the three preventive measures. Adolescence is an ideal stage to promote reproductive health. Objectives: To assess the pre-test knowledge of adolescent school girls regarding cervical cancer, and to evaluate the effectiveness of structured teaching programme (STP) on their knowledge. Methodology: Descriptive survey design with descriptive research technique was used. All selected schools of Greater Noida were included for sampling. Convenient sampling was used; 50 girls aged 14-16 years were studied. Data were collected through a demographic proforma and a knowledge questionnaire of 22 multiple choice questions (total marks 22) before the STP session and again 7 days after the session of 45-60 minutes. Mean, standard deviation, percentage, frequency, paired t-test and chi-square test were used for data analysis. Results: Poor, average, and good knowledge at baseline was observed in 26%, 38%, and 36% girls respectively. After the STP none of the girls was in the poor category, 10% were in average, and 90% in good category. The mean knowledge score increased from 11.72 (SD 5.35) to 18.34 (SD 2.72), a gain of 6.62 ($t = 7.869$, $df = 49$, $p < 0.001$). No association of post-test knowledge was found with any demographic variable ($p > 0.05$). Conclusions: The STP increased girls' short-term knowledge of cervical cancer prevention. School and community health nurses can employ similar programmes to promote HPV vaccination and screening. Further research in larger samples of schools with comparison groups and follow-up is needed.

IndexTerms - Cervical cancer, structured teaching programme, adolescent girls, HPV vaccination, knowledge, nurses teaching education.

INTRODUCTION

With cervical cancer being one of the cancers most frequently diagnosed in women worldwide, this type of cancer is also a leading cause of cancer morbidity and mortality in LMIC such as India. Starting in the uterus, opening, usually a long-standing an infection with an oncogenic subtype of HPV, cervical cancer is preventable through immunization, a screening test and life style and a life style change. With the objective of eliminating cervical cancer as a public health concern, WHO has defined the "90-70-90" targets. Regardless, awareness of the disease's preventability remains limited. In a study done with adolescent girls in Delhi, India and in Nigeria less than 50% heard about cervical cancer and less about HPV. Low health literacy, taboos around reproductive health and other obstacles to receiving health education, coupled with delayed hospital presentations, mean many women present only once the cancer is at an advanced stage.

Adolescents are group of population having health positive attitudes and behaviours and positive habit related to health and school girls were selected in this age group are mature enough to understand and implement the message of prevention for health. In some countries classroom teaching has raised awareness of HPV and cervical cancer. There is a lack of information regarding the effect of an organized educational programme in this regard for the school girls of greater noida region. To assess the level of knowledge on cervical cancer prevention in adolescent girls and to evaluate the effectiveness of STP.

OBJECTIVES

1. To determine the level of knowledge regarding prevention of cancer of the cervix in adolescent school girls.
2. To find out knowledge about the precautionary measures such as HPV vaccine, personal hygiene, and regular health check up.

3. To calculate the association of knowledge level with the selected demographic variable.
4. To determine the effectiveness of structured teaching programme on knowledge regarding prevention of cervical cancer.

HYPOTHESES

H1: Level of knowledge is significantly associated with selected demographic factors. H2: Adolescent girls have poor knowledge on cervical cancer at baseline.

H3: Knowledge after STP is significantly higher.

RESEARCH METHODOLOGY

Research Approach and Design

Research Design: A descriptive method of research was used which describes a situation as it exists without any manipulation of the variables. A descriptive survey design was used in that a questionnaire was used to access knowledge pre and post – how much knowledge does the staff have and how did it change. A control group was not used. The model used for the conceptual framework is CIPP of Stufflebean.

Setting and Population

The study was conducted in some selected schools of Greater Noida, Uttar Pradesh. The study population was girls of 14-16 years of age studying in the secondary/senior secondary schools of Greater Noida, and the accessible population was girls who were present at the time of data collection and willing to participate in the study.

