Effectiveness Of Information Education Communication (IEC) Approach On Knowledge Regarding Human Papilloma Virus (HPV) Vaccination Among Adolescent Girls

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***Abstract*- Background of the study:** Worldwide, cervical cancer is the fourth most frequent cancer in women. Cervical cancer kills one Indian woman every eight minutes, making the disease one of the country's most lethal cancers.[1]Seventy percentages of cervical cancers are known to be caused by Human papilloma virus (HPV) infection. One strategy to reduce the spread of HPV and thus prevent cervical cancer is to increase the number of individuals who get HPV vaccination.[2] Due to the prevalence of HPV, health professionals recommend getting the vaccine prior to sexually be active; hence the target group for HPV vaccination is adolescent girls. So it is imperative for adolescent girls to be aware about the Human papilloma virus (HPV) vaccination.[2] **Objectives:** The objective of the study was to assess the level of knowledge regarding Human papilloma virus (HPV) vaccination among adolescent girls, to evaluate the effectiveness of Information Education Communication (IEC) approach on knowledge regarding Human Papilloma Virus (HPV) vaccination among adolescent girls as measured by gain in post-test scores and to find out an association between pre-test knowledge scores of adolescent girls with their selected socio-demographic variables. **Methodology:** An evaluative study was conducted among 50 adolescent girls of KLES Prerana PU College, Hubballi. Non-probability, simple random sampling technique was used to select the sample. The data was collected using structured knowledge questionnaire. The research design used for the study was pre-experimental, one group pre-test post-test design. **Results:** The study results revealed that, majority of subjects in pre-test 40(80%) had average knowledge, 8 (16%) had good knowledge and 2(4%) had poor knowledge. Whereas in post-test after Information education communication approach, all the subjects 50 (100%) had good knowledge and none of them had average and poor knowledge regarding HPV vaccination. There was a significant gain in knowledge i.e 43.01% after administration of IEC approach. With regards to statistical association, there was an association between occupation of subject's father & occupation of subject's mother with their pre-test knowledge scores. **Conclusion:** The study concluded that the Information education communication approach was effective in terms of gain in knowledge scores of the subjects regarding Human papilloma virus vaccination.

***Index Terms*-** Cervical cancer, Human papilloma virus, Human papilloma virus vaccination, adolescent girls, knowledge, effectiveness, Information education communication approach.

I. INTRODUCTION

According to the statistics given by HPV information centre, cervical cancer is the 2nd most common cancer with an incidence rate of 14.9% cases in India. Annual numbers of cervical cancer cases are 96,922 and deaths are 60,078. According to this report new diagnosed cases of cervical cancer in Bangalore are 2,741 which is second highest followed by first highest in Mumbai with 2,924 new cases in India.[3] One strategy to reduce the spread of HPV, and thus prevent cervical cancer, is to increase the number of individuals who get HPV vaccination.[4] The Human Papilloma Virus vaccine targets the Human Papilloma Virus types that most commonly cause cervical cancer and can cause some cancers of the vulva, vagina, anus, and oropharynx. It also protects against the HPV types that cause most genital warts. The HPV vaccine is highly effective in preventing the targeted HPV types, as well as the most common health problems caused by them.[5]The suggested age for vaccination is between 11 and 12 years of age, catch-up vaccines are available through the age of 26 years.[1]

II. STATEMENT OF PROBLEM

"A study to evaluate the effectiveness of Information Education Communication (IEC) approach on knowledge regarding Human Papilloma Virus (HPV) vaccination among adolescent girls of selected PU College, Hubballi."

III. OBJECTIVES OF THE STUDY

1. To assess the level of knowledge regarding Human Papilloma Virus (HPV) vaccination among adolescent girls.
2. To evaluate the effectiveness of Information Education Communication (IEC) approach regarding Human Papilloma Virus (HPV) vaccination among adolescent girls as measured by gain in post-test scores.
3. To find out an association between pre-test knowledge scores of adolescent girls with their selected socio-demographic variables.

IV. HYPOTHESES

H_1: The mean post-test knowledge scores of adolescent girls who have been exposed to Information Education Communication (IEC) approach will be significantly higher than the mean pre-test knowledge scores at 0.05 level of significance.

H_2: There will be statistical association between pre-test knowledge scores of adolescent girls with their selected socio-demographic variables at 0.05 level of significance.

