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## Assessment of effectiveness of Video Assisted Teaching (VAT) programme on knowledge and attitude regarding *In vitro* fertilization among nursing students in selected colleges of Shimla: An interventional study

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### Abstract

**Background:** Reproduction is the phenomenon that has evolved for the survival of living by producing continuous stream of new generation of same species. Production of new human beings begins with fertilization. Failure to this process results in infertility. Most of the cases (85%-90%) are treated with medications or surgery. Improvement in fertility treatment has made it possible for many women to conceive whose male partner is infertile. These new and advanced technologies include *In vitro* Fertilization, Intra Cytoplasmic Sperm Injection, and other similar procedures [1].

**Objectives:** The aim of this study was to assess the effectiveness of video assisted teaching on knowledge and attitude regarding *In vitro* Fertilization among nursing students.

**Methodology:** A quantitative approach with quasi experimental research design was used in the study.

**Sample and sampling technique:** This study include 100 Nursing students. Samples were selected by using convenient sampling technique.

**Setting:** The research setting was selected Nursing Colleges of Shimla, H.P.

**Tools:** The Socio Demographic Performa and Structured Knowledge Questionnaire were used to collect the data. After assessing the pre-existing knowledge of the samples, video assisted teaching on *In vitro* Fertilization was administered to the students of experimental group. At the end post test was conducted.

**Result:** The pre-test mean score of knowledge and attitude of experimental group was 21.57, 37.88 and that of comparison group was 19.04, 40.06 respectively. The post test mean score of knowledge and attitude of experimental group was 28.84, 49.73 and that of comparison group was 19.84, 41.22 respectively. In post test knowledge score the t value 11.74 was found to be significant at 0.05 level of significance as p value was 0.00\*. In relation to attitude the t value (5.11) was significant at p value was 0.00\*. The results depicted that video assisted teaching programme was effective hence it was concluded that there was significant improvement in the knowledge and attitude of the nursing students regarding *In vitro* Fertilization.

**Keywords:** Knowledge, attitude, effectiveness, video assisted teaching (VAT)

### 1. Introduction

*In vitro* Fertilization (IVF) is a process of fertilization where an egg is combined with sperm outside the body, *In vitro* ("in glass"). The process involves monitoring and stimulating a woman's ovulatory process, removing an ovum or ova (egg or eggs) from the woman's ovaries and letting sperm fertilize them in a liquid in a laboratory. After the fertilized egg (zygote) undergo embryo culture for 2-6 days, it is implanted in the same or another woman's uterus, with the intention of establishing a successful pregnancy [2].

IVF is a type of Assisted Reproductive Technology used for infertility treatment and gestational surrogacy. A fertilized egg may be implanted into a surrogate's uterus, and the resulting child is genetically unrelated to the surrogate [3].

In 1978, Louis Brown was the first child successfully born after her mother received IVF treatment. Brown was born as a result of natural-cycle IVF, where no stimulation was made [4]. However, a recent study that explores 10 adjuncts with IVF (screening hysteroscopy, DHEA, testosterone, GH, aspirin, heparin, antioxidants, in males and females, seminal plasma, and

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PRP) suggests that until more evidences is done to show that these adjuncts are safe and effective [5].

IVF success rate in India: India, the success rate of IVF ranges from 30% to 35%. Globally, the average IVF success rate is around 40% in young women. The chance of success rates also increases in women younger than 35 years of age [6].

Some countries have banned or otherwise regulate the availability of IVF treatment, giving rise to fertility tourism. Restrictions on the availability of IVF include costs and age, in order for a woman to carry a healthy pregnancy to term. IVF is generally not used until less invasive or expensive options have failed or been determined unlikely to work [7].

## 2. Methods and materials

**2.1 Research Design:** This study aims to assess the effectiveness of video assisted teaching programme on knowledge and attitude regarding *In vitro* Fertilization among nursing students. Quantitative approach was selected under that design was non randomised control group pre-test post test design.

**2.2 Setting:** The study was conducted in selected Nursing Colleges of Shimla.

**2.3 Population:** Nursing students

**2.4 Sample and sampling technique:** In the present study 100 Nursing students were selected by convenient sampling technique.

