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Research Article

Knowledge of Adolescent Girls Regarding Prevention of Cervical Cancer: Impact of an Awareness Program (J&K, India)

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I N F O

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A B S T R A C T

Background: Cervical cancer is the abnormal growth of cervical cells and the fourth most common cancer among women worldwide, with 90% of deaths occurring in low- and middle-income countries. It is preventable through HPV vaccination, screening, and treatment. Adolescent girls, a vital part of the future workforce, should be well-informed about their health. This study aimed to assess their knowledge of cervical cancer prevention to facilitate awareness programs.

Methodology: A pre-experimental one-group pre-test, post-test design was used to assess the knowledge of 100 adolescent girls at Girls Higher Secondary School, Soura, using a self-structured questionnaire and convenient sampling. Knowledge levels were categorized as inadequate (<33%), moderately adequate (34-66%), and adequate (>66%).

Results: In the pre-test, 71% had inadequate knowledge, 28% had moderately adequate knowledge, and none had adequate knowledge. Post-test results showed 86% had adequate knowledge, 14% had moderately adequate knowledge, and none had inadequate knowledge.

Conclusion: The study found adolescent girls initially lacked knowledge of cervical cancer prevention, likely due to limited exposure and education. Post-test results demonstrated the effectiveness of the intervention in improving awareness.

Keywords: Knowledge, Cervical cancer, Awareness program, Adolescent girls, HPV Vaccination

Introduction

Healthy and well-nourished adolescents reflect the country's potential human resources, among which adolescent girls form a major stratum. The country's future greatly depends on them. The health and well-being of the youth is of major concern because they are the backbone of the country.[1] Adolescent girls who become women, portray as the cornerstone of overall health for family, community and the whole nation. Therefore, investing in their health and ensuring their access to quality care goes a long way in securing the wellbeing and future of the society. The imperative tools to protect women of the torment and suffering from the preventable diseases and eliminating these completely are available. Cervical cancer is one of such preventable diseases which can be eliminated and hence, women can see a world full of joy and happiness.[2]

Cervix is the lower cylindrical part of the uterus which is about 3.5 cm long.[3] It protrudes from the uterus and opens through a canal into the vagina. The main function of cervix is allowing the movement of menstrual blood from the uterus into the vagina and mediating the sperms into the uterus during sexual intercourse. There are two types of cells in the cervical cell lining: squamous (flat) cell and the columnar cells.[1] When abnormal growth or proliferation of the cervical cell starts, it is called cervical cancer. Cervical cancer occurs in the cells of the cervix. It can affect deep tissues of the cervix and if left unattended may spread to other parts of the body, often the lungs, liver, bladder, vagina and rectum.[4]

Worldwide, cervical cancer is the fourth most frequent cancer among women with estimated 604,000 new cases in 2020. Of the estimated 342,000 deaths from cervical cancer in 2020, about 90% of these occur in low and middle-income countries. Women living with HIV are 6 times more likely to develop cervical cancer compared to women without HIV. Throughout the world, the association of HIV with cervical cancer disproportionately affects younger women.[5]

In 2020, over 120,000 cases of cervical cancer were reported in India, resulting in more than 77,000 deaths. Human papilloma virus (HPV) has been identified as a cause of cervical cancer. Over 90% of cervical cancer cases occur due to high-risk HPV types. While most low-grade infections resolve spontaneously within two years, persistent infections lead to development of cervical cancer. In early stages, cervical cancer can be completely asymptomatic. Hence, making it obscure that when a woman will develop pre-invasive or invasive cervical cancer. Also, a woman could be harboring cervical cancer for several years only to discover it at an advanced stage.[2]

Need for the Study

Cervical cancer is one of the most common cancers among women in the developed as well as developing countries. It progresses gradually in the body and may remain undetected for a longer period of time. India has the greatest load of cervical cancer patients among other cancers. One in five women is diagnosed with cervical cancer in India.[6]

Statistical data of cervical cancer deaths show that developing countries bear a significant burden, with India accounting for one-third of the global burden. Sexually transmitted HPV mainly 16 and 18 are key causative agents of cervical cancer, with an age-standardized incidence rate of 21.99 per 100,000 in India.[7] Jammu and Kashmir ranked 32nd over a period of three decades for age-standardized cervical cancer incidence and mortality.[8]

