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Effect of nursing interventions like meditation, progressive muscle relaxant exercises, and counselling on lifestyle and diet modification on marital relationship among women undergoing infertility treatment: randomized controlled trial: a pilot study

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ABSTRACT

Background: Infertility has an impact on marital pleasure. Couples who are unhappy in their relationship are also more likely to have various negative psychological, social and physical health issues. Nurses can play a significant role in the management of infertility and its consequences. The recent study aimed to evaluate the effect of nursing interventions on marital relationship among women undergoing infertility treatment.

Methods: By using a systematic sampling technique, 60 infertile women with marital disharmony (30 experimental and 30 control group) were included in the current randomized control trial. After getting their consent relationship assessment scale was used to estimate the marital relationship. The experimental group underwent the nursing intervention (Raja yoga meditation, progressive muscle relaxant exercises, advices on lifestyle and diet modification) for 5 subsequent visits apart from 15 days and the control group underwent standard medical care. Succeeding the intervention after one month's last intervention, the relationship assessment scale was again applied to both groups.

Results: Before the interventions both the groups were homogenous according to mean, SD and chi square values. After applications of dependent t-test, the mean score before and after nursing interventions the mean score was 13.70 SD 3.99 and 18.33 SD 2.89 respectively. The mean difference of marital relationship was 4.633 (t_{29} =10.640, p=0.001). Independent t test was applied which reveals that the mean difference between experimental and control group was 3.867 (t_{58} =4.215, p=0.001) which was statistically highly significant at 0.001 level.

Conclusions: After implementing the nursing intervention, the study's finding showed an improvement in the quality of marital relationship.

Keywords: Effect, Infertility treatment, Nursing intervