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Effectiveness of plan teaching program regarding knowledge and attitude towards Human Papillomavirus vaccination among female adult patients in a selected hospital, Aizawl, Mizoram

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Abstract:
Background*: Human Papillomavirus (HPV) is the most commonly sexually transmitted infection and the majority of HPV infections are asymptomatic and resolve spontaneously, but persistent infections can develop into cancers in both women and men. Human Papillomavirus vaccination is documented to be highly effective in preventing moderate to severe cell changes in the cervix and cervical cancer.*
Materials and Methods*: In this prospective study, 30 female adult patients belonging to age group of 18-45years were used for the sample using simple random sampling technique. The tools consists of 3 parts i.e. demographic performa, knowledge assessment and attitude scale tests. The data collection was completed within a week and statistical analysis such as inferential statistics and descriptive statistics were used for the analysis of the data.*
Results*: For the knowledge test, pre-test mean score of the participants was 4.43 and post-test mean score was 10.4. The calculated 't' value was 8.06 which is greater than the tabulated value 2.05 at 0.05 level of significance. For the attitude scale, the pre-test mean score was 19 while the post-test mean score was 25.3. The calculated 't' value was 3.15 which is greater than the tabulated value 2.05 at 0.05 level of significance.*
Conclusion: *The finding reveals that the research hypothesis was accepted while the null hypothesis was rejected. Thus we found that plan teaching program on Human Papillomavirus vaccination was effective in improving the knowledge and attitude of female adult patients.*

Key Word*: Assess, plan teaching program, Human Papillomavirus, vaccination, female adult patients*

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I. Introduction

A viral infection called the human papillomavirus (HPV) frequently results in warts, which are growths on the skin or mucous membranes. The most prevalent sexually transmitted infection, HPV, affects nearly all unvaccinated adults at some point in their lives. More than 100 different types of human papillomavirus (HPV) exist. Certain HPV infection types result in warts, while others can cause various cancers in both men and women.[1,2] The primary cause of cervical cancer, HPV infections, can currently be prevented but not treated with vaccines. These current strategies might be enhanced with a therapeutic HPV vaccine. The goal of these vaccinations is to strengthen the immune system so that it can combat and eradicate dangerous virus strains or aberrant "precancerous" cells. In developing nations, where millions of women remain without possession of efficient cervical screening and cancer therapies, it is probably going to be especially helpful for adult women who were not vaccinated against the Human Papillomavirus prior to contracting the virus.[3,4] More than 20 therapeutic HPV vaccine candidates are presently in various phases of research, with a number of them undergoing clinical trials. In order to help vaccine developers fulfil the demands of global public health and expedite the rollout of authorised vaccinations, the new report intends to provide guidance. It takes into account target populations, safety and efficacy standards, medical indications for possible use of such a vaccination, and pragmatic factors like cost, storage and dose schedules, and delivery method.[5]

II. Material And Methods

This study was carried out on female adult patients within the age range of 18-45 years at Synod Hospital, Durtlang, Aizawl, Mizoram from . A total of 30 patients were used as sample.

Study Design: Pre-test-post-test-only design

Study Location: The research was carried out at Synod Hospital, Aizawl, Mizoram

Sample size: 30 patients.

Subjects & selection method: The study population was drawn from consecutive female adult patients who are present at the time of data collection by simple random sampling technique.

Inclusion criteria:

1. Female adult patients i.e, (18-45 years) in a selected hospital who are present at the time of data collection.

Exclusion criteria:

1. Females who are less than 18 years.
2. Females who are more than 45 years.
3. Who are not available at the time of data collection.

Data Collection

After written informed consent was obtained, a well-designed questionnaire was used to collect the data of the recruited patients retrospectively. The questionnaire included socio-demographic characteristics such as age, marital status, education qualification, current occupation, average family income per month, past gynecological history and present gynecological history. The knowledge test self structured questionnaire was used to assess the knowledge of the patients and attitude was assessed using Likert scale.

Data was collected from 8 to 12 samples in a day and the knowledge and attitude was assessed before implementation of health teaching and then post education knowledge and attitude was assessed again to know the improvements.

