

Effectiveness of Information Education Communication (IEC) Strategy on Knowledge Regarding Human Papilloma Virus (HPV) Vaccination Among Adolescent Girls

Ms. Sutar Shivani Shrikanth¹, Dr. Sunil M B²

¹Final Year Basic B.Sc. Nursing, KLES Institute of Nursing Sciences, Hubballi, Karnataka, India

²Professor & HOD, Dept. of Community Health Nursing, KLES Institute of Nursing Sciences, Hubballi, Karnataka, India

Corresponding Author: Ms. Sutar Shivani Shrikanth

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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 30 adolescent girls of P C Jabin PU Science College, Hubballi. 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 24(80%) had average knowledge, 5 (16%) had good knowledge and 1(4%) had poor knowledge. Whereas in post-test after Information education communication approach, all the subjects 30 (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.

Key words: Cervical cancer, Human papilloma virus, Human papilloma virus vaccination, adolescent girls, knowledge, effectiveness, Information education communication approach.

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

STATEMENT OF PROBLEM:

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

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.

HYPOTHESES:

H₁: 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.

H₂: 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.

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: P C Jabin PU Science College, 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 30 adolescent girls of P C Jabin PU Science college, 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

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 girls regarding human 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: 08 Items 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.

FINDINGS OF THE STUDY

Table No. 1: Frequency and percentage distribution of subjects according to socio-demographic variables. n=30

SL. No	Demographic Variable	Frequency (f)	Percentage (%)
01	Age in Years		
	15-16	05	18
	17-18	25	82
02	Religion		
	Hindu	28	92
	Muslim	02	08
	Christian	00	00
03	Course of the study		
	I Year PUC	14	48
	II Year PUC	16	52
	Educational status of mother		
04	No formal education	02	06
	Primary education	03	11
	Secondary education	15	50
	Pre university education	03	11
	Graduate & above	07	22
05	Educational status of father		
	No formal education	01	02
	Primary education	03	11
	Secondary education	09	28
	Pre university education	03	11
06	Type of the family		
	Joint	23	78
	Nuclear	07	22
	Extended	00	00

07	Occupation of father Daily wages worker Private employee Government employee Self employee	02 06 08 14	08 22 24 46
08	Occupation of mother Daily wages worker Private employee Government employee Housewife	01 01 02 26	03 03 08 86
09	Income of parents (in Rupees) per month Below 15000 15000-30000 30000 and above	00 08 22	00 28 72
10	Area of residency Rural Urban	02 28	04 96
11	Have you undergone HPV vaccination Yes No	00 30	00 100
12	Sources of information about HPV vaccination Print media Electronic media Health personnel Peer group & social circle No information	00 03 01 00 26	00 12 02 00 86

Table No.1 reveals that

- Majority of the subjects 25 (82%) were in the age group of 17-18 years and 05 (18%) were in the age group of 15-16 years.
- Majority of the subjects 28 (92%) were Hindu religion and 02 (08%) were Muslim, whereas no one belongs to Christian and Other religion.
- Majority of the adolescent girls 16 (52%) were from II Year PUC and 14 (48%) were from I Year PUC.
- Majority of the subject's mothers 15 (50%) had secondary education, 07 (22%) had graduation & above, 03 (11%) had pre university education, 3 (11%) had primary education & 02 (6%) with no formal education.
- Majority of the subject's fathers 14 (48%) were with graduation & above education, 09 (28%) completed secondary education, 3 (11%) had primary education, 3 (11%) were having pre university education & 1 (2%) was having no formal education.
- With regard to type of family, majority of the subjects 23 (78%) belongs to joint family, 7 (22%) were belongs to nuclear family, whereas no one belongs to the extended family.
- With regards to occupation of subject's father 14 (46%) were self employee, 8 (24%) were government employee, 6 (22%) were private employee and 2 (8%) were daily wage workers.
- With regards to occupation of subject's mother, majority of mothers 26 (86%) were house wives, 2 (8%) were government employee, 1 (3%) were private employee and 1 (3%) was daily wage workers.
- With regards to income of subject's parents, 22 (72%) were having income of Rs.30,000 & above per month, 8 (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 28 (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 26 (86%) were not having any information about HPV vaccination; whereas few 3 (12%) subjects were having some information about HPV

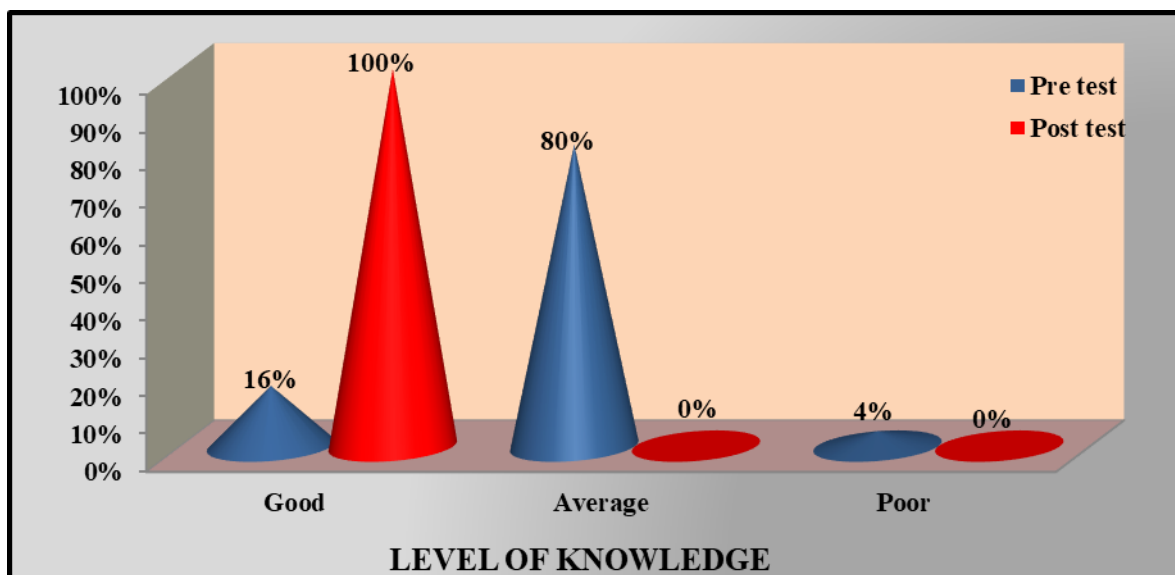
vaccination through electronic media and one subject 1(2%) had information from health personnel.

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)	05	16	30	100
Average (15.33-11.38)	24	80	00	00
Poor (11.38)	01	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 24(80%) had average knowledge, 5 (16%) had good

knowledge and 1(4%) had poor knowledge. In post-test after Information education communication approach, all the subjects 30 (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=30

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

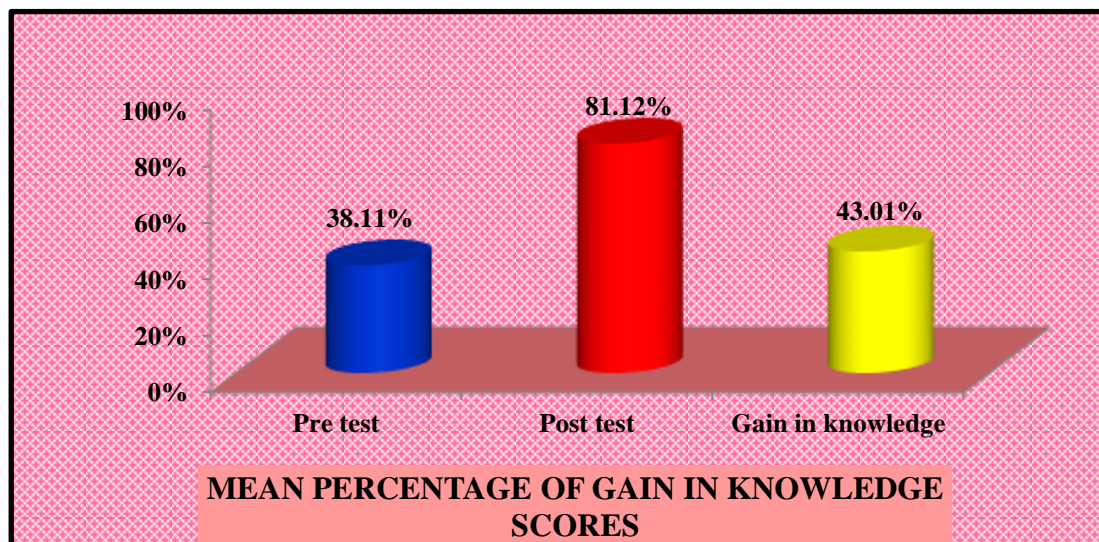
Table No. 3 reveals that, the mean pre-test knowledge score was 13.36, median 13, mode 12.28, standard deviation 1.97 and range 11. Whereas the mean post-test, knowledge score was 32.04, median 32,

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=30

Items	Total Score	Mean % of knowledge scores of subjects		
		Pre-test	Post-test	Gain in knowledge
Structured knowledge questionnaire	1200	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=30

SINo	Demographic Variable	Good	Average	Poor	Chi Square		
					Cal	Tab	df
1	Age in Years						
	15-16	02	03	00	5.44	5.99	02
	17-18	02	22	01			
2	Religion						
	Hindu	06	20	02	1.08	12.59	06
	Muslim	00	02	00			
	Christian	00	00	00			
	Others	00	00	00			
3	Course of the study						
	I Year PUC	04	10	00	1.919	5.99	02
	II Year PUC	05	11	02			
4	Educational status of mother						
	Non-formal	00	02	00	9.429	15.50	08

	Primary	00	03	00			
	Secondary	02	13	00			
	Pre university	01	02	00			
	Graduation & above	01	06	02			
5	Educational status of father						
	Non-formal	00	01	00	12.25	15.50	08
	Primary	00	03	00			
	Secondary	02	07	0			
	Pre university	01	02	00			
	Graduation & above	03	10	01			
6	Type of family						
	Nuclear	04	18	01	1.34	9.48	04
	Joint	01	05	01			
	Extended	00	00	00			
	Occupation of father						
	Daily wage worker	00	02	00	14.31*	12.59	06
	Private employee	01	04	01			
	Government employee	00	07	01			
	Self employed	04	10	00			
7	Occupation of mother						
	Daily wage worker	00	01	00	13.58*	12.59	06
	Private employee	00	01	00			
	Government employee	01	01	00			
	House wife	04	20	02			
8	Income of parents (In Rupees)						
	Below 15000	00	00	00			
	15000-30000	02	06	00	1.077	9.48	04
	30000 & above	03	18	01			
9	Area of residency						
	Rural	01	01	00	1.81	5.99	02
	Urban	08	18	02			
10	Have you undergone HPV vaccination						
	Yes	00	00	00	00	5.99	02
	No	08	20	02			
11	Source of Information						
	Print Media	00	00	00			
	Electronic media	01	02	00			
	Health personnel	01	00	00			
	Peer Group & Social circle	00	00	00	6.07	15.50	08
	No information	04	20	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.

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.

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.

Declarations

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published and agreed to be accountable for all aspects of the work.

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