V. METHODOLOGY:

Research approach: In this study an evaluative approach was used.
Research design: In this study pre-experimental: one group pre-test, post-test design was adopted
Variables:
Independent Variable : Information education communication approach.
Dependent Variable : Knowledge regarding Human papilloma virus vaccination
Attribute Variables : Age, religion, course of the study, educational status of the mother, educational status of the father, type of family, occupation of father, occupation of mother, income of parents, area of residency, have undergone HPV vaccination and source of information regarding HPV vaccination.
Setting: KLES Prerana PU College, Vidyanagar, Hubballi.
Population: In the current research study, the population comprises adolescent girls.
Target Population: In the current research study, the target population comprises adolescent girls of Hubballi.
Sample Size: The sample size selected for the present study includes 50 adolescent girlsofPrerana PU college, Vidyanagar,Hubballi.
Sampling technique:
In the present study, the researcher selected samples through Probability**;** Simple random sampling technique.
Criteria for selection of samples:
The criteria for selection of samples in this study involve:
Inclusion Criteria:
Adolescent girls who:

- were present during the time of data collection
- were willing to participate in the study
- could read & write English

Exclusion Criteria:
Adolescent girls who:

- were sick during the time of data collection

VI. DESCRIPTION OF THE TOOL:

The tool consists of structured knowledge questionnaire and following were the sections

- **Section I:** Items on socio-demographic data of adolescent girls containing 12 variables that include age, religion, course of the study, educational status of the mother, educational status of the father, type of family, occupation of father, occupation of mother, income of parents, area of residency, have undergone HPV vaccination and source of information regarding HPV vaccination.
- **Section II:Items on knowledge questionnaire:** This section consists of 40 items for obtaining level of knowledge of adolescent girlsregardinghuman papilloma virus vaccination. A score value of one (1) was allotted for each correct response and zero (0) for each incorrect response. Total maximum score limit was 40.

✓ Part 01: 08Items on knowledge regarding anatomy and physiology of female reproductive system.
✓ Part 02: 14 Items on knowledge regarding cervical cancer.
✓ Part 03: 18 Items on knowledge regarding human papilloma virus and human papilloma virus vaccination.

VII. FINDINGS OF THE STUDY

Table No. 1: Frequency and percentage distribution of subjects according to socio-demographic variables. n=50

SL. No	Demographic Variable	Frequency (f)	Percentage (%)
01	**Age in Years**		
	a. 15-16	09	18
	b. 17-18	41	82
02	**Religion**		
	a. Hindu	46	92
	b. Muslim	04	08

	c. Christian	00	00	
	d. Others	00	00	
03	**Course of the study**			
	a. I Year PUC	24		48
	b. II Year PUC	26		52
04	**Education status of mother**			
	a. No formal education	03	06	
	b. Primary education	05	10	
	c. Secondary education	25	50	
	d. Pre university education	06	12	
	e. Graduate & above	11	22	
05	**Education status of father**			
	a. No formal education	01	02	
	b. Primary education	06	12	
	c. Secondary education	14	28	
	d. Pre university education	05	10	
	e. Graduate & above	24	48	
06	**Type of the family**			
	a. Joint	39	78	
	b. Nuclear	11	22	
	c. Extended	00	00	
07	**Occupation of father**			
	a. Daily wages worker	04	08	
	b. Private employee	11	22	
	c. Government employee	12	24	
	d. Self employee	23	46	
08	**Occupation of mother**			
	a. Daily wages worker	01	02	
	b. Private employee	02	04	
	c. Government employee	04	08	
	d. Housewife	43	86	
09	**Income of parents (in Rupees) per month**			
	a. Below 15000			
	b. 15000-30000	00	00	
	c. 30000 and above	14	28	
		36	72	
10	**Area of residency**			
	a. Rural	02	04	
	b. Urban	48	96	
11	**Have you undergone HPV vaccination**			
	a. Yes			
	b. No	00	00	
		50	100	
12	**Sources of information about HPV vaccination**			
	a. Print media	00	00	
	b. Electronic media	06	12	
	c. Health personnel	01	02	
	d. Peer group & social circle	00	00	
	e. No information	43	86	

