Effectiveness of Information Education Communication (IEC) Strategy 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 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.
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. One strategy to reduce the spread of HPV, and thus prevent cervical cancer, is to increase the number of individuals who get HPV vaccination. 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. The suggested age for vaccination is between 11 and 12 years of age, catch-up vaccines are available through the age of 26 years.

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

<table>
<thead>
<tr>
<th>SL. No</th>
<th>Demographic Variable</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Age in Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Pre-test (f)</th>
<th>Pre-test (%)</th>
<th>Post-test (f)</th>
<th>Post-test (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good (15.33)</td>
<td>05</td>
<td>16</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>Average (15.33-11.38)</td>
<td>24</td>
<td>80</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Poor (11.38)</td>
<td>01</td>
<td>04</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

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

Table no 3: Mean, Median, Mode, Standard Deviation and Range of knowledge scores of subjects regarding Human papilloma virus vaccination. n=30

<table>
<thead>
<tr>
<th>Area of analysis</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
<th>Standard deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>13.36</td>
<td>13</td>
<td>12.28</td>
<td>1.97</td>
<td>11</td>
</tr>
<tr>
<td>Post-test</td>
<td>32.04</td>
<td>32</td>
<td>31.92</td>
<td>1.27</td>
<td>8</td>
</tr>
<tr>
<td>Difference</td>
<td>18.68</td>
<td>19</td>
<td>19.64</td>
<td>0.7</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Items</th>
<th>Total Score</th>
<th>Mean % of knowledge scores of subjects</th>
<th>Gain in knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td>Structured knowledge questionnaire</td>
<td>1200</td>
<td>38.11</td>
<td>81.12</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Mean Difference ((d))</th>
<th>Standard error of difference (SE(d))</th>
<th>Paired ‘t’ values</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.68</td>
<td>0.4057</td>
<td>46.04</td>
</tr>
</tbody>
</table>

* 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.

<table>
<thead>
<tr>
<th>SlNo</th>
<th>Demographic Variable</th>
<th>Good</th>
<th>Average</th>
<th>Poor</th>
<th>Chi Square Cal</th>
<th>Tab</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age in Years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-16</td>
<td></td>
<td>02</td>
<td>03</td>
<td>00</td>
<td>5.44</td>
<td>5.99</td>
<td>02</td>
</tr>
<tr>
<td>17-18</td>
<td></td>
<td>02</td>
<td>22</td>
<td>01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td></td>
<td>06</td>
<td>20</td>
<td>02</td>
<td>1.08</td>
<td>12.59</td>
<td>06</td>
</tr>
<tr>
<td>Muslim</td>
<td></td>
<td>00</td>
<td>02</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>00</td>
<td>00</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td>00</td>
<td>00</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Course of the study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Year PUC</td>
<td></td>
<td>04</td>
<td>10</td>
<td>00</td>
<td>1.919</td>
<td>5.99</td>
<td>02</td>
</tr>
<tr>
<td>2 Year PUC</td>
<td></td>
<td>05</td>
<td>11</td>
<td>02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Educational status of mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-formal</td>
<td></td>
<td>00</td>
<td>02</td>
<td>00</td>
<td>9.429</td>
<td>15.50</td>
<td>08</td>
</tr>
</tbody>
</table>
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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REFERENCES
1. World health organization. [online]. [cited on 2021 Jan 5]; Available from: https://www.who.int/health-topics/cervical-cancer#tab=tab_1
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