Statistical analysis

Data analysis was done based on the study objectives. Analysis was done using descriptive and inferential statistics.

Section I : Description of frequency and percentage distribution of female adult patients according to their demographic variables.
Section II : Mean and standard knowledge and attitude score of female adult patients in pre and post assessment.
Section III : Assessment of effectiveness of plan teaching on knowledge score in pre-test and post-test by 't-test'.
Section IV : Assessment of effectiveness of plan teaching on attitude score in pre-test and post-test by 't-test' .

III. Result

Section I : Description of frequency and percentage distribution of female adult patients according to their demographic variables.

Table 1 : Frequency and percentage distribution of female adult patients in regard to demographic variables.

Demographic variables of the subjects (n=30)

Sl no.	CONTENTS	VARIABLES	Frequency(f)	Percentage(%)
1	**Age**	18-26	8	26%
		27-35	17	57%
		36-45	5	17%
2	**Marital status**	Married	20	66%
		Unmarried	7	24%
		Divorced	1	3%
		Widow	2	7%
3	**Educational qualification**	Middle School	3	10%
		High School	10	33%
		Higher Secondary School	11	37%
		Graduate		
		Post Graduate	6	20%
			0	0%
4	**Current occupation**	Student	1	3%
		Employed	9	30%

		Unemployed	20	67%
5	**Average family income per month**	Below 10,000 10,000-30,000 40,000-50,000 Above 50,000	9 12 3 6	30% 40% 10% 20%
6	**Past gynecological history**	Yes No	10 20	33% 67%
7	**Any present gynecological illness**	Yes No	5 25	17% 83%

The above **table 1** represents the demographic variables of the subjects. Results shows that majority of the samples are middle aged women **(57%)** with most of them being married **(64%)**. Most of the samples are educated but majority are unemployed **(67%)** while some held a job **(30%)** and a few of them are students **(3%)**. The average family income per month were normally around 10,000-30,000 **(40%)**. The samples were mostly free from past gynecological history **(67%)** while few had past history of gynecological illness **(33%)** and at present, majority of the samples does not have present gynecological illness **(83%)** while some were currently infected **(17%)**.

Section II : Mean and standard knowledge and attitude score of female adult patients in pre and post assessment.

Section II (a) : Mean and standard distribution of knowledge regarding Human Papillomavirus vaccination.

Table 2 :

Category			**Knowledge**					
	Excellent		**Good**		**Fair**		**Poor**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Pre-test	0	0%	1	4%	4	13%	25	83%
Post-test	3	10	20	66%	6	20%	1	4%

