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Effectiveness of Educational Intervention on the Level of Knowledge Regarding Cervical Cancer, Human Papilloma Virus (HPV) Vaccine and on the Willingness to Vaccinate Their Daughters among Mothers of Adolescent Girls at Selected Areas in Puducherry



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ABSTRACT

Objective: The main purpose of this study was to assess the existing Level of Knowledge regarding Cervical cancer, Human Papilloma Virus (HPV) vaccine, to evaluate the Effectiveness of Educational Intervention on the Level of Knowledge regarding Cervical cancer, Human Papilloma Virus (HPV) vaccine among Mothers of Adolescent Girls, to assess the willingness to vaccinate their daughters, to associate the Post-test level of Knowledge with selected demographic variables and to associate the willingness of Mothers of Adolescent Girls to vaccinate their daughters with selected demographic variables. **Materials and methods:** The research approach used in the study was Quantitative. Pre-experimental one group Pre-test Post-test design was adopted for this study. A simple random sampling technique was used to select the setting. A total of 143 samples of Mothers of Adolescent girls who had fulfilled the inclusion criteria and were available during the period of data collection were selected by purposive sampling technique. The tool used in this study was a self-structured questionnaire. **Results and conclusion:** The study results illustrated that in the Pre-test, the majority of them had (94.4%) inadequate Level of Knowledge and only 5.6% with moderately adequate Knowledge. But in Post-test, 53.8% had moderately adequate Knowledge and 46.2% had adequate knowledge. The mean and SD in Pre-test for Cancer Cervix and HPV Vaccine was $21.49 \pm (4.41)$, $13.9 \pm (2.8)$ respectively and in Post-test it was $41.0 \pm (4.6)$, $17.6 \pm (2.4)$ respectively. The calculated paired 't' test value of $t = 41.7$, $t = 54.4$ was found to be statistically significant at $p < 0.001$. The study result proved that the Educational Intervention has improved the Knowledge regarding Cervical Cancer, Human Papilloma Virus (HPV) vaccine among the Mothers of Adolescent Girls. The researcher concluded that Educational Intervention was found to be effective to increase the level of Knowledge.

INTRODUCTION:

Cancer is one of the biological threats among men and women. It is characterized by an abnormal growth of cells, the ability to attack the adjacent tissues and organs. There are various types of cancer peculiar to women, among which Cervical and breast cancer are highly reported. Cervical cancer is one of the easily preventable cancers owing to the long lag period (**Akanksha et al 2016**)¹. Cervical cancer is the second most common cancer in women with an estimated 570,000 new cases in 2018 demonstrating 66% of cancer about females. Approximately 90% of deaths from cervical cancer happened in low and middle-income countries (**WHO 2018**)². Human Papilloma Virus (HPV) is the most common sexually transmitted infection (STI) which causes a wide range of diseases from warts to cancer (**Funmilola 2018**)³. Persistent infection with HPV is the common cause of carcinoma of the cervix. The human papillomavirus (HPV) is the most common sexually transmitted infection and can lead to cancer of the cervix, vulva, vagina, penis, anus, and oropharynx (**CDC 2015**)⁴. In India, the population of women aged 15 years and above with the risk of developing Cervical Cancer is 432.20 million. Northeastern districts of Tamil Nadu, India with Puducherry, a union territory is a high incidence belt for cervical cancer having a higher age-adjusted incidence (39.2/100,000 population) compared to nearby districts Villupuram (31.1/100,000 population) and Cuddalore (29.9/100,000 population) (**Nandakumar et al NCRP-ICMR**)⁵. The Indian Academy of Paediatrics Committee on Immunisation (IAPCOI) recommends offering the HPV vaccine to all females before sexual debut (**Karthikeyan 2012**)⁶. Despite the availability and the approval of HPV vaccine by the Drug Controller General of India (DCGI), US Food and Drug Administration, European Medicines Agency, and Prequalification by WHO, the uptake of HPV vaccination is very low in developing countries like India (**Karthikeyan 2012**)⁶. Hence there is a stand-in need to increase the knowledge about the uptake of vaccines to prevent Cervical cancer and screening programs by health professionals. The researcher had a chance to work with cancer affected persons in Regional Cancer Centre (RCC) for more than a year. During that period the investigator has been able to understand the sufferings undergone by those people. Most of the patients have been diagnosed with cancer only at the later stage where there has been no remedy for their recovery. This is because of their lack of knowledge and awareness, though it has been preventable cancer. This background has made the researcher assess the level of knowledge among the target group. Since the vaccine efficacy was more when it administered before sexual debut the researcher

target the mothers of adolescent girls. Women, especially the mothers, have a major role to play when making an important choice regarding their daughters.

