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"Effectiveness Of Planned Teaching Programme On Knowledge Regarding Assisted Reproductive Technology (ART) Among Final Year Nursing Students."

Sudha Lal[1] , Sanasam Birjeni Devi[2]

Department of Nursing, Bareilly International University, UttarPradesh-243006, INDIA E-mail: sudhapdanu@gmail.com

Every couple wishes of having a child because they know it will brighten their lives and offer them with the immense joy of being a lucky parent. Being a parent is a basic human urge. Every person has the choice of developing and nurture their own children. Anger, sadness, worry, marital problems, and a sense of worthlessness are all connected to the stress of being incapable to meet the desire for children.[1]

Infertility is when women cannot conceive after a period of regular sexual intercourse without the use of birth control. According to WHO, "Infertility is the inability to conceive a child. In recent years, advancements in medical science have provided new avenues for individuals and couples struggling with infertility to achieve parenthood. Assisted Reproductive Technology (ART) has emerged as a groundbreaking solution, offering a range of interventions to facilitate conception.

OBJECTIVES

1. To determine the level of knowledge regarding assisted reproductive technology among final year nursing students.
2. To assess effectiveness of planned teaching programme on assisted reproductive technology among final year nursing students.
3. To find out association between pretest knowledge score with their selected demographic variable.

DESIGN: Quasi Experimental one group pretest post-test design

[1] Jasmi Manu, Osheen et. al. Effectiveness of Planned Teaching Programme on Knowledge Regarding Assisted Reproductive Technology among GNM 3rd Year Students. Recent Research on Management, Applied Sciences and Technology. 10th February 2022; 26 (3):236-40.

SETTING: Rohilkhand College/School of Nursing, Bareilly, U.P.

PARTICIPANTS: 80 final year nursing students
SAMPLING TECHNIQUE: Purposive sampling technique.
INTERVENTION: Planned Teaching Programme.

RESULT

In Experimental group, level of knowledge regarding assisted reproductive technology among final year nursing students & it depicts that in pretest, majority of students 39(48.7%) had inadequate knowledge, 36(45%) had moderate knowledge and 05(6.3%) had adequate level of knowledge regarding assisted reproductive techniques. In posttest, majority of the students 65(81.2%) had adequate knowledge whereas 15(18.8%) had moderate level of knowledge regarding assisted reproductive techniques.The comparison of mean and SD of pre and post-test knowledge score it depicts that at pretest the mean knowledge score and SD was 12.33 ± 4.333 whereas mean and SD was 23.43 ± 2.594 in post-test.Dependent't'-test was performed to compare the knowledge score within pretest and posttest. The obtained t & p value was t = 25.611, p =0.0001. The t-test revealed that there was significant difference within pretest and posttest scores.

Chi square test was performed to find the association on knowledge and it shows that there was no significant association between age (χ^2 =2.522; p=0.652), course & year of study (χ^2 =1.683; p=0.403) and religion (χ^2 =11.506; p=0.071). Whereas there was significant association between gender (χ^2 =9.374; p=0.010), previous knowledge regarding assisted reproductive technique (χ^2 =14.842; p=0.002) and sources of information regarding assisted reproductive technique (χ^2 =36.288; p=0.0001).

CONCLUSION

The study concluded that after the administration of planned teaching programme; most of final year nursing student had adequate knowledge regarding assisted reproductive technology. The 't' test which was computed between pre-test and post-test knowledge score indicate a true gain knowledge. Hence, it was concluded that planned teaching programme was effective as method to improve knowledge among final year nursing students regarding assisted reproductive technology.

Keywords: planned teaching , knowledge, assisted reproductive technology(ART), Effective.

INTRODUCTION

Being a parent is a basic human urge. Every person has the choice of developing and nurture their own children. Anger, sadness, worry, marital problems, and a sense of worthlessness are all connected to the stress of being incapable to meet the desire for children. In addition, partners may experience increased stress during conception, ironically acquiring sexual diseases, social isolation, and a host of other intellectual problems.

