A study to evaluate the effectiveness of educational intervention programme on knowledge regarding assisted reproductive technology among infertile women of selected infertility clinics of Hubballi-Dharwad.

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Abstract: Pregnancy and childbirth is a great event in the life of every human. In the Indian context childbirth is considered the most important & sacred function in the institution of marriage. Today childlessness has become important public health concern. Due to infertility couples face lots of discrepancies in socio-religious activities and may also develop mental health issues. The present study aimed to evaluate the effectiveness of educational intervention programme regarding assisted reproductive technology among infertile women of selected infertility clinics. The objectives of the study were to assess the knowledge and effectiveness of educational intervention programme regarding assisted reproductive technology among infertile women and also to find out an association between pretest knowledge scores of infertile women with their selected demographic variables. Pre-experimental: one group pre-test, post-test design was used in this study. The interview schedule was used to collect the data from 30 infertile women attending infertility clinic using Non probability convenient sampling technique. The data was collected and analyzed in terms of objectives by using descriptive and inferential statistics. The findings of the study revealed that in the pre-test, majority of subjects 22 (73.3%) had average knowledge, 05 (16.7%) had good knowledge and 03 (10%) had poor knowledge. Where as in post-test all 30 (100%) had good knowledge and none of them had average and poor knowledge regarding assisted reproductive technology. There was a significant gain in knowledge of infertile women who were exposed to the educational intervention programme i.e. 30.69%.The study concluded that the post-test knowledge scores of infertile women after administration of Educational intervention programme was significantly higher than the pre-test knowledge scores. There was no statistical association between knowledge scores of infertile women with their socio-demographic variable.

Key words: Assisted reproductive technology, Infertile women, Knowledge, Effectiveness, Educational Intervention Programme.

Introduction

Family is a socially recognized group that forms an emotional connection and serves as an economic unit of society. A family of procreation describes one that is formed through marriage.[1] Marriage is the most frequent vocation & wondrous call to holiness in service to God. It involves a partnership of life and promises of procreation-a child. A child is a dream of every couple as it brings meaning to their life and immense pleasure of having blessed phase-parenthood.[2] Parenthood is a fundamental human need. The very desire for parenthood is a step in direction of creating family. Pregnancy is a unique, exciting & often joyous time in a woman's life, as it highlights the woman's amazing, creative & nurturing powers while providing bridge to the future. But some less unfortunate couples are unable to fulfil their dream of having desired baby because of infertility.[3]According to the world health organization (WHO) infertility, is the inability to conceive after one year of natural, unprotected sexual intercourses.[4] Infertility is affecting 8-10% of couples worldwide and about 60-80 million couples suffer from infertility every year.[5]Management of infertility includes medications and assisted reproductive technology procedures can help the couples to overcome infertility and achieve pregnancy.[6]

Problem of the statement

A study to evaluate the effectiveness of Educational Intervention Programme on knowledge regarding Assisted Reproductive Technology among infertile women of selected infertility clinics of Hubballi-Dharwad

Objectives:

1. To assess the knowledge regarding Assisted Reproductive Technology (ART) among infertile women.
2. To evaluate the effectiveness of educational intervention programme regarding Assisted Reproductive Technology among infertile women.
3. To find out an association between pretest knowledge scores of infertile women with their selected socio demographic variables.

Operational definitions

1. **Effectiveness:** It refers to the extent to which the educational intervention programme has achieved the desired outcome as measured by the gain in knowledge scores.
2. **Educational intervention programme:** It refers to the information provided to the infertile women regarding various assisted reproductive technology.
   It includes the following sections:

- ❖ Introduction to infertility and its treatment modalities.
- ❖ Introduction to assisted reproductive technology.
- ❖ Aim's of assisted reproductive technology.
- ❖ Indications of assisted reproductive technology.
- ❖ Risks associated with assisted reproductive technology.
- ❖ Procedures of assisted reproductive technology.
- ❖ Types of assisted reproductive technology used in infertility treatment.
- ❖ Benefits of assisted reproductive technology.
- ❖ Care of infertile women during assisted reproductive technology treatment.

3. **Knowledge:** It refers to the correct response of the infertile women's on knowledge items regarding assisted reproductive technology.
4. **Assisted reproductive technology:** In this study, assisted reproductive technology is an assemblage of interventions & procedures to achieve pregnancy by, overcoming the obstacles.
5. **Infertile women:** It refers to the female individuals who are in the age group of 25 to 40 years, unable to conceive even after one year of unprotected coitus and attending selected infertility clinics in Hubballi-Dharwad.
6. **Selected infertility clinics:** It refers to infertility clinics of Hubballi- Dharwad.
7. **Socio-demographic variables:** It refers to age, religion, age at menarche, education of women, age at marriage, type of family, occupation of women, Monthly family income duration of Infertility, have you undergone ART before and source of information.

Hypotheses

H_1: The mean post-test knowledge scores of infertile women receiving educational intervention programme on knowledge regarding assisted reproductive technique will be significantly higher than the mean pre-test knowledge scores at 0.05 level of significance.

H_2: There will be a significant association between pre-test knowledge score of infertile women their selected socio-demographic variables at 0.05 level of significance.

Methodology

Research approach: In this study an evaluative approach was used.

Research design: In this study pre-experimental: one group pre-test, post-test design was adopted.

Variables

- **Independent Variable** **:** Educational intervention Programme.
- **Dependent Variable** **:** Knowledge regarding assisted reproductive technology
- **Attribute Variables** **:** Age, religion, age at menarche, education of women, age at marriage, type of family, occupation of women, monthly family incomes, duration of infertility, have you undergone ART before and source of information about ART.

Setting: Aakanksh Fertility Centre, Hubballi.

Population

Population of the present study comprises infertile women.

Target population:

Target population comprises infertile women of Aakanksh fertility centre, Hubballi.

Sample size:

The sample size selected for the present study includes 30 infertile women's of Aakanksh fertility centre, Hubballi.

Sampling technique:

In the present study, the researcher selected samples through Non-probability**;** Convenient sampling technique.

Criteria for selection of samples:

Inclusion Criteria:

Infertile women who were:

- In the age group of 25-40 years.
- Willing to participate in the study.
- Already undergone ART
- Able to understand Kannada.

Exclusion Criteria:

Infertile women who were:

- Not available at the time of data collection.

Description of the tool

The tool consists of structured interview schedule & the following are the sections.

Section I: **Items on socio-demographic data of infertile women with 11 variables:**

Age, religion, age at menarche, education of women, age at marriage, type of the family, occupation of women, monthly family income, duration of infertility, have you undergone ART before and source of information about ART regarding assisted reproductive technology

Section II: **Items on interview schedule:**

This section consists of 42 items for obtaining level of knowledge of infertile women regarding assisted reproductive technology. A score value of one (1) was allotted for each correct response and zero (0) for each incorrect response. Total maximum score limit was 42.

Part 01 : 06 Items on knowledge regarding general information about infertility.

Part 02 : 07 Items on knowledge regarding causes and treatment modalities of infertility.

Part 03 : 04 Items on knowledge regarding ART.

Part 04 : 05 Items on knowledge regarding IVF & ET.

Part 05 : 08 Items on knowledge regarding GIFT.

Part 06 : 04 Items on knowledge regarding ZIFT.

Part 07 : 04 Items on knowledge regarding ICSI.

Part 08 : 04 Items on knowledge regarding outcomes of ART.

Findings of the study:

Table No. 1: Frequency and percentage distribution of subjects according to socio-demographic variables. n=30

