A Comparative Study to Assess the Effect of Educational Intervention on Infertility Among Male and Female Degree Students in A Selected Degree College, Tirupati

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***Abstract*—Background: Nowadays, infertility is considered as a social concern which can lead to the couples' psychological imbalance, relationship disturbance and divorce. Sexual satisfaction is mainly affected by the consequences of infertility, such as decrease of self-esteem, depression, anxiety, and sexual relationship with failure in reproduction. The aim of the study was to assess the effectiveness of planned teaching programme on knowledge regarding Nipah virus infection and its prevention among nursing students in selected Government nursing schools of Tirupati.**

Objectives:

1. **To determine the effectiveness of educational intervention on infertility among male and female degree students by comparing pre and post-test scores.**
2. **To compare the post-test knowledge, attitude and knowledge on practices scores on infertility of male and female degree students**
3. **To determine the association between pre & post-test scores on infertility among degree students and their demographic variables.**

Methods: This study had made use of evaluative approach, with pre-Experimental, one group Pre-test and Post-test design for assessing the effect of educational intervention. The setting of the study was Emerald's Degree College, Tirupati. A Sample of 100-degree students (50 male and 50 female) selected by using probability s3ampling technique simple random sampling (lottery method). Self-administered questionnaire on knowledge, attitude and practices checklist was developed. Questionnaire and structured teaching programme were validated by ten experts and reliability was determined. The pre-test data were collected from degree students by self-administered questionnaire and educational intervention was imparted on the same day. Post-test was conducted after a period of one week by using same questionnaire.

Results: Results also shows that the level of knowledge scores of Female students were significantly higher than males, Female and male students had moderate attitude and Males had significantly higher practices than females.

There was significant difference between pre and post-test knowledge scores regarding infertility among male and female degree students. Results also shows that the level of knowledge scores of Female students was significantly higher than males, Female and male students had moderate attitude and Males had significantly higher practices than females.

Conclusions: The findings of the present study showed that there was significant difference between pre-test and post-test knowledge, attitude, knowledge on practices scores of female and male degree students on infertility.

***Index Terms*—Keywords: Infertility, fertility methods, Knowledge, Comparision**

I. INTRODUCTION

Infertility is a disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse. Infertility may occur due to male, female or unexplained factors. Some causes of infertility are preventable. Treatment of infertility often involves In-vitro fertilization (IVF) and other types of medically assisted reproduction.1Infertility is a widespread issue that impacts both men and women. In the United States, about 1 in every 5 women aged 15 to 49 experience primary infertility, while roughly 1 in 20 women face

challenges with secondary infertility. Globally, an estimated 48 million couples are affected by infertility.2, Infertility is a medical condition that can cause psychological, physical, mental, spiritual, and medical detriments to the patient. The unique quality of this medical condition involves affecting both the patient and the patient's partner as a couple.4Infertility can result from factors that affect either one partner or both. Several risk factors have been identified that may contribute to difficulties in conceiving.5One of the most significant factors is age; fertility in women typically declines in the late 30s and 40s, while in men, fertility may begin to decline around the age of 50.6Eating disorders, such as anorexia nervosa and bulimia, can disrupt normal hormonal function and interfere with ovulation or sperm production.7Lifestyle choices also play a role excessive alcohol intake, smoking, and substance abuse can negatively impact reproductive health. In fact, tobacco use is associated with 13% to 15% of infertility cases. Environmental exposures, such as contact with toxic substances like pesticides, lead, or industrial chemicals, may also harm reproductive organs or alter hormone levels. Over-exercising or engaging in intense physical activity can affect hormone balance, particularly in women.8,9 Treatments such as radiation therapy or chemotherapy may damage reproductive tissues and affect fertility in both men and women.10Infections, especially sexually transmitted infections (STIs), can lead to complications like pelvic inflammatory disease or scarring in the reproductive tract. Weight extremes, including obesity and being underweight, are also known to disrupt hormonal regulation and impair reproductive function.11Additionally, abnormalities in the brain's hormone-regulating canters such as the hypothalamus or pituitary gland can interfere with signals needed for normal ovulation or sperm development. Chronic illnesses and long-term medical conditions can further complicate fertility by affecting hormonal balance or reproductive organ function.12

During the clinical posting researcher's observation on increasing prevalence of infertility and lack of awareness among reproductive group population made to think on educating the youth (male and female) population is a solution to the existing problem. By assessing the knowledge, attitude and practices related to infertility and imparting knowledge on infertility may reduce the rate of infertility in future. As a sample of study, the researcher decided to observe the effect of education on infertility and selected a study on the impact of educational intervention on improving knowledge regarding infertility, among degree students.