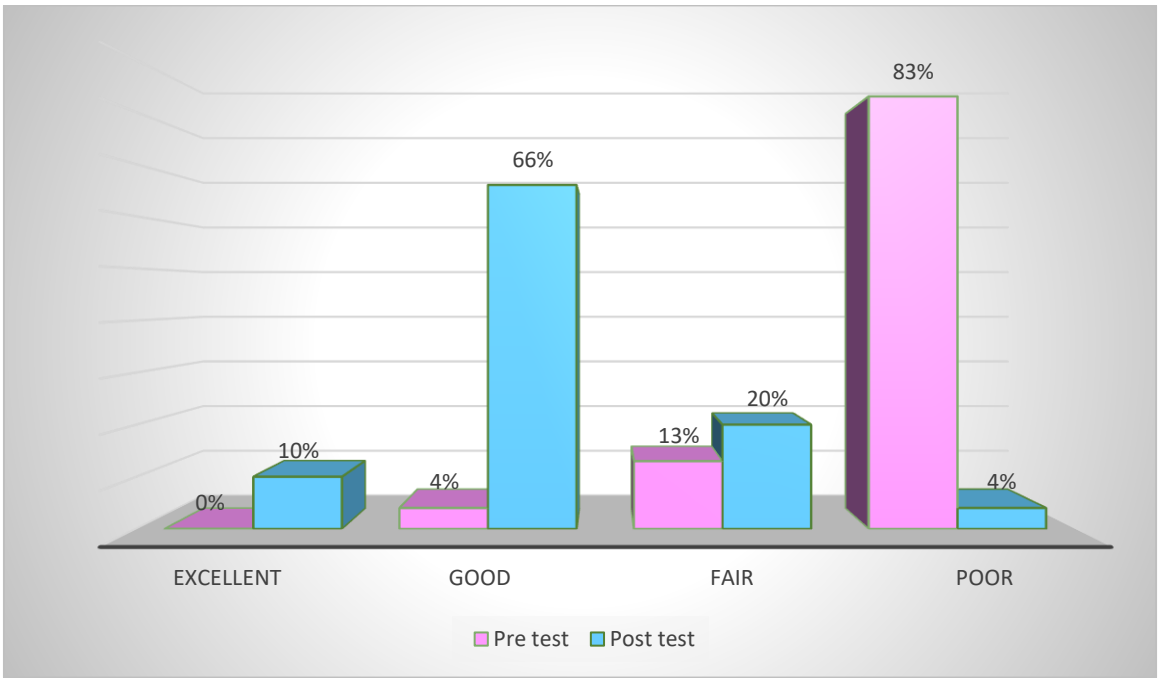

Figure 1 : Bar diagram showing distribution of knowledge regarding Human Papillomavirus vaccination among female adult patients.

Table 2 and figure 1 represents that majority **25 [83%]** of them are having poor knowledge and fair knowledge **4 [13%]** before the implementation of plan teaching program regarding Human Papillomavirus vaccination. Most

of them **20 [66%]** have good knowledge after the implementation of plan teaching program regarding Human Papillomavirus vaccination.

Section II (b) : Mean and standard distribution of attitude regarding Human Papillomavirus vaccination.

Table 3:

Category	Attitude							
	Strongly unfavorable		Unfavorable		Neutral		Favorable	
	N	%	N	%	N	%	N	%
Pre-test	0	0%	3	10%	23	77%	4	13%
Post-test	0	0%	0	0%	11	37%	19	63%

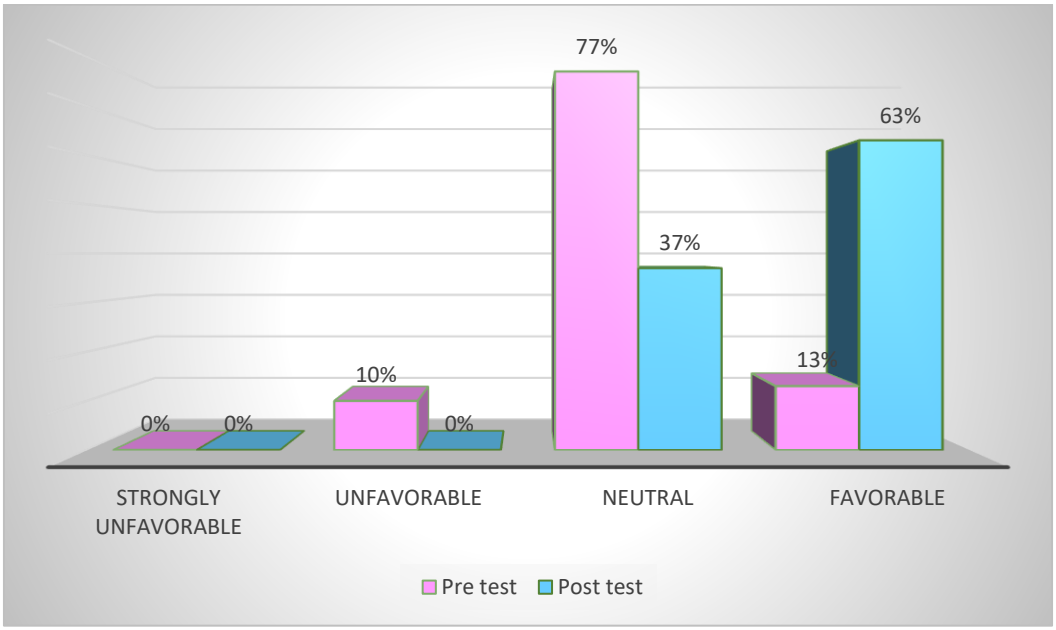

Figure 2 : Bar diagram showing distribution of attitude regarding Human Papillomavirus vaccination among female adult patients.