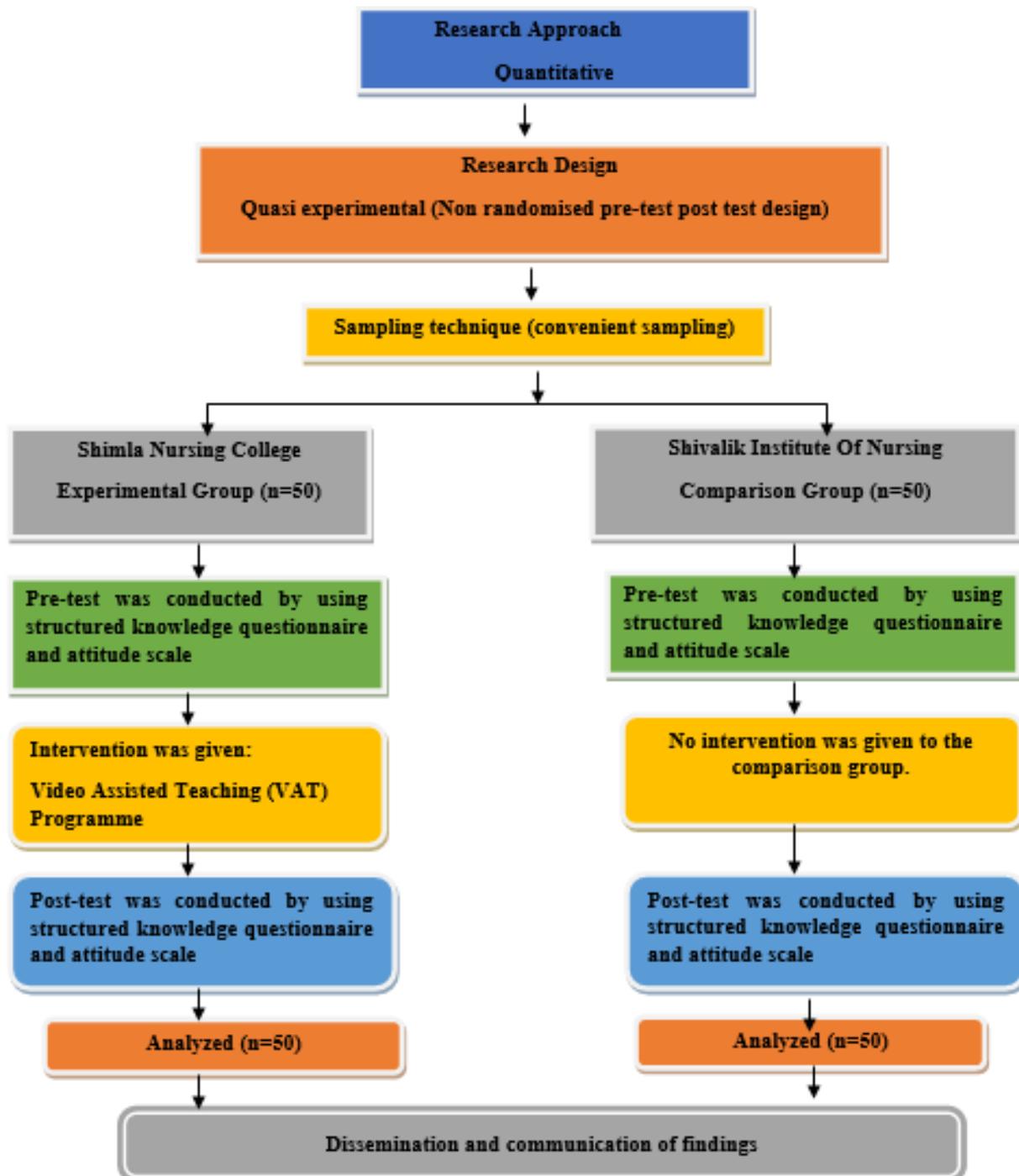


Fig 1: Schematic representation of the study.

## 2.5 Data Collection Tools and Techniques

Based on the objectives of the study, the tool was divided into the following section:

1. Sample characteristics Performa
2. Structured knowledge questionnaire
3. Attitude scale

The Structured knowledge questionnaire had 40 items and attitude scale had 15 items. These were validated by 5experts. The Experts were requested to judge the items for

their clarity, relevance, meaningfulness and content.

## 2.6 Ethical considerations

Ethical permission was obtained before conducting the study. Research participants were enrolled in the study after online informed consent and they were assured about the confidentiality of their responses.