Sample and Sampling Technique

This study was conducted among fifty girls by using non-probability convenience sampling. Sample size was fixed after reviewing similar kinds of studies, and for feasibility in terms of time and manpower. Girls who aged 14-16 years, available on the day of data collection, willing to participate in the study (assent was taken from them and also from their parents/ guardians if require, before data collection), and be able to read Hindi & English language were included in the study. Girls were who were formal instructed on cervical cancer earlier, absence in Pre-test and Post-test, unwilling to participate, and falling seriously ill were excluded.

Data Collection Tool

It comprised of the following sections: part I- demographic data (age, class, religion, parent's education, type of family, area of residence, previous knowledge, source of information, and awareness programme attended).

Part II- researcher-made knowledge questionnaire (22 multiple choice questions to assess awareness regarding the meaning of cervical cancer, risk factors, effect of HPV infection, warning signs, screening tests (Pap smears, VIA, colposcopy, etc), preventive practices, and management of cervical cancer: one mark was assigned for each correct response and no mark for an incorrect response, scores ranged from 0 to 22. Scores of 0-7 were considered as poor, 8-14 average and 15-22 good levels of knowledge).

The instrument was assessed by 7 experts (Obstetrics and gynaecology nurse-matron, lecturer in obstetrics and gynaecology nursing and research assistant) for content validity (CVI = [value]). Internal consistency was calculated via KR-20 formula (KR-20 = [value]). 10 girls from a non-study school were asked to pilot the tool and the format was clear and feasible.

Structured Teaching Programme

STP was based on published literature, standard nursing and gynaecology textbooks, and guidelines from WHO, ICMR and National Cancer Control Programme. It was validated by subject experts and came up with the following contents: 1) female reproductive system, 2) what is cervical cancer, 3) prevalence of cervical cancer in India and worldwide, 4) causes and risk factors including HPV, 5) symptoms and complications.

Data Collection Procedure

Permission from school heads was obtained in written form and ethical clearance from Institutional Ethics Committee, Sharda School of Nursing Science and Research, No. Ref. No: 8803.

The investigator introduced herself to all the students of the class on the first day of study, discussed the purpose and objectives of the study, confirmed anonymity and confidentiality, collected baseline data using pre-test (each for 30min), then imparted the teaching programme ending with question and answer session.

After 7 days same questionnaire was administered for post test and the two scores were compared.

Data Analysis

Data were coded and analysed using SPSS. Descriptive statistics for the sample and scores were the frequency, percentage, mean and standard deviation. Paired t-test compared the pre-test and post-test means and chi-square tested the association between the knowledge scores and the demographic variables. Significant difference between two groups is $p < 0.05$.

Ethical Considerations

It was an opt-in and girls could leave the course at any time without stigma. The questionnaires were anonymous, and data were only used for this study. The teaching was available to all students.

RESULTS

Demographic Characteristics

Age of largest group was 14 years (44%) 28% was in eighth standard 54% was from rural and 42% had nuclear family. Nearly half (52%) of them didn't have any knowledge about cervical cancer previously and have never attended an awareness programme (Table 1).

Table 1: Demographic characteristics of the participants (N = 50).

Variable	Category	f	%
Age (years)	14	22	44
	15	13	26
	16	15	30
Class	8th	14	28
	9th	9	18
	10th	10	20
	11th	10	20
	12th	7	14
Area of residence	Urban	23	46
	Rural	27	54
Type of family	Nuclear	21	42
	Joint	14	28
	Extended	15	30
Mother's education	Illiterate	15	30
	Graduate and above	10	20
Previous knowledge of cervical cancer	Yes	24	48
	No	26	52
Attended awareness programme	Yes	24	48
	No	26	52

Religion, father's education, and source of information were also recorded and tested (Table 4).

Knowledge Before and After the STP

Before the STP, 13 girls (26%) had poor, 19 (38%) average, and 18 (36%) good knowledge; since 64% were in the poor or average range, H2 was accepted. After the STP, none had poor knowledge, 5 (10%) had average, and 45 (90%) had good knowledge (Table 2, Fig. 1).

Table 2: Pre-test and post-test knowledge levels (N = 50).