Table No.1reveals that

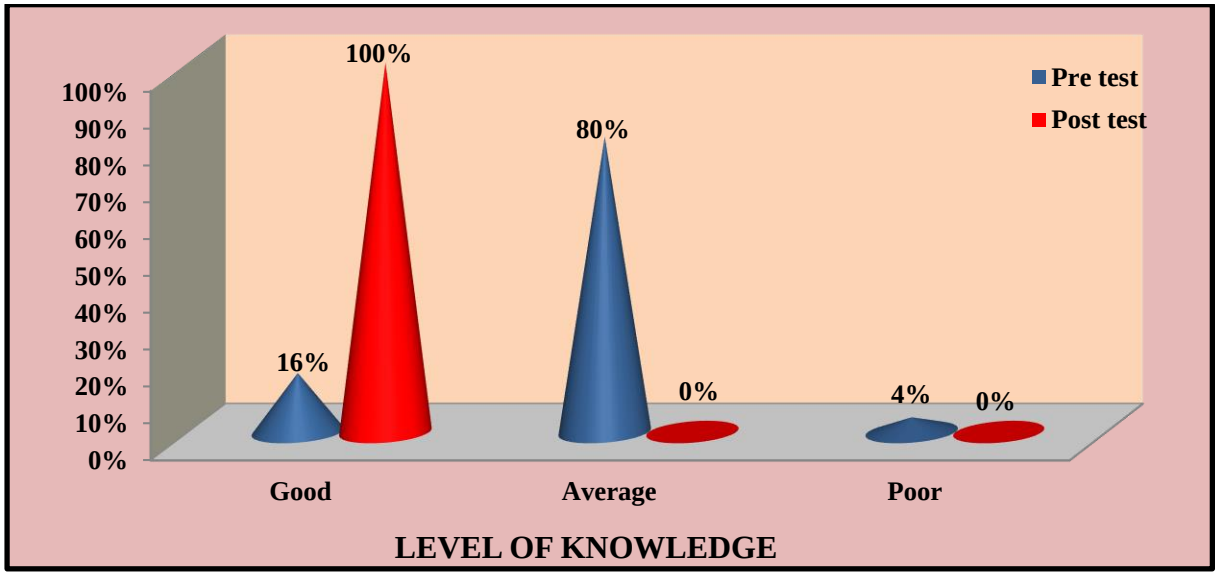
- Majority of the subjects 41 (82%) were in the age group of 17-18 years and 09 (18%) were in the age group of 15-16years.
- Majority of the subjects 46 (92%) were Hindu religion and 04 (08%) were Muslim, whereas no one belongs to Christian and Other religion.
- Majority of the adolescent girls 26 (52%) were from II Year PUC and 24 (48%) were from I Year PUC.

- Majority of the subject's mothers 25 (50%) had secondary education, 11(22%) hadgraduation & above, 06(12%) had pre university education, 5(10%) had primary education& 03 (6%) with no formal education.
- Majority of the subject's fathers 24 (48%) were with graduation & above education, 14 (28%) completed secondary education, 6 (12%) had primary education, 5 (10%) were having pre university education & 1 (2%) was having no formal education.
- With regard to type of family, majority of the subjects 39 (78%) belongs to joint family, 11 (22%) were belongs to nuclear family, whereas no one belongs to the extended family.
- With regards to occupation of subject's father 23 (46%) were self employee, 12 (24%) were government employee, 11 (22%) were private employee and 4 (8%) were daily wage workers.
- With regards to occupation of subject's mother, majority of mothers 43 (86%) were house wives, 4 (8%) were government employee, 2 (4%) were private employee and 1 (2%) was daily wage workers.
- With regards to income of subject's parents, 36 (72%) were having income of Rs.30,000& above per month, 14 (28%) were having Rs. 15,000 to 30,000 per month and no one were having income less than Rs. 15,000 per month.
- With regards to area of residency, majority of adolescent girls 48 (96%) were from urban area and 2 (4%) were from rural area.
- With regards to the information regarding whether the subjects have undergone HPV vaccination, none of the subjects had taken HPV vaccination.
- With regards to source of information about HPV vaccination, maximum subjects 43 (86%) were not having any information about HPV vaccination; whereas few 6 (12%) subjects were having some information about HPV vaccination through electronic media and one subject (2%) had information from health personnel.

Table No. 2: Frequency and percentage distribution of knowledge scores of subjects regarding Human papilloma virus vaccination.
n=50

Level of knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good (15.33)	08	16	50	100
Average (15.33-11.38)	40	80	00	00
Poor (11.38)	02	04	00	00

Table No. 2 reveals that,distribution of level of knowledge among adolescent girls regarding Human papilloma virus vaccination during pre-test and post-test. Most of them in the pre-test 40(80%) had average knowledge, 8 (16%) had good knowledge and 2(4%) had poor knowledge. In post-test after Information education communication approach, all the subjects 50 (100%) had good knowledge regarding HPV vaccination



Graph 1: The Cone graph represents percentage distribution of subjects according to their level of knowledge scores in pre-test and post-test.