Sl. No	Demographic Variable	Frequency (f)	Percentage (%)
01	**Age in Years**		
	a. 25-30	14	46.7
	b. 30-35	14	46.7
	c. 35-40	02	6.6
02	**Religion**		
	a. Hindu	27	90
	b. Muslim	03	10
	c. Christian	00	00
	d. Others	00	00
03	**Age at menarche**		
	a. 10-13 years	07	23.4
	b. 13-16 years	21	70
	c. 16 years & above	02	6.6
04	**Education of women**		
	a. No formal education	00	00
	b. S.S.L.C & below	05	16.7
	c. PUC	07	23.3
	d. Graduation & above	18	60
05	**Age at marriage**		
	a. 18-22 years	09	30
	b. 22-26 years	17	56.6
	c. 26-30 years	02	6.7
	d. 30-34 years	02	6.7
06	**Type of the family**		
	a. Joint	21	70
	b. Nuclear	09	30
	c. Extended	00	00
07	**Occupation of women**		
	a. Coolie or daily wages	00	00
	b. House wife	21	70
	c. Private employee	05	16.7
	d. Government employee	04	13.3
	e. Self employed	00	00

08	**Monthly family income(in rupees)**		
	a. 20,000-25,000	14	46.6
	b. 25,000-30,000	07	23.4
	c. 30,000-35,000	02	6.6
	d. 35,000 & above	07	23.4
09	**Duration of infertility**		
	a. 1-3 years	08	26.7
	b. 3-5 years	08	26.7
	c. 5-7 years	05	16.6
	d. 7 years & above	09	30
10	**Have you undergone ART before**		
	a. Yes	04	13.3
	b. No	26	86.7
11	**Sources of information about ART**		
	a. Print media	02	6.6
	b. Electronic media	00	00
	c. Peer group & social circle	15	50
	d. Health professionals	13	43.4