MATERIALS AND METHODS:

The research approach adopted for the study was Quantitative in Nature. The research design adopted for this study was a Pre-experimental one group Pre-test Post-test design, and a purposive sampling technique was used to select the samples. Mothers having Adolescent Girls of age between 9 and 19 years of age, whose daughters were not vaccinated for HPV vaccine before, both working and non-working, who were able to read and understand Tamil or English were included in the study. Mothers of Adolescent Girls who were not willing to participate were excluded from the study. The tool used in this study was a self-structured questionnaire consists of 4 sections, the first section comprised of Socio-demographic data, the second section comprised of 13 Knowledge questions related to Cervical cancer, the third Section Comprised of 12 Knowledge questions related to the HPV vaccine, fourth section comprised of 1 question related to a willingness for vaccination. The intervention used for this study was an Educational Intervention with Laptop assisted PowerPoint Teaching. The data collection period was 4 weeks. Approval was obtained from the Institutional ethical committee. Formal permission was obtained from the PHC medical officer who is in charge of the selected area through the Director of health and family welfare Puducherry. The data were collected in three phases. In phase I, a sample survey was done by the researcher, and those fulfilling the inclusion criteria were selected as samples. After getting Informed written consent Pre-test was conducted. In phase II after Pre-test, on the same day Educational Intervention was given regarding definition, the natural history of Cervical cancer, epidemiology, causes, risk factors, signs and symptoms, preventive measures, other cancers preventable by the HPV vaccine, its efficacy, and availability of vaccine. In phase III Post-test was conducted on the seventh day of Intervention by using the same structured questionnaire by the door to door method.

RESULTS AND DISCUSSION:

RESULTS:

Out of 143 samples concerning Age, the majority 66(46.2%) of the Mothers of Adolescent Girls were in the age group of 35 to 44 years. About Religion, the majority (94.4%) were Hindu.

Concerning the place of residence, all of them (100%) were residents of the urban area. Concerning Mother's education, the majority 75(52.4%) had secondary and higher secondary education. Regarding Mother's work status, the majority 75 (52.4%) were housewives. Related to family income, the majority 73(51%) had an income of less than 10000 per month. Concerning the type of family, the majority 113 (79%) of them were from nuclear families. Regarding the family history of Cervical Cancer, the majority 134(93.7%) had no family history of Cervical Cancer. Related to the previous sources of information, the majority 122(85.3%) had no information. Concerning vaccination uptake history in the family, the majority 137(95.8%) had no vaccination uptake history.

The result reveals that in the Pre-test, the majority135 (94.4%) of them had inadequate Level of Knowledge, 8(5.6%) had moderately adequate Level of Knowledge and none of them had adequate Level of Knowledge. In the Post-test 77(53.8%) of them had a moderately adequate Level of Knowledge, 66(46.2%) of them had an adequate Level of Knowledge and none of them had an Inadequate Level of Knowledge.

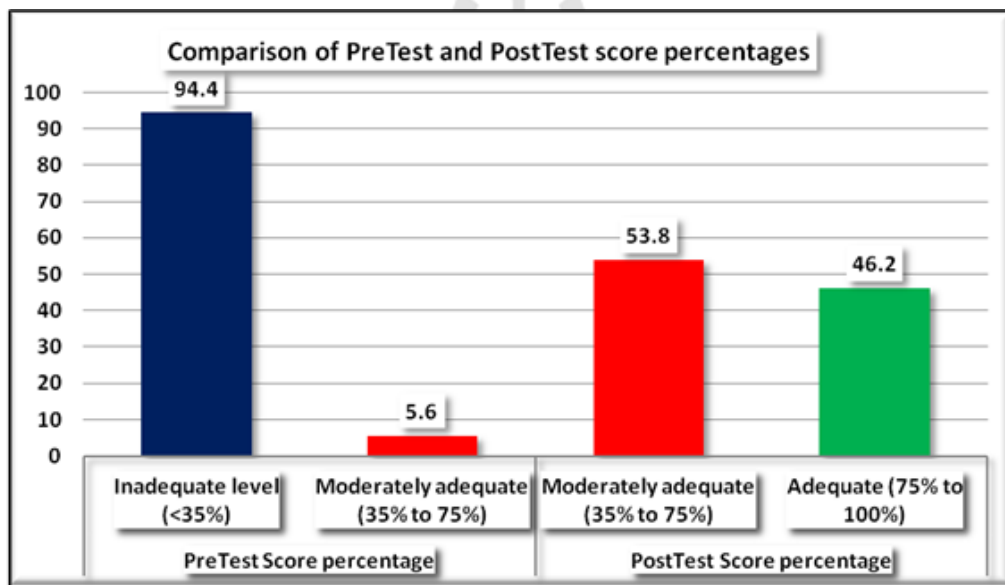


Figure No. 1: Distribution of Pre and Post-test Level of Knowledge Regarding Cervical Cancer and HPV Vaccine among the Mothers of Adolescent Girls.

Table No. 1: Comparison of Pre and Post-test Level of Knowledge on Cervical cancer among Mothers of Adolescent Girls N=143

Knowledge	Mean	SD	Sig.	Mean difference and paired 't' value
PRE TEST	21.497	4.4165	P < 0.001 S**	19.5035 (t=41.7)
POST TEST	41.000	4.6406		

The result exhibits that the Pre-test and Post-test mean \pm SD score of the Level of Knowledge regarding the Cancer cervix was 21.497 ± 4.4165 and 41.000 ± 4.6406 respectively. The calculated paired 't' value of $t = 41.7$ was found to be statistically significant at $p < 0.001$.