II. MATERIALS AND METHODS

This study was carried out in Nursing college of Tirupati district, the target population of this study consisted of nursing students who met the inclusion criteria like Students who are studying in selected Nursing School, who are available during the data collection time. The target population of this study consisted of 50 nursing students.

Sample size: Among the 224 male and 238 female students of third year a total of 100 (50 male and 50 female) students who fulfilled the inclusion criteria and randomly selected from the records were the sample of the present study.

III. TOOLS FOR DATA COLLECTION

Based on extensive review of research and non-research literature, opinion of experts, professional experience through postings in the hospital wards of the investigator the areas of content for educational intervention and questionnaire for data collection were developed. According to the objectives of the study the tool consists of the following sections.

Knowledge Questionnaire on Infertility:

Section-I

Demographic data of the sample:

It consists of age, religion, year of the study, educational status of the parents & occupation of the parents, type of family, family income per month in rupees & source of information.

Section-II

Knowledge questionnaire on infertility:

It consists of 14 questions with three and more options. Each right option carries one score, with a total score of 22. Based on quartile deviation the scores were divided into average, moderate and high knowledge on infertility.

Section-III

Attitude scale on infertility:

It consists of 5point scale with 14 statements on

infertility, the total score of 80 to measure the attitude on infertility with strongly agree, agree, uncertain, disagree & strongly disagree on the attitude statements of infertility. Based on quartile deviation the scores were divided into high, moderate and average attitude on infertility.

Section-IV
Practices Checklist on Infertility:
It consists of 14 statements with yes or no responses on 2 points scale & the total score was
14. Based on quartile deviation the scores were divided into high, moderate and average, practice on infertility.

IV. EDUCATIONAL INTERVENTION

An educational intervention was developed to enhance the knowledge scores of male and female degree students on infertility.
The teaching programme was organized under the following headings:

- Introduction on infertility
- Definition of infertility
- Types of infertility
- Male factors of infertility
- Female factors of infertility
- Diagnosis and Treatment of infertility
- Prevention of infertility
- Counselling on infertility

V. DATA COLLECTION PROCEDURE

After obtaining permission from the authorities of Emerald's degree college, Tirupati. The information regarding the need and importance of the study was explained to obtain informed consent from selected 100 (50 male and 50 female) students who were selected randomly from the records according to the inclusion criteria of the study.
After clarifying the doubts of the participants, the investigator administered the structured questionnaire which contains demographic variables, knowledge questionnaire to assess the level of knowledge on infertility, attitude scale and practices checklist on infertility. Educational intervention was imparted to the male and female groups separately for 45 minutes each with appropriate audio-visual aids. After one week of duration post-test was administered. Collected data were tabulated and submitted for the statistical analysis.

VI. RESULTS AND DISCUSSION

The analysis and interpretation of data collected from 100degree students (50 male and 50 female) of Emerald's Degree College Tripathi with the help of descriptive and inferential statistics. Among 50 female students' majority 36% were in the age of 19, 36% were 20 years, whereas the least 12% were in the age group of 21 years and 16% were in age group of 22 years. Among 50 male students' majority 36% were in the age of 19 years, 34% were in the age of 20 years,16% were in the age group of 21 years and only14% were in the age group of 22 years. Regarding year of study female student's majority 92% were third year students whereas the least 6% were first years and 2% were second year students. Among male students 94% were third year students, 4% were first years and only 2% were second year students.