Table no 3 :Mean, Median, Mode, Standard Deviation and Range of knowledge scores of subjects regarding Human papilloma virus vaccination.
n=50

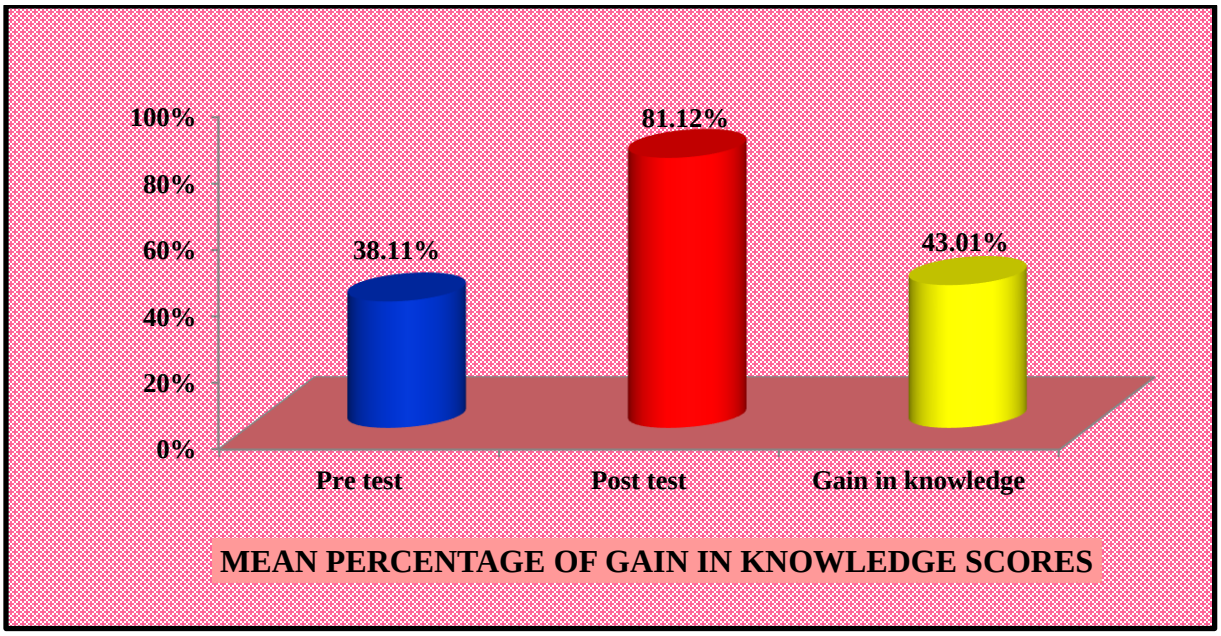
Area of analysis	Mean	Median	Mode	Standard deviation	Range
Pre-test	13.36	13	12.28	1.97	11
Post-test	32.04	32	31.92	1.27	8
Difference	18.68	19	19.64	0.7	3

Table No. 3reveals that, the mean pre-test knowledge score was 13.36, median 13, mode 12.28, standard deviation 1.97 and range 11.Whereas the meanpost-test, knowledge score was 32.04, median 32, mode 31.92, standard deviation 1.27 and range 8. The overall difference in mean knowledge score was 18.68, median 19, mode 19.64, standard deviation 0.7 and range 3.

Table No.4: Pre-test, post-test percentage of knowledge scores of subjects regarding Human papilloma virus vaccination.
n=50

Items	Total Score	Mean % of knowledge scores of subjects		
		Pre-test	Post-test	Gain in knowledge
Structured knowledge questionnaire	2000	38.11	81.12	43.01

Table No. 4: Reveals that there was 43.01% gain in knowledge after administration of Information education communication approach.



Graph 2: The Cylindrical Graph diagram represents the mean percentage of gain in knowledge scores of subjects according to their knowledge scores.

Table No. 5: Mean difference($\bar{d}$), Standard Error of difference (SE$\bar{d}$)and paired't' values of knowledge score of subjects regarding Human papilloma virus vaccination.