Cervical cancer is one of the most successfully treatable forms of cancer if detected at an early stage. Even at advanced stages it can be controlled with appropriate treatment and palliative care. With a comprehensive approach to prevention, screening and treatment, cervical cancer can be eliminated as a public health problem within a few generations.[9]

Honawad, Kamala, Natekar[1] (2021) conducted a pre-experimental study at selected colleges in Bagalkot, Karnataka, India, on 50 adolescent girls using a simple random sampling technique to assess the effectiveness of planned teaching program on knowledge regarding prevention of cervical cancer and awareness of human papillomavirus vaccination. Data were obtained with the help of close ended structured questionnaire. The results of the study revealed that the calculated "t" value (22.92) was much higher than table "t" value (1.96) for df=49 at the 0.05 level of significance. The planned teaching program was successful in improving the knowledge of adolescent girls regarding cervical cancer and human papillomavirus vaccination.

Prakasam and Choudhary[10] (2019) conducted a pre-experimental study at college of nursing, Bathinda, Punjab, India, on 150 girls (17-24 years) using a convenient sampling technique to assess the effectiveness of planned teaching programme on knowledge and attitude regarding prophylactic vaccine for preventing cervical cancer. The mean pretest knowledge score was 14.41±3.259, whereas the posttest knowledge score was 28.81±2.946. The mean pretest attitude score 50.26±9.509, whereas the posttest attitude score was 74.97±7.726. The study concluded that there was progressive increase in the knowledge level

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and attitude of nursing students regarding prophylactic vaccination for cervical cancer after implementation of teaching programme.

Women are unable to access the services provided by the government due to a lack of awareness regarding the causes, symptoms, diagnosis, complications and prevention of cervical cancer. Hence, there is an increasing burden of cervical cancer. Therefore, the investigator conducted the present study to assess the effectiveness of awareness program on knowledge of adolescent girls regarding prevention of cervical cancer.

Methodology

A Pre experimental One Group Pre-test, Post-test research design was used to assess the knowledge of 100 adolescent girls of 9th-12th standard using convenient sampling technique at Girls Higher Secondary School, Soura by using self-structured questionnaire. After establishing validity and reliability (r=0.82) of the tool, pre-test was conducted on day 1st and on the same day, structured teaching program was given. Post-test was conducted on 7th day. Assessment of knowledge score was categorized into 03 levels based on the criteria developed by Baria, Patel, Solanki[11] (2019)

Table 1.Scoring Criteria for Knowledge

Maximum score = 37. Minimum Score = 0.

Knowledge score	Percentage	Level of Knowledge.
0-12	≤33%	Inadequate
13-24	34 - 66%	Moderately adequate
25-37	>66 %	Adequate

Results and Discussion

Out of 100 study subjects, maximum (69%) was in the age group of 16-17 years, 27% were in age group of 14-15 years and only 4% were in age group of 18-19 years. Higher number (44%) of the study subjects were from class 10th, 28% from class 11th, 22% from class 9th and only 6% were from class 12th. Maximum of the study subjects (61%) belonged to nuclear families whereas 39% belonged to joint families. Maximum number (71%) of study subjects belonged to urban area whereas only 29% belonged to rural area. Maximum number (60%) of the study subjects had educational status of mother as primary-middle, 32% as illiterate, 8% as higher-secondary whereas none of them had educational status of mother as graduation or above. 84% of the study subjects had occupation of mother as homemaker, 10% as government employee, 6% as any other whereas none of them had occupation of mother as private employee. Higher number (48%) of the study subjects had educational status of father as higher-secondary, 22% as primary-middle, 17% as illiterate whereas only 13% as graduation or above. Higher number (37%) of study subjects had occupation of father as businessman, 25% as private employee, 22% as any other whereas only 16% as government employee. More than half (54%) of the study subjects had their monthly family income between Rs 21,000-Rs 30,000, 22% had ≤Rs 20,000, 14% had Rs 41,000 or above whereas only 10% had income between Rs 31,000-Rs 40,000. Also, majority (86%) of the study subjects had no previous information regarding prevention of cervical cancer whereas only 14% had information regarding prevention of cervical cancer, from the source social media. (Table 2)