Infertility is when women cannot conceive after a period of regular sexual intercourse without the use of birth control. According to WHO, "Infertility is the inability to conceive a child. A couple may be considered infertile if after 2 years of regular sexual intercourse without contraception, the woman has not become pregnant and there is no other reason, such as breastfeeding, or postpartum amenorrhoea". In recent years, advancements in medical science have provided new avenues for individuals and couples struggling with infertility to achieve parenthood. Assisted Reproductive Technology (ART) has emerged as a groundbreaking

solution, offering a range of interventions to facilitate conception. However, while ART procedures offer promising outcomes, their success depends not only on technological sophistication but also on the competence and understanding of healthcare professionals involved in their delivery. [2]

According to this definition given by CDC, assisted reproductive technologies (ART) include all fertility treatments in which either eggs or embryos are handled. In general, ART procedures involve surgically removing eggs from a woman's ovaries, combining them with sperm in the laboratory, and returning them to the woman's body or donating them to another woman. They do NOT include treatments in which only sperm are handled (i.e., intrauterine—or artificial—insemination) or procedures in which a woman takes medicine only to stimulate egg production without the intention of having eggs retrieved.[3]

According to National Library of Medicine (NIH) assisted reproductive technologies (ART) are used to aid in achieving pregnancy conception in individuals who are having difficulty doing so spontaneously. This article reviews current assisted reproductive technology techniques, including indications for use, recommended techniques, common complications, and the importance of a coordinated inter professional team in the reproductive medicine field.

"Each assisted reproductive technology (ART) cycle consists of various stages, each scheduled within a four to six-week timeframe. Below is an outline of the in vitro fertilization (IVF) process, which begins the month prior to the actual ART cycle. An IVF cycle typically involves administration of medications to stimulate the growth of multiple eggs, retrieval of eggs from the ovary or ovaries, fertilization of eggs with sperm, cultivation of any resulting

1. [2] World Health Organization (WHO). International Classification of Diseases, 11th Revision (ICD-11) Geneva: WHO 2018.

[3] National Center for Chronic Disease Prevention and Health Promotion, Division of Reproductive Health October 8, 2019.Available at: https://www.cdc.gov/art/whatis.html.

fertilized eggs (embryos), transfer of one or more embryos into the uterus and Hormonal support to prepare and maintain the uterine lining for pregnancy."[4]

Although, the birth of the first child could be an accident that poses crisis but infertility is considered one of the critical issues in infertile couple's lives.1 About 60 to 168 million people in the world will experience some forms of infertility during their reproductive period. Infertility is a medical problem that affected nearly one out of every six couples. Pregnancy is a unique, exciting and often joyous time in a woman's life, as it highlights the woman's amazing, creative and nurturing powers while providing bridge to the future.[5]

MATERIALS & METHODS

Research approach: The research approach chosen for the study was Quantitative research approach.

Research design: The research design adopted for the present study was Quasi experimental research design (one group pretest posttest design).

Setting of the study: The study was conducted in Rohilkhand College/School of Nursing, Bareilly, U.P.

Sample size: 80 students were selected for the study.

Sampling technique: Non- probability purposive sampling technique was used to select the sample from the population.

Data-collection: After the eligible subjects were identified the purpose of the study was explained and informed written consent was obtained from the final year nursing students who met the inclusive criteria. Demographic data and pretest was administered on the first day to

2. [4] Meaghan Jain, Manvinder Singh. Assisted Reproductive Technology (ART) Techniques. National Library of Medicine. June 7, 2023; Available at:https://www.ncbi.nlm.nih.gov/books/NBK576409/.

3. [5] SART, Society for Assisted Reproductive Technology, 1996 - 2024 SART step by step guide Available at: https://www.sart.org/patients/a-patients-guide-to-assisted-reproductive-technology/general-information/art-step-by-step-guide/

the final year nursing students. Planned teaching programme on assisted reproductive technology was given to all the students on the same day. The post-test had been taken after few days of pre-test.

Data Analysis: The analysis was planned based on objectives and hypotheses. Both descriptive and inferential statistics were planned to be used for data analysis.

- **Paired 't' test:** Paired t-test was used to assess the effectiveness of planned teaching programme on assisted reproductive technology .
- **Chi-square test:** Chi-square test was used to check association between level of knowledge regarding assisted reproductive technology with their selected demographic variables.