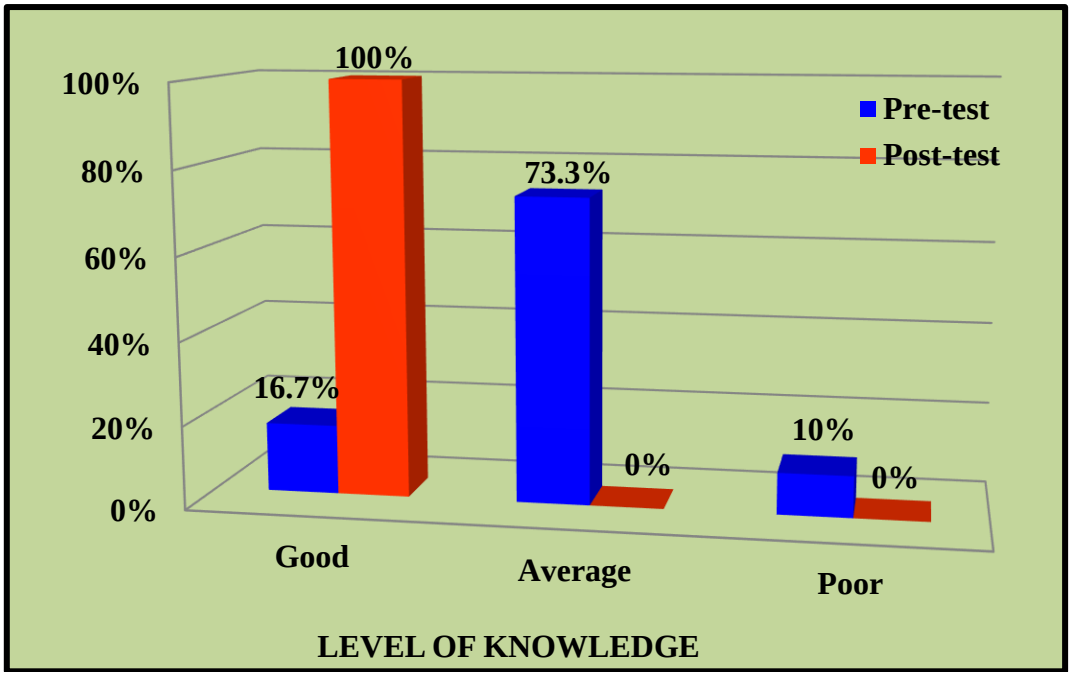
Table No.1 reveals that

- Majority of the subjects 14 (46.7%) were in the age group of 25-30 years, 14 (46.7%) were in the age group of 30-35years & 02(6.6%) were belongs to 35-40 years.
- Majority of the subjects 27 (90%) were Hindu religion and 03 (10%) were Muslim, whereas were no one belongs to Christian and Other religion.
- With regard to the age at menarche 21(70%) were belongs to 13-16 years, 07 (23.4%) were belongs to10-13 years & 02(6.6%) were belongs to 16 years & above.
- Majority of the women education 18 (60%) were graduation & above, 07(23.3%) were PUC, 05(16.7%) were completed SSLC, whereas no one belongs to the group of no formal education.
- Majority of the subjects age at marriage 17 (56.6%) were belongs to 22-26 years, 09(30%) were belongs to 18-22 years, 02(6.7%) were belongs to 26-30years & 02(6.7%) were belongs to 30-34 years.
- With regard to type of family, majority of the subjects 21 (70%) belongs to joint family, 09(30%) were belongs to nuclear family, whereas no one belongs to the extended family.
- With regards to occupation of women, majority of subjects 21(70%) were house wife, 05(16.7%) were private employee, 04(13.3%) were government employee.
- With regards to monthly family income 14 (46.6%) subjects have Rs.20, 000-25,000, 07(23.4%) subjects have Rs.25, 000-30,000, 07(23.4%) subjects have Rs.30,000-35,000 & 02(6.6%) subjects have Rs.35,000 & above.
- Majority of subjects 09 (30%) has 7 years & above of duration of infertility, 08 (26.7%) subjects has 1-3 years, 08 (26.7%) subjects has 3-5 years & 05(16.6%) subject has 5-7 years of infertility.
- With regard to history of ART 26 (86.7%) subjects has not previously undergone ART & 04 (13.3%) subjects has previously undergone ART.
- Maximum subjects 15(50%) source of information regarding assisted reproductive technology was peer group & social circle, 13 (43.4%) from health professionals, 02(6.6%) from print media & whereas no one is from electronic media.

Table No. 2: Frequency and percentage distribution of knowledge scores of subjects regarding Assisted Reproductive Technology. n=30

Level of knowledge	Pre-test		Post-test	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Good (above 24)	05	16.7	30	100
Average (24 to 16)	22	73.3	0	0
Poor (below 16)	03	10	0	0

Table No. 2 reveals that, distribution of level of knowledge of infertile women regarding the assisted reproductive technology during pre-test and post-test. Most of the subjects in the pre-test 22 (73.3%) had average knowledge, 05 (16.7%) had good knowledge and 3 (10%) had poor knowledge. Whereas, in post-test after Educational intervention programme, 30 (100%) had good knowledge.



Graph 1: The Column graph represents percentage distribution of subjects according to their level of knowledge scores in pre-test and post-test.

Table no 3: Mean, Median, Mode, Standard Deviation and Range of knowledge scores of subjects regarding Assisted Reproductive Technology.

n=30

Area of analysis	Mean	Median	Mode	Standard deviation	Range
Pre-test	20.03	20.5	21.4	3.57	15
Post-test	32.9	34	36.2	4.03	14
Difference	12.8	12.6	14.8	0.46	01

Table No. 3 reveals that, the mean pre-test knowledge score was 20.03, median 20.5, mode 21.4, standard deviation 3.57 and range 15. Whereas the mean post-test, knowledge score was 32.9, median 34, mode 36.2, standard deviation 4.03 and range 14. The overall difference in mean knowledge score was 12.8, median 12.6, mode 14.8 standard deviation 0.46 & range 01.

Table No 4: Mean difference (*d*□), Standard Error of difference (SE*d*□) and paired't' values of knowledge score of subjects regarding assisted reproductive technology.

n=30

Mean Difference (*d*□)	Standard error of difference (SE*d*□)	Paired 't' values	
		Calculated	Tabulated
12.3	0.44	27.95*	2.043

***** Significant at 0.05 level of significance

Table No. 4 Reveals that the calculated "paired t" value (t_{cal}= 27.95*) was greater than the tabulated value (t_{tab}= 2.043). Hence, H_1 was accepted. This indicates that the gain in knowledge score was statistically significant at 0.05 level of significance. Therefore, the Educational intervention programme was effective in improving knowledge of subjects.