These findings were similar to the results of the studies conducted by Prasad and Anjna[12] (2021), Amorha, Ozota, Ndunwere, Anyaji, Egbo, Ogugofor[13] (2024), and Aktar, Akter, Akhter, Begum, Akhtar, Islam, et.al[14] (2022)

On pre-test, maximum number of the study subjects (71%) had inadequate knowledge, 29% had moderately adequate knowledge whereas none of the study subjects had adequate knowledge regarding prevention of cervical cancer. On post-test, majority of the study subjects (86%) had adequate knowledge, 14% had moderately adequate knowledge whereas none of the study subjects had inadequate knowledge regarding prevention of cervical cancer (Table 3, Figure 1).

The findings of present study were consistent with a pre-experimental study conducted by Lalita, Thakur, Chaudhary[15] (2023)

Table 2.Frequency and percentage distribution of study subjects according to demographic variables

N=100

Demographic Variables	Category	Frequency (f)	Percentage (%)
Age (in years)	14-15	27	27.0
	16-17	69	69.0
	18-19	4	4.0
Class in which studying	9th	22	22.0
	10th	44	44.0
	11th	28	28.0
	12th	6	6.0
Residence	Rural	29	29.0
	Urban	71	71.0
Type of family	Nuclear	61	61.0
	Joint	39	39.0

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Educational status of mother	Illiterate	32	32.0
	Primary-middle	60	60.0
	Higher-secondary	8	8.0
	Graduation or above	---	---
Occupation of mother	Homemaker	84	84.0
	Private employee	---	---
	Government employee	10	10.0
	Any other	6	6.0
Educational status of father	Illiterate	17	17.0
	Primary-middle	22	22.0
	Higher-secondary	48	48.0
	Graduation or above	13	13.0
Occupation of father	Government employee	16	16.0
	Private employee	25	25.0
	Businessman	37	37.0
	Any other	22	22.0
Monthly family income	≤Rs 20,000	22	22.0
	Rs 21,000-Rs 30,000	54	54.0
	Rs 31,000-Rs 40,000	10	10.0
	Rs 41,000 or above	14	14.0
Any previous source of information, if yes specify the source	No	86	86.0
	Social media	14	14.0

Table 3.Frequency and percentage distribution of study subjects according to their Pre-test and Post-test knowledge scores regarding prevention of cervical cancer

N=100

Levels of knowledge	Know-ledge Scores of Study subjects	Pre-Test		Post-Test	
		Freq-uency (f)	Per-centage (%)	Freq-uency (f)	Per-centage (%)
Inadequate	0-12	71	71.0	0	0
Moderately adequate	13-24	29	29.0	14	14.0
Adequate	24-37	0	0	86	86.0

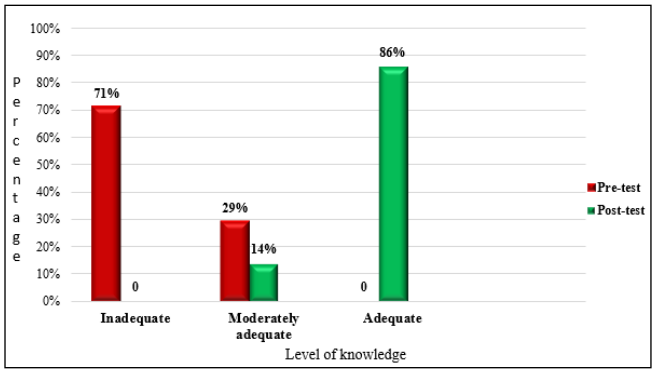

Figure 1.Bar diagram showing percentage distribution of the study subjects according to their pretest and post-test knowledge scores regarding prevention of cervical cancer

The mean post-test knowledge scores of the study subjects regarding prevention of cervical cancer was significantly higher (26.56±3.76) than that of mean pre-test knowledge scores (10.89±3.32) and the t-test calculated value (31.10) was significantly higher than that of tabulated value at 0.05 level of significance (df=99) which indicated that the awareness program was effective in increasing the knowledge of study subjects regarding prevention of cervical cancer (Table 4).