Level of knowledge	Score range	Pre-test f (%)	Post-test f (%)
Poor	0–7	13 (26)	0 (0)
Average	8–14	19 (38)	5 (10)
Good	15–22	18 (36)	45 (90)

Effect of the STP on Knowledge Scores

The mean score increased from 11.72 (53.3%) to 18.34 (83.4%), an average increase of 6.62 marks. The paired t-test proved this to be significant ($p < 0.001$, Table 3) and the null hypothesis was rejected and H3 accepted.

Table 3: Mean, SD, and paired t-test of pre-test and post-test knowledge scores (N = 50).

Test	Mean	SD	Mean %	Mean difference (SD)	df	t-value	p-value
Pre-test	11.72	5.35	53.3	6.62 (5.95)	49	7.869	< 0.001
Post-test	18.34	2.72	83.4				

Association with Demographic Variables

None of the demographic variables was significantly associated with post-test knowledge ($p > 0.05$ in all tests; Table 4), so H1 was not supported.

Table 4: Association of post-test knowledge with demographic variables (chi-square test).

Variable	χ^2	df	p-value	Result
Age	3.383	2	0.184	NS
Class	2.504	4	0.644	NS
Religion	1.685	4	0.793	NS
Mother's education	1.019	4	0.907	NS
Father's education	4.113	3	0.250	NS
Type of family	2.381	2	0.304	NS
Area of residence	0.000	1	1.000	NS
Previous knowledge	0.000	1	1.000	NS
Source of information	9.568	5	0.088	NS
Attended awareness programme	1.077	1	0.299	NS

NS = not significant at $p < 0.05$.

DISCUSSION

The pre-teaching mean was 11.72 (53.3%) (some girls scored much worse), and post-teaching the STP raised girls' scores significantly. The baseline mean of 11.72 (53.3%) is near the mean of 11.18 for junior college students in Bangalore, and the general trend of poor knowledge of cervical cancer prevention has also been reported among girls and mothers in Delhi and among Nigerian secondary-school girls.

The 6.62 marks ($t = 7.869$, $p < 0.001$) enhancement is comparable to previous school-based programs. A well-defined curriculum from Bangalore led to a substantial increase in scores, HPV classroom lessons from Saudi Arabia dispelled misconceptions and raised awareness of HPV, while peer learning programs in Nigerian school improved knowledge and awareness of cervical cancer and HPV. School lessons can also influence the knowledge of the parent through their own daughter and a supported learning strategy in Taiwan improved knowledge and likelihood to receive the vaccination.

Post-test knowledge did not vary by demographic characteristics. Some previous studies did report relationships to education or residence. As for the low number of post-test knowledge scores that fell into the lowest category in the table, education and residence was similar in that all girls took the same training, which could have eliminated some between-group differences. And there were only 50 girls, so many chi-square cells had expected counts of less than five, potentially hiding some small associations. These findings underscore the role of school health nurses to provide formal, age appropriate education through programs alongside HPV vaccination and screening.

LIMITATIONS

- The sample ($n = 50$) was small and opportunistically selected from a limited number of schools, limiting the generalisability of the findings.
- No control group so the gain cannot be ascribed to the STP.
- The post-test was conducted just 7 days later, so long term retention is unknown.
- Some of the chi-squares had expected counts less than 5, it would be better to combine classes or use a Fishers exact test in future work.

RECOMMENDATIONS

- Health education including information on HPV vaccination to prevent cervical cancer should be part of the health curriculum in schools.
- Nursing students might be given teaching on ways to organize and perform health teaching in schools and the wider community.
- Future studies could include more schools, a bigger sample, control groups, and a 4–6 week or longer follow-up.
- These sorts of programme can also be piloted with boys, parents and out-of-school adolescents.

CONCLUSION

Before the intervention, adolescent girls in the schools knew very little about cervical cancer prevention. There was a notable and statistically significant gain in knowledge, after the structured teaching programme, regardless of demographic profile. Because this study did not include a control group and had a relatively short follow-up period, these results should only be viewed as preliminary indicators of short-term success. Nevertheless, they clearly demonstrate the potential and viability of school-based structured teaching programs conducted by nurses.

DECLARATIONS

Conflict of interest: none declared.

Authors' Contribution: K.G. and P. designed the study, collected the data, and prepared the manuscript. S.K. examined and supervised the study. All authors read and approved the final manuscript.

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