## 3. Result

### 3.1 Description of demographic variables among Nursing Students

**Table 1:** Frequency and percentage distribution of demographic variables. N=100

S. No.	Sample characteristics	Experimental group (n= 50) f(%)	Comparison group (n=50) f(%)	Chi-square	df	P value
1.	Age in years			33.562	3	0.09 <sup>NS</sup>
	1.1 17-18years	15(30.6%)	9 (17.6%)			
	1.2 19-20years	15(30.6%)	25 (50%)			
	1.3 21-22 years	20(40%)	16 (31.4%)			
2.	Marital status:			3.377	1	0.06 <sup>NS</sup>
	2.1 Married	17(34%)	26(52%)			
	2.2 Unmarried	33(66%)	24(48%)			
3.	Area of residence			8.443	1	0.08 <sup>NS</sup>
	3.1 Urban	27(54%)	40(80%)			
	3.2 Rural	23(46%)	10(20%)			
4.	Educational status			2.619	2	0.27 <sup>NS</sup>
	4.1 Secondary	10(20%)	14(28%)			
	4.2 Senior secondary	28(56%)	20(40%)			
	4.3 Graduate	12(24%)	16(32%)			
5.	Previous knowledge about IVF			.647	1	0.42 <sup>NS</sup>
	5.1 Yes	23(46%)	26(52%)			
	5.2 No	27(54%)	24(48%)			
6.	Previous source of knowledge about IVF			14.678	3	0.08 <sup>NS</sup>
	6.1 Mass media	15(30%)	21(42%)			
	6.2 Friends	4(8%)	14(28%)			
	6.3 Family	31(62%)	15(30%)			

<sup>NS</sup>- Not significant

Data presented in Table-1 showed the sample characteristics of nursing students in both experimental and control group. The homogeneity of the groups was checked by using Chi

square and both the groups were found homogenous at the baseline.

**Table 2:** Mean, median, standard deviation of experimental and control group in terms of knowledge and attitude before administration of VAT programme.

	Groups	Mean	S.D.	Median
Pre test Knowledge	Experimental group (n=50)	21.57	2.887	21.00
Pre test Knowledge	Comparison group (n=50)	19.04	4.030	20.00
Pre test Attitude	Experimental group (n=50)	37.88	9.078	38.00
Pre test Attitude	Comparison group (n=50)	40.06	7.458	39.00

The data presented in Table 2 depicts the descriptive statistics and comparison of experimental and comparison group in terms of knowledge and attitude before administration of video assisted teaching program regarding

IVF. The mean Knowledge score in experimental group was 21.57 and in comparison group was 19.04. Similarly the Mean attitude score in experimental group was 37.88 and in comparison group it was 40.06.

**Table 3:** Frequency and percentage distribution of knowledge score after administration of VAT.

Level of knowledge	Experimental group n = 50 f(%)	Comparison group n = 50 f(%)
Poor knowledge (0-20)	0(0%)	26(51%)
Average knowledge (21-30)	35(70%)	24(49%)
Good knowledge (31-40)	15(30%)	0(0%)

Minimum Score: 0, Maximum Score: 40

The data presented in Table-3 depicts that after administration of Video Assisted Teaching Programme in the Experimental group maximum of the students i.e. 35(70%) were having average knowledge and others

15(30%) was having good knowledge. On Comparing with the Comparison group it was found that around half of the students 26(51%) were having poor knowledge and others i.e. 24(49%) were having average knowledge.

**Table 4:** Frequency and percentage distribution of attitude score after administration of VAT.

Type of attitude	Experimental group (n = 50) f(%)	Comparison group (n= 50) f(%)
Positive attitude (40-75)	40(80%)	28(56%)
Negative attitude (15-39)	10(20%)	22(44%)

Minimum score= 15, Maximum score= 75

The data presented in Table -4 shows that in Experimental group Maximum of the students 40(80%) were having positive attitude and 10(20%) were having negative attitude.

On the other hand in Comparison group 28(56%) were having positive attitude and 22(44%) were having negative attitude.

**Table 5:** Mean, median, standard deviation of knowledge and attitude score after administration of VAT. N= 50

	Groups	Mean	S.D.	Median
Post test Knowledge	Experimental group (n=50)	28.84	3.976	29.00
Post test Knowledge	Comparison group (n=50)	19.84	3.679	20.00
Post test Attitude	Experimental group (n=50)	49.73	9.146	53.00
Post test Attitude	Comparison group (n=50)	41.22	7.449	40.00

The data presented in Table -5 depicts the descriptive statistics and comparison of experimental and comparison group in terms of knowledge and attitude after administration of video assisted teaching program regarding

IVF. The mean Knowledge score in experimental group was 28.84 and in comparison group was 19.84. Similarly the Mean attitude score in experimental group was 49.73 and in comparison group it was 41.22.