The findings were supported by a pre-experimental study conducted by Kumari, Kumari, Sanya, Kujur[16] (2022)

There was non significant association of the pre-test knowledge scores of study subjects regarding prevention of cervical cancer with their selected demographic variables at p-value=<0.05 except with the demographic variable, any previous source of information (p-value=<0.05) (Table 5). The findings of the present study were supported by a study conducted by Prakasam and Choudhary[10] (2019)

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Table 4.Comparison between pre-test and post-test knowledge scores of study subjects regarding prevention of cervical cancer

N=100

Knowledge score	Mean±SD	Mean Difference	t-value	p-value
Pre-test	10.89±3.32	15.67	31.10	0.001**
Post-test	26.56±3.76			

**= Significant at 0.01 level

Table 5.Association of pre-test knowledge scores of study subjects regarding prevention of cervical cancer with their selected demographic variables

N=100

Demographic variables	Category	Pre-test knowledge scores						Association		
		Inadequate knowledge		Moderately Adequate knowledge		Adequate knowledge		Chi test	df	p value/ Remarks
		f	%	f	%	F	%			
Age (in years)	14-15	20	74.07	7	25.92	--	--	0.98	2	0.61 NS
	16-17	49	71.01	20	28.98	--	--			
	18-19	2	50	2	50	--	--			
Class in which studying	9th	17	77.27	5	22.72	--	--	5.87	3	0.11 NS
	10th	35	79.54	9	20.45	--	--			
	11th	16	57.14	12	42.85	--	--			
	12th	3	50	3	50	--	--			
Residence	Rural	19	65.51	10	34.48	--	--	0.59	1	0.44 NS
	Urban	52	73.23	19	26.76	--	--			
Type of family	Nuclear	45	73.77	16	26.22	--	--	0.58	1	0.44 NS
	Joint	26	66.66	13	33.33	--	--			
Educational status of mother	Illiterate	26	81.25	6	18.75	--	--	2.46	2	0.29 NS
	Primary-middle	40	66.66	20	33.33	--	--			
	Higher-secondary	5	62.5	3	37.5	--	--			
	Graduation or above	--	--	--	--	--	--			
Occupation of mother	Homemaker	60	71.42	24	28.57	--	--	0.67	2	0.96 NS
	Private employee	7	70	3	30	--	--			
	Government employee	--	--	--	--	--	--			
	Any other	4	66.66	2	33.33	--	--			
Educational status of father	Illiterate	14	82.35	3	17.64	--	--	4.01	3	0.25 NS
	Primary-middle	18	81.81	4	18.18	--	--			
	Higher-secondary	30	62.5	18	37.5	--	--			
	Graduation or above	9	69.23	4	30.76	--	--			

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Occupation of father	Government employee	14	87.5	2	12.5	--	--	4.03	3	0.29 NS
	Private employee	19	76	06	24	--	--			
	Businessman	24	64.86	13	35.13	--	--			
	Any other	14	63.63	8	36.36	--	--			
Monthly family income	<RS 20,000	9	40.90	13	59.09	--	--	6.86	3	0.22 NS
	Rs 20,0000- Rs 30,000	41	75.92	13	24.07	--	--			
	Rs 31,000-Rs 40,000	7	70	3	30	--	--			
	>Rs 41,000	13	92.85	1	7.14	--	--			
Any previous source of information, if yes, specify the source	No	66	76.74	20	23.25	--	--	9.84	1	0.002** S
	Social media	10	71.42	4	28.57	--	--			

NS= Non-significant S= Significant

Conclusion

On pre-test, maximum of the study subjects had inadequate knowledge and none of the study subjects had adequate knowledge regarding prevention of cervical cancer which may be due to lack of exposure and education. On post-test, all the study subjects had adequate knowledge after implementation of awareness program which showed that the awareness program was effective in improving the knowledge of study subjects . Also, any previous source of information affected the knowledge level of study subjects by sensitizing them regarding prevention of cervical cancer

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Conflicts of Interest: None

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