RESULTS

Table No. 1 shows frequency and percentage distribution of demographic variables of study participants & it depicts that age shows majority of the students 47(58.8%) were 20-25 years of age whereas most of the students 66(85.5%) were females. Majority of the students 50(62.5%) were studied in GNM III year and maximum of the students 46(57.5%) were hindu. Most of the students 68(85%) had previous knowledge regarding assisted reproductive technique and less than half of students 38(47.5%) had education programme as a source of information regarding assisted reproductive technique.

Table no. 1: Frequency and percentage distribution of demographic variables of study participants.

S. No.	Demographic variables	Frequency	Percentage (%)
1.	**Age**		
	a) Below 20 years	21	26.3
	b) 20-25 years	47	58.8
	c) Above 25 years	12	15
2.	**Gender**		
	a) Male	14	17.5
	b) Female	66	85.5
3.	**Course & year of study**		
	a) B.Sc. Nursing IV year	30	37.5
	b) G.N.M. III year	50	62.5
4.	**Religion**		
	a) Hindu	46	57.5
	b) Muslim	12	15
	c) Christian	15	18.8
	d) Other	07	8.7

5.	**Previous knowledge regarding assisted reproductive technique** a) Yes b) No	 68 12	 85 15
6.	**Sources of information regarding assisted reproductive technique** a) Friend & family members b) Mass media & printed media c) Educational programme d) Others e) No information	 08 12 38 10 12	 10 15 47.5 12.5 15

1. **To determine the level of knowledge regarding assisted reproductive technology among final year nursing students:** Table no. 2 shows frequency & percentage distribution of pre-test and posttest level of knowledge regarding assisted reproductive technology among final year nursing students & it depicts that in pretest, majority of students 39(48.7%) had inadequate knowledge, 36(45%) had moderate knowledge and 05(6.3%) had adequate level of knowledge regarding assisted reproductive techniques. In posttest, majority of the students 65(81.2%) had adequate knowledge whereas 15(18.8%) had moderate level of knowledge regarding assisted reproductive techniques.

Table no. 2: Frequency & percentage distribution of pre-test & posttest level of knowledge regarding assisted reproductive technology among final year nursing students.

Level of Knowledge	**Scores**	**Pretest**		**Posttest**	
		Frequency	**%**	**Frequency**	**%**
Inadequate	10 & below	39	48.7	00	00
Moderate	11 to 20	36	45	15	18.8
Adequate	21 & above	05	6.3	65	81.2

Maximum score=30

2.To assess effectiveness of planned teaching programme on assisted reproductive technology among final year nursing students: Table no. 2 shows comparison of mean and SD of pre and post-test knowledge score of final year nursing students regarding assisted reproductive technology & it depicts that at pretest the mean knowledge score and SD was 12.33 ± 4.333 whereas mean and SD was 23.43 ± 2.594 in post-test.

Dependent't'-test was performed to compare the knowledge score within pretest and posttest. The obtained t & p value was t = 25.611, p =0.0001. The t-test revealed that there was significant difference within pretest and posttest scores.

Hence the null hypothesis was rejected and research hypothesis was accepted. Thus it interpret that administration of planned teaching programme was found to be effective in improving the level of knowledge at posttest among final year nursing students.

Table no. 3: Comparison of mean and SD of pre and post-test knowledge score of final year nursing students regarding assisted reproductive technology.

N=80

Level of Knowledge	**Mean**	**SD**	**df**	**Paired 't' value**	**p-value**
Pretest	12.33	4.333	79	25.611	**0.0001**
Post test	23.43	2.594			

Dependent t- test

t_{79}= 1.664 at p<0.05 level of significance, *significant

3.To find out association between pretest knowledge score with their selected demographic variable: Table no. depicts the description about association between pre-test level of knowledge and demographic variables among final year nursing students regarding assisted reproductive technology. Chi square test was performed to find the association on knowledge of assisted reproductive technology among final year nursing students with their selected demographic variables. And it shows that there was no significant association between age (χ^2 =2.522; p=0.652), course & year of study (χ^2 =1.683; p=0.403) and religion (χ^2 =11.506; p=0.071). Whereas there was significant association between gender (χ^2 =9.374; p=0.010), previous knowledge regarding assisted reproductive technique (χ^2 =14.842; p=0.002) and sources of information regarding assisted reproductive technique (χ^2 =36.288; p=0.0001).