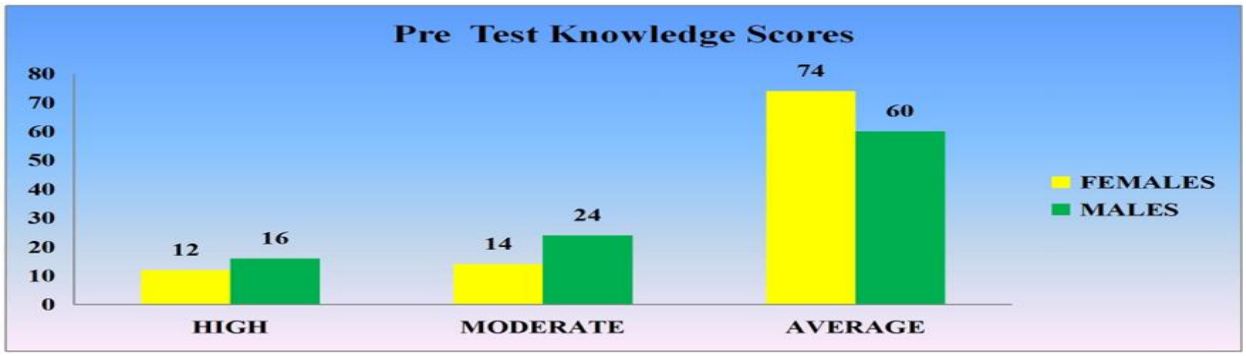

Fig 1: Frequency And Percentage Distribution on Level of Pre Test Knowledge Scores Among Female and Male Degree Students

The above Fig:1 shows the Pre Test knowledge scores of females reveals that majority 74% (34) had average knowledge, 14% (7) had moderate and only12% (6) had high knowledge scores whereas among males 60% (30) had average knowledge 24% (12) had moderate and only 16% (8) had high knowledge scores.

Table 1: Frequency and Percentage distribution of Female and Male Degree students based on their pre test level of Attitude scores (n=50)

Level of Attitude	FEMALES		MALES		't' test
	Frequency(f)	Percentage(%)	Frequency(f)	Percentage (%)	t=1.79 p=0.07
HIGH	11	22	10	20	
MODERATE	25	50	17	34	
AVERAGE	14	28	23	46	
TOTAL	50	100	50	100	

The above table shows Pre Test level of attitude among female and male reveals that among females' majority 50% (25) had moderate, 28% (14) had average attitude scores and only 22% (11) had high attitude scores whereas in males 46% (23) had average 34% (17) had moderate and only 20% (10) had high attitude scores.

VII. LEVEL OF PRE TEST ATTITUDE SCORES

Table 2: Frequency and Percentage distribution of female and male degree students based on their level of pretest Knowledge on Practices scores (n=50)

Level of knowledge on Practices	FEMALE STUDENTS		MALE STUDENTS		't' value
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)	t=1.18 P=0.1
HIGH	4	8	3	6	
MODERATE	21	42	35	70	
AVERAGE	25	50	12	24	
TOTAL	50	100	50	100	

The above table shows that the Pre Test level of knowledge on practices reveals that among females 50% (25) had average knowledge on practices, 42% (21) had moderate and only 8% (4) had high knowledge scores on practices whereas in males 70% (35) had moderate, 24% had average and only 6% (3) had high knowledge scores on practices.

Table 3: Frequency and Percentage distribution of female and male degree students based on their level of Post Test knowledge scores (n=50)

Level of Knowledge	FEMALES		MALES		't'-value
	Frequency(f)	Percentage (%)	Frequency(f)	Percentage (%)	t=2.75 p=0.01
HIGH	27	54	34	68	
MODERATE	15	30	10	20	
AVERAGE	8	16	6	12	
TOTAL	50	100	50	100	

The above table shows the Post Test knowledge scores reveals that among female's majority 54% (27) had high, 30% (15) had moderate and only16% (8) had average scores whereas among males 68% (34) had high,20% (10) had moderate and only12% (6) had average knowledge scores.

Table 4: Frequency and Percentage distribution of female and male degree students based on their level of Post Test attitude scores (n=50)

Level of Attitude	FEMALES		MALES		't' value
	Frequency(f)	Percentage (%)	Frequency(f)	Percentage (%)	t=0.47 p=0.3
HIGH	28	56	29	58	
MODERATE	18	36	17	34	
AVERAGE	4	8	4	8	
TOTAL	50	100	50	100	

The above table shows the Post Test level of attitude scores reveals that among females 56% (28) had high attitude scores, 36% (18) had moderate and only 8% (4) had average attitude scores whereas among males 58% (29) had high, 34% (17) had moderate and only 8% (4) had average attitude scores.

Table 5: Frequency and Percentage distribution of female and male degree students based on their level of Post Test knowledge on Practices scores (n=50)

Level of Practice	FEMALES		MALES		t -value
	Frequency(f)	Percentage (%)	Frequency(f)	Percentage (%)	t=1.29 p=0.2
HIGH	23	46	10	20	
MODERATE	20	40	38	76	
AVERAGE	7	14	2	4	
TOTAL	50	100	50	100	

The above table shows the Post Test level of knowledge on practices scores among females reveal that 46% (23) had high,40% (20) had moderate and only 14% (7) had average knowledge on practices scores whereas males 76% (38) had moderate, 20% (10) had high and only 4% (2) had average knowledge on practices.