Table 3 and figure 2 represents that majority **23 [77%]** of them are having neutral attitude score and favorable attitude **4 [13%]** before the implementation of plan teaching program regarding Human Papillomavirus vaccination. Most of them **19 [63%]** have favorable attitude after the implementation of plan teaching program regarding Human Papillomavirus vaccination.

Section III : : Assessment of effectiveness of plan teaching on knowledge score in pre-test and post-test by ' paired t-test'.

Table 4 : Paired t test for assessment on effectiveness of knowledge on Human Papillomavirus vaccination before and after the implementation of plan teaching program.

n=30

Knowledge	Mean	SD	Mean Difference	df	t-test value	Tab value	Remarks
Before	4.43	2.54	5.97	29	8.06	2.05	Significant
After	10.4	1.64					

P > 0.05 significance

The above **table 4** shows the paired t test for assessment on effectiveness of knowledge on Human Papillomavirus vaccination before and after implementation of plan teaching program. The mean difference between pre-test and post-test was **5.97**. The calculated 't' value between pre-test knowledge and post-test knowledge **(t=8.06, p= >0.05)**, which was found higher than the tabulated t value **[t = 2.05, df = 29]** which was statistically significant at **0.05** level of significance. Therefore it is inferred that there is a significant difference

between pre-test and post-test knowledge score on effectiveness of plan teaching program. We accept the research hypothesis and reject the null hypothesis.

Thus it was found that plan teaching program on Human Papillomavirus vaccination was effective in improving the knowledge of female adult patients.

Section IV : Assessment of effectiveness of plan teaching on attitude score in pre-test and post-test by 'paired t-test' .

Table 5 : Paired t test for assessment on effectiveness of attitude on Human Papillomavirus vaccination before and after the implementation of plan teaching program.

n=30

Attitude	Mean	SD	Mean Difference	df	t-test value	Tab value	Remarks
Before	19	4.11	6.3	29	3.15	2.05	Significant
After	25.3	2.55					

P > 0.05 significance

The above **table 5** shows the paired t test for assessment on effectiveness of knowledge on Human Papillomavirus vaccination before and after implementation of plan teaching program. The mean difference between pre-test and post-test was **6.3**. The calculated 't' value between pre-test knowledge and post-test knowledge **(t=3.15, p= >0.05)**, which was found higher than the tabulated t value **[t = 2.05, df = 29]** which was statistically significant at **0.05** level of significance. Therefore it is inferred that there is a significant difference between pre-test and post-test knowledge score on effectiveness of plan teaching program. We accept the research hypothesis and reject the null hypothesis. Thus it was found that plan teaching program on Human Papillomavirus vaccination was effective in improving the knowledge of female adult patients.

IV. Discussion

Section I : Discussion on the basis of frequency and percentage distribution of female adult patients according to their demographic variables.

In the present study, the total number of participants was 30 female adult patients, out of which majority 17 [57%] were middle-aged women, followed by [826%] young adults and the least 5 [17%] comprising of older adults. Similarly in a study conducted by Melissa B. Gilkey (2015**)**, majority of the samples are middle aged women [53%].

In the present study, the majority of participants 20 [66%] are married, followed by 7 [24%] unmarried, 2 [7%] widow and 1 [3%] divorced. While in a study conducted by Spinner, the majority of participants are unmarried and also in a study conducted by Dayalal D. Patildar (2023**)** majority 83 [83%] of the participants are also unmarried.