Hence the null hypothesis was rejected and research hypothesis was accepted. Thus it interpret that demographic variables did not have any influence on knowledge of final year nursing students regarding assisted reproductive technique except gender, previous knowledge regarding assisted reproductive technique and sources of information regarding assisted reproductive technique.

Table no.4: Frequency and percentage distribution of demographic variables of study participants.

S.	**Demographic**	**Level of knowledge**	**Chi-**	**df**	**P**

N.	variables	Adequate	Moderate	Inadequate	square		value
1.	**Age** a) Below 20 years b) 20-25 years Above 25 years	01 04 00	08 23 05	12 20 07	2.522	04	0.652
2.	**Gender** a) Male b) Female	00 05	02 34	12 27	9.374	02	**0.010**
3.	**Course & year of study** a) B.Sc. Nursing IV year b) G.N.M. III year	01 04	16 20	13 26	1.683	02	0.403
4.	**Religion** a) Hindu b) Muslim c) Christian d) Other	02 01 01 01	20 02 08 06	24 09 06 00	11.506	06	0.071
1.	**Sources of information regarding assisted reproductive technique** a) Friend & family members b) Mass media & printed media c) Educational programme d) Others e) No information	00 01 03 01 00	00 03 27 06 00	08 08 08 03 12	36.288	08	**0.0001**

df_2=5.99, df_4=9.48 df_6= 12.59, df_8= 15.50 at p<0.05 level of significance

DISCUSSION

The study results were analysed and discussed in detail in relation to the objectives as follows:

OBJECTIVE 1: Finding related to frequency & percentage distribution of pre-test & posttest level of knowledge regarding assisted reproductive technology among final year nursing students: The study result shows that in pretest score majority of students 39(48.7%) had inadequate knowledge, 36(45%) had moderate knowledge and 05(6.3%) had adequate level of knowledge regarding assisted reproductive techniques. In posttest, majority of the students 65(81.2%) had adequate knowledge whereas 15(18.8%) had moderate level of knowledge regarding assisted reproductive techniques.

This finding was supported by **Marwa Magdy Abd- Ellatif (2024)** on Effect of Educational Guideline on Nurses' Performance Regarding Assisted Reproductive Technology shows that 94.2% of the studied nurses were aged between 20 - 30 years; with the Mean± SD of age is 34.77± 5.18 years. As regard to education level, 40.8% of them have technical institute of nursing. Also, 39.2% of them have < 5 years of experience with the Mean± SD is 8.41±4.05 years. Moreover, 53.8% of them live at rural areas.

OBJECTIVE 2: Analysis of Comparison of mean and SD of pre and post-test knowledge score of final year nursing students regarding assisted reproductive technology: In the present study obtained mean knowledge score and SD was 12.33 ± 4.333 in pretest whereas mean and SD was 23.43 ± 2.594 in post-test. The obtained t & p value was t = 25.611, p =0.0001. The t-test revealed that there was significant difference within pretest and posttest scores.

This findings was supported by **Dr. Krishna Chauhan (2021)** on assess the effectiveness of video assisted teaching on knowledge and attitude regarding In vitro Fertilization among nursing students shows that 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 0.001.

OBJECTIVE 3: Analysis of Association between pre-test level of knowledge and demographic variables among final year nursing students regarding assisted reproductive technology: The study finding shows that there was no significant association between age, course & year of study and religion whereas there was significant association between gender, previous knowledge regarding assisted reproductive technique and sources of information regarding assisted reproductive technique.

This findings was supported by **Dr. T. C. Suguna (2019)** on evaluate the effectiveness of video assisted teaching programme on knowledge regarding Assisted Reproductive Technology among the infertile women shows that there was no significant association between knowledge on ART among infertile women and demographic variables of samples such as age, education, occupation, religion, type of family, family's monthly income, and source of information.

CONCLUSION

This study concluded that after the administration of planned teaching programme; majority of final year nursing students had adequate knowledge regarding assisted reproductive technology. The 't' test which was computed between pre-test and post-test knowledge score, indicates a true gain knowledge. Hence, it was concluded that planned teaching programme was effective as method to improve knowledge among final year nursing students regarding assisted reproductive technology.

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