Mean Difference ($\bar{d}$)	Standard error of difference (SE$\bar{d}$)	Paired 't' values	
		Calculated	Tabulated
18.68	0.4057	46.04*	41.42

* Significant at 0.05 level of significance

Table No. 5: Reveals that the calculated paired 't' (t_{cal}= 46.04) was greater than the tabulated value (t_{tab}= 41.42). Hence, H_1 was accepted. This indicates that the gain in knowledge score was statistically significant at 0.05 level. Therefore, the Information education communication approach was effective in improving the knowledge of subjects.

Table No.6: Association Between pre-test knowledge scores of subjects and selected socio-demographic variables. n=50

SlNo	Demographic Variable	Good	Average	Poor	Chi Square		
					Cal	Tab	df
1)	**Age in Years**						
	a. 15-16	02	07	00	5.44	5.99	02
	b. 17-18	06	33	02			
2)	**Religion**						

	a. Hindu	08	36	02	1.08	12.59	06
	b. Muslim	00	04	00			
	c. Christian	00	00	00			
	d. Others	00	00	00			
3)	**Course of the study**						
	a. I Year PUC	04	20	00	1.919	5.99	02
	b. II Year PUC	04	20	02			
4)	**Education status of mother**						
	a. Non-formal	00	03	00	9.429	15.50	08
	b. Primary	00	05	00			
	c. Secondary	05	20	00			
	d. Pre university	01	05	00			
	e. Graduation & above	02	07	02			
5)	**Education status of father**						
	a. Non-formal	00	01	00	12.25	15.50	08
	b. Primary	00	06	00			
	c. Secondary	02	12	0			
	d. Pre university	02	03	00			
	e. Graduation & above	04	18	02			
6)	**Type of family**						
	a. Nuclear	07	31	01	1.34	9.48	04
	b. Joint	01	09	01			
	c. Extended	00	00	00			
7)	**Occupation of father**						
	a. Daily wage worker	00	04	00	14.31*	12.59	06
	b. Private employee	03	07	01			
	c. Government employee	00	11	01			
	d. Self employed	05	18	00			
8)	**Occupation of mother**						
	a. Daily wage worker	00	01	00	13.58*	12.59	06
	b. Private employee	01	01	00			
	c. Government employee						
	d. House wife	01	03	00			
		06	35	02			
9)	**Income of parents (In Rupees)**						
	a. Below 15000	00	00	00	1.077	9.48	04
	b. 15000-30000	02	12	00			
	c. 30000 & above	06	28	02			
10)	**Area of residency**						
	a. Rural	01	01	00	1.81	5.99	02
	b. Urban	07	39	02			

11)	**Have you undergone HPV vaccination**						
	a. Yes	00	00	00	00	5.99	02
	b. No	08	40	02			
12)	**Source of Information**						
	a. Print Media						
	b. Electronic media	00	00	00			
	c. Health personnel	01	05	00			
	d. Peer Group & Social circle	01	00	00	6.07	15.50	08
	e. No information	00	00	00			
		06	35	02			

Table No. 9 reveals that there was association found between two variables, those were occupation of subject's father & occupation of subject's mother. Hence $H_{2.7}$ & $H_{2.8}$ were accepted. Whereas in regards with remaining variables there was no association found, hence H_2 was rejected in these cases.

VIII. RECOMMENDATIONS:

Keeping in view the findings of the present study, the following recommendations were made:

1. A similar study can be undertaken for a larger and wider sample size, this would be more pertinent in making broad generalization.
2. A similar study can be undertaken among adolescent boys to assess the knowledge regarding Human papilloma virus vaccination.
3. A comparative study can be conducted between adolescent girls of Science and Commerce or Arts College on knowledge regarding Human papilloma virus vaccination.
4. A descriptive study can be conducted to assess the knowledge, attitude and practice regarding Human papilloma virus vaccination.
5. An experimental study can be conducted regarding effectiveness and side effects of Human papilloma virus vaccination among adolescent girls.
6. A similar study can be replicated in different settings.
7. A study can be conducted to determine the barriers of Human papilloma virus vaccination.
8. Awareness programme among adolescent girls can be conducted to build the public trust about HPV vaccination.

IX. CONCLUSION:

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

1. The overall pre-test knowledge scores of the subjects were average.
2. The post-test knowledge scores of the subjects after administration of the Information education communication approach were significantly higher than the pre-test knowledge scores.
3. Post-test knowledge scores after administration of Information education communication approach showed significantly improvement in the level of knowledge.
4. There was association found between two variables i.e occupation of father & occupation of mother, whereas in regards with remaining variables there was no association found.

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