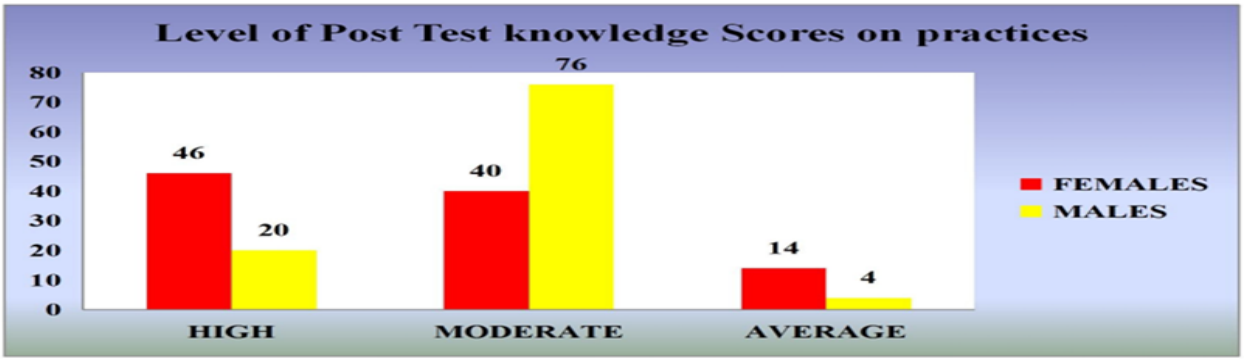

Fig 2: Frequency And Percentage Distribution of Female and Male Degree Students Based on Their Level of Post Test Knowledge on Practices Scores

Association between socio demographic variables and level of knowledge scores on infertility among female students: There was significant association between level of knowledge scores on infertility among female students and their demographic variables like age in years and religion at 0.01 and 0.05 levels of significance whereas the other variables such as year of study, educational status of mother, occupation of mother, occupation of father, type of family, Total family income per month in rupees and source of information were not showed significant association.

Association between socio demographic variables and level of Attitude scores of female degree students: There was significant association between level of

attitude scores on infertility among female students and their demographic variables like age in years, total family income per month in rupees, area of living, source of information, at 0.05 level and religion was significant at 0.01 level where as the other variables as year of the study, education of mother, occupation of mother, occupation of father and type of family had no significant association.

Association between socio demographic variables and level of knowledge on Practices scores on infertility among female degree students: there was significant association between level of knowledge on practices scores regarding infertility among female with demographic variables like religion, year of study, occupation of the mother, occupation of the father and Source of Information were significant at 0.05 level of significance whereas the other variables as age in years, education of the mother, total family income per month in rupees, type of family and area of living were not showed significant relationship.

Association between socio demographic variables and level of knowledge scores on infertility among male degree students: there was significant association between level of knowledge scores regarding infertility among male degree students with demographic variables such as religion, type of family, source of information at 0.05 level of significance whereas year of study, total family income per month in rupees at 0.01 remaining variables as age in years, year of study, education of mother, occupation of mother, occupation of father and area of living not showed any significant relationship.

Association between socio demographic variables and level of Attitude scores on infertility among male students: There was significant association on level of attitude scores regarding infertility among male students with their demographic variables like age in years, educational status of mother, source of information were significant at 0.05 level of significance whereas the other remaining variables as religion, year of study, occupation of mother, occupation of father, type of family, total family income in rupees per month and area of living not showed any significant relationship.

Association between socio demographic variables and level of knowledge on Practices scores on infertility among male students: there was significant association on level of knowledge on practices on infertility among male students with their demographic variables like religion, total family income per month in rupees, source of information was significant at 0.05 level and area of living at 0.01 level of significance. Whereas the other variables as age in years, year of study, educational status of mother, occupation of mother, occupation of father and type of family not showed any significant relationship.

Limitations: The limited sample size places a limitation on the generalization of the study findings.

- Based on the sample availability, teaching program was scheduled to deliver in one

(1) session which could give a chance of lecture cum discussion method.

- Due to academic schedule majority of the students were on vacation and different year of study students were not been added in study project equally

Conflict of Interest: The authors confirm that they have no conflicts of interest for this study.

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