The findings of this study showed that majority 11 [37%] of female adult patients have an educational qualification of higher secondary school, followed by 10 [33%] who have passed high school, 6 [20%] are graduates and 3 [10%] have an educational qualification of middle school. In a similar study conducted by Dayalal D. Patildar (2023**)** with 100 participants, majority 43 [43%] of the participants had an educational qualification of higher secondary school.[6]

In the present study, 20 [67%] are unemployed followed by 9 [30%] who are employed and 1 [3%] who is student. The majority of the participants 12 [40%] have an average family income per month of around 10,000-30,000, followed by 9 [30%] of below 10,000, 6 [20%] of above 50,000 and 3 [10%] who have around 40,000-50,000. In the study conducted by Dayalal D. Patildar (2023), majority 35 [35%] are below the poverty line.[6]

In terms of past gynecological history, majority of the participants 20 [67%] have no history while 10 [33%] have past history and in terms of present gynecological status, majority 25 [83%] are unaffected while the rest 5 [17%] are currently having gynecological illness. In the study conducted by Deanna Kepka (2022), cervical cancer was most prevalent gynecological problem in the area of the study.

Section II : Discussion on the basis of frequency and percentage distribution of level of knowledge regarding Human Papillomavirus vaccination.

Results revealed that majority 25 [83%] of the participants had poor knowledge and fair knowledge 4 [13%] before implementation of plan teaching program. Most of them 20 [66%] have good knowledge after the implementation of plan teaching program.

The findings were inconsistent with a study conducted by Ephrem Yohannes (2023) regarding Human Papillomavirus vaccination, only 59 [24.9%] of the participants had fair knowledge regarding the vaccine. The variations observed can be explained by the differences in socioeconomic status, sample size, study settings, cultural norms and access to information. A journal published by Asian Pacific Journal of Cancer Prevention (2010) states that the mean knowledge score was remarkably poor with 83 [59,6%] having zeroes in their score.[7]

Section III : Discussion on the basis of effectiveness of plan teaching program regarding pre-test knowledge score and post-test knowledge score.

The present study result revealed that before providing health education, the mean knowledge score was 4.43 and after providing health teaching, the mean knowledge score was 10.4 with a mean difference of 9.7. The mean difference between the pre-test and post-test knowledge score was tested using paired t-test. The attained paired t-test value (t=8.06) was found to be statistically significant at 0.05 level of significance. Findings revealed that there is significant difference in level of knowledge among female adult patients before and after health teaching program was held. Hence hypothesis H1 which stated that there is a significant difference between the mean of pre-test knowledge score and post-test knowledge score on Human Papillomavirus vaccination was accepted.

In a similar study conducted by P Swathi and Indira V (2024) among adolescent girls, paired t-test was used to assess the effectiveness of plan teaching program where the mean difference was 9.9. The obtained t-test (8.1) was found to be statistically significant at 0.05 level of significance.[8] Also in a study conducted by Dayalal D. Patidar (2023), it was found that the post-test knowledge mean score was higher than the pre-test knowledge mean score. The calculated t-value (13.29) was greater than the tabulated value (1.98) at 0.05 level of significance.

Section IV : Discussion on the basis of effectiveness of plan teaching program regarding pre-test attitude score and post-test attitude score.

The present study outcome revealed that before health teaching was provided, mean attitude score was 19 and after providing health teaching the mean attitude score was 25.3 with a mean difference of 6.3. The mean difference between the pre-test and post-test attitude score was tested using paired t-test. The attained paired t test value (t=3.15) was found to be statistically significant at 0.05 level of significance. Findings revealed the significant difference in the level of attitude among female adult patients before and after health teaching program was held. Hence hypothesis H2 which stated that a significant difference between the mean of pre-test attitude score and post-test attitude score on Human Papillomavirus vaccination was present was accepted.

In a study conducted by Anita Prakasam (2019), the mean difference between pre-test attitude score and post-test attitude score was 24.713. The calculated t-value (23.406) was greater than the tabulated t-value (1.98) and was found to be significant at 0.05 level of significance. [[9]

V. Conclusion

Our findings indicate a need to develop educational interventions in collaboration with the Government and certain healthcare teams. The importance of having awareness campaigns and health programs regarding Human Papillomavirus and its vaccination was found out as much of the participants were unaware of the disease at the first place.

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