**Table 6:** t value of experimental and comparison group in terms of knowledge after administration of VAT Programme.

Variable	Groups	Mean	S.D.	Mean difference	Standard error of mean difference	't' value	df	P value
Post test knowledge	Experimental group (n =50)	28.84	3.976	8.994	.568	11.747	98	0.00**
	Comparison group (n =50)	19.84	3.679					

The data presented in Table 6 depicts the 't' value of experimental and comparison group in terms of knowledge after video assisted teaching programme. The independent 't' test was applied and computed 't' value obtained

(11.747) was found to be statistically significant at 0.05 level of significance which shows that there was a significant difference in post test knowledge in both experimental and comparison group.

**Table 7:** 't' value of experimental and comparison group in terms of attitude after administration of VAT programme.

Variable	Groups	Mean	S.D.	Mean difference	Standard error of mean difference	't' value	Df	P value
Post test attitude	Experimental group n =50	49.73	9.146	8.519	1.665	5.116	98	0.00**
	Comparison group n =50	41.22	7.449					

The data presented in Table7 depicts the 't' value of experimental and comparison group in terms of attitude after video assisted teaching programme. The independent 't' test was applied and computed 't' value obtained (5.116) was

found to be statistically significant at 0.05 level of significance which shows that there was significant difference in post test attitude in both experimental and comparison group.

**Table 8:** Comparison and effectiveness of VAT among experimental group and comparison group. N =100

Groups	Mean	Standard deviation	Mean difference	Standard error of mean difference	't' value	df	P value
<b>Experimental group</b>			7.27	1.0	11.74	49	0.00*
Pre test ( n =50)	21.57	2.88					
Post test (n =50)	28.84	3.97					
<b>Comparison group</b>			0.8	0.3	3.60	49	0.09
Pre test ( n =50)	19.04	4.03					
Post test (n = 50)	19.84	3.67					

This table shows the comparison and effectiveness of video assisted teaching programme in both experimental and comparison group. In experimental group by computed the above values shows that the values of mean(28.84) is higher than the mean(21.57) value of the pre test, and the computed t value (11.74) was found to be significant at 0.05 level of

significance. Whereas in comparison group the mean post test value is not much higher than mean pre test value, and computed t value (3.60) was not significant at 0.05 level of significance. Hence proved that the knowledge of nursing students in experimental group was increased after video assisted teaching programme.

**Table 9:** Correlation between knowledge and attitude.

Correlation	Pre Attitude	Post Attitude
Pre Knowledge	0.12 (0.56)	---
Post Knowledge	---	0.08(0.53)

The section describes the correlation between pre-test Knowledge and pre test attitude and other hand correlation between post test knowledge and post test attitude. The r values 0.12 and 0.08 were found to be not significant at 0.05 level of significance and it was concluded that there is no correlation between knowledge and attitude score before and after administration of VAT Programme.

#### 4. Discussion

In the present study all the participants were female. This finding is consistent with the study conducted by wangJ, which shows that in their study (n =348) and 100% of the sample were female<sup>[8]</sup>.

In the present study before video assisted teaching programme maximum of the nursing students (59.2%) were having average knowledge regarding *In vitro* fertilization. This finding is consistent with the study conducted by *Aba Yomi Ajayi* which shows that (57%) of the students were having average knowledge regarding *In vitro* fertilization before intervention<sup>[9]</sup>.

#### 5. Conclusion

This study assessed the level of knowledge and attitude of nursing student regarding *In vitro* Fertilization. The nursing students had inadequate knowledge regarding *In vitro* Fertilization and also some negative attitude towards it, prior to administration of Video Assisted Teaching Programme. After administering the intervention, there was a significant improvement in nursing student's level of knowledge and attitude regarding *In vitro* Fertilization. The study concluded that the Video Assisted Teaching Programme was effective in improving the knowledge and attitude regarding *In vitro* Fertilization among nursing students in selected nursing colleges of Shimla H.P.

#### 6. Limitations

1. Assessment of knowledge and attitude on *In vitro* Fertilization was limited to written response as elicited by structured questionnaire and attitude scale.
2. The sample size was less so the generalization of the findings was not possible.

#### 7. Recommendations

On the basis of study findings, the following recommendations were made:

1. A similar study can be conducted among married couple related to knowledge and attitude regarding *In vitro* Fertilization.
2. A qualitative study can be conducted to explore the level of knowledge and attitude of nursing professionals regarding *In vitro* Fertilization.

#### 8. Acknowledgement

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