Table No.5: Association Between pre-test knowledge scores of subjects and selected socio-demographic variables.

n=30

Sl. No	Demographic Variable	Good	Average	Poor	Chi Square		
					Cal	Tab	Df
1)	**Age in Years** a. 25-30 b. 30-35 c. 35-40	 02 02 01	 11 10 01	 01 02 00	2.42	9.48	04

2)	**Religion** a. Hindu b. Muslim c. Christian d. Others	 04 01 00 00	 20 02 00 00	 03 00 00 00	0.89	12.59	6
3)	**Age at menarche** a. 10-13 years b. 13-16 years c. 16 years & above	 01 03 01	 06 15 01	 00 03 00	2.98	9.48	4
4)	**Education of women** a. Non-formal education b. SSLC & above c. PUC d. Graduation & above	 00 00 00 05	 00 05 06 11	 00 00 01 02	4.91	12.59	06
5)	**Age at marriage** a. 18-22 years b. 22-26 years c. 26-30 years d. 30-34 years	 01 03 01 00	 07 13 00 02	 01 01 01 00	10.19	12.59	06
6)	**Type of family** a. Joint b. Nuclear c. Extended	 02 03 00	 16 06 00	 03 00 00	3.49	9.48	04
7)	**Occupation of women** a. Coolie b. House wife c. Private employee d. Government employee e. Self employed	 00 04 01 00 00	 00 15 03 04 00	 00 02 01 00 00	2.14	15.50	08
8)	**Monthly family income (Rs)** a. 20,000-25,000 b. 25,000-30,000 c. 30,000-35,000 d. 35,000 & above	 00 02 00 03	 12 04 02 04	 02 01 00 00	8.36	12.59	06
9)	**Duration of infertility** a. 1-3 years b. 3-5 years c. 5-7 years d. 7 years & above	 01 02 01 01	 06 05 03 08	 01 01 01 00	2.60	12.59	06
10)	**Have you undergone ART** a. Yes b. No	 00 05	 04 18	 00 03	1.64	5.99	02

11)	**Source of Information** a. Print Media b. Electronic media c. Peer Group & Social circle d. Health Professionals	00 00 03 02	02 00 11 09	00 00 01 02	1.34	12.59	06

Table No.5 Reveals that calculated chi-square value is less than tabulated value in all variables. Hence there was no association between knowledge scores & selected demographic variables thus H_2 was rejected.

Discussion

The present study was undertaken with the aim to evaluate the effectiveness of Educational Intervention Programme on knowledge regarding Assisted Reproductive Technology among infertile women of selected infertility clinics of Hubballi-Dharwad. With regards to the level of knowledge, most of the subjects in the pre-test 22 (73.3%) had average knowledge, 05 (16.7%) had good knowledge and 3 (10%) had poor knowledge. Whereas, in post-test after Educational intervention programme, 30 (100%) had good knowledge regarding assisted reproductive technology. The calculated "paired t" value (t_{cal}= 27.95*) was greater than the tabulated value (t_{tab}= 2.043). Hence, H_1 was accepted. This indicates that the gain in knowledge score was statistically significant at 0.05 levels. Therefore, the Educational intervention programme was effective in improving knowledge of subjects. Findings related to association between pre-test knowledge scores of infertile women and socio demographic variables. The computed chi-square test revealed that there was no statistical association between pre-test knowledge scores of subjects with their socio demographic variables. Hence, H_2 was not accepted.

Recommendations

1. A similar study can be undertaken with a large sample for making a more valid generalization.
2. A descriptive study can be conducted to assess the knowledge & attitude regarding assisted reproductive technology among families of infertile couple.
3. A comparative study can be done between fertile & infertile women regarding knowledge on assisted reproductive technology.
4. A similar study can be replicated in different settings.

Conclusion

- The overall pre-test knowledge scores of infertile women were average.
- The post-test knowledge scores of infertile women after administration of Educational intervention programme was significantly higher than the pre-test knowledge scores.
- Post-test knowledge scores after administration of Educational intervention programme showed significantly improvement in the level of knowledge.
- There was no statistical association between knowledge scores of infertile women with their selected socio-demographic variables.

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