Table No. 2: Comparison of Pre and Post-test Level of Knowledge Regarding HPV Vaccine among Mothers of Adolescent Girls N=143

Knowledge	Mean	SD	Sig.	Mean difference and paired 't' value
PRE TEST	13.986	2.8753	P < 0.001 S**	22.8811 (t = 54.4)
POST TEST	36.867	4.3073		

The result displays that the Pre-test and Post-test mean \pm SD score of the Level of Knowledge regarding the HPV vaccine was 13.986 ± 2.8753 and 36.867 ± 4.3073 respectively. The calculated paired 't' value of $t = 54.4$ was found to be statistically significant at $p < 0.001$. Hence the research hypothesis H1 was accepted.

The result portrays a statistically highly significant association between the Post-test Level of Knowledge and the demographic variables like **education** and **work status** among the Mothers of Adolescent Girls with chi-square value of ($\chi^2 = 39.5, d.f = 3$), and ($\chi^2 = 40.1, d.f = 4$) at $p < 0.001$ level. Hence the research hypothesis H2 was accepted. The result also reveals a statistically significant association between the willingness of Mothers of Adolescent Girls to

vaccinate their daughters and the demographic variable **age** with a chi-square value of ($\chi^2 = 10.9$, **d.f = 3**) at **p < 0.05 level**. Hence the research hypothesis H3 was accepted.

DISCUSSION:

Out of 143 samples concerning Age, the majority 66(46.2%) of the Mothers of Adolescent Girls were in the age group of 35 to 44 years. About Religion, the majority (94.4%) were Hindu. Concerning the place of residence, all of them (100%) were residents of the urban area. Concerning Mother's education, the majority 75(52.4%) had secondary and higher secondary education. Regarding Mother's work status, the majority 75 (52.4%) were housewives. Related to family income, the majority 73(51%) had an income of less than 10000 per month. For the type of family, the majority 113 (79%) of them were from nuclear families. Regarding the family history of Cervical Cancer, the majority 134(93.7%) had no family history of Cervical Cancer. Related to previous sources of information, the majority 122(85.3%) had no information. Concerning vaccination uptake history in the family, the majority 137(95.8%) had no vaccination uptake history. The **first objective** was to assess the Pre and Post-test Level of Knowledge regarding Cervical Cancer, Human Papilloma Virus (HPV) vaccine among the subjects. The result showed that in the Pre-test, the majority 135(94.4%) of them had inadequate Levels of Knowledge. After the intervention, a total of 46.2% had been able to score an adequate Level of Knowledge from the zero levels and those with moderately adequate level had been increased from the 5.6% level to 53.8%. The **second objective** was to evaluate the Effectiveness of Educational Intervention on the Level of Knowledge regarding Cervical Cancer, Human Papilloma Virus (HPV) vaccine among the subjects. The calculated paired 't' value of $t = 41.7$, $t = 54.4$ was found to be statistically highly significant at $p < 0.001$. This proves that educational intervention was found to be Effective to improve the Level of Knowledge. Hence, the research hypothesis **HI** was accepted. The **third objective** was to assess the Willingness of Mothers of Adolescent Girls to vaccinate their daughters. The result exposed that out of 143 Mothers of Adolescent Girls, 142 (99.5%) were willing to vaccinate their daughters. Only one subject (0.5%) didn't agree with the vaccination because of fear. The **fourth objective** was to find the association between the Post-test Level of Knowledge of Mothers of Adolescent Girls with their selected demographic variables. The result showed that demographic variables like education, work status of the mother are highly significant at $p < 0.001$. Hence, **H2** is accepted. The **fifth**

objective was to find the association between the Willingness of Mothers of Adolescent Girls to vaccinate their daughters and selected demographic variables. The result showed that demographic variable age had shown statistically significant association with chi-square value of ($\chi^2 = 10.9$, $df = 3$) at $p < 0.05$ level. Hence, the research hypothesis **H3** was accepted.

CONCLUSION:

Preventive health has been a long-neglected one in developing countries like India. People have more faith in rectifying what is broken rather than protecting what can be saved. Though Cervical Cancer is a vaccine-preventable Cancer, lack of Knowledge results in poor uptake of vaccination. This study results have revealed that the Pre and Post-test results have shown a strong significant difference through $t = 41.7$ at $P < 0.001$ for Cervical Cancer, and HPV vaccine $t = 54.4$ at $p < 0.001$ (strongly significant). Here the researcher has concluded that after the intervention, a total of 46.2% have been able to score an adequate Level of Knowledge from the zero levels and those with moderately adequate levels have been increased from the 5.6% level to 53.8%. The study result proved that the Educational Intervention has improved the Level of Knowledge regarding Cervical Cancer, Human Papilloma Virus (HPV) vaccine among the Mothers of Adolescent Girls significantly. So, this method of Educational Intervention can be promoted to increase the Level of Knowledge regarding Cervical Cancer, Human Papilloma Virus (HPV) vaccine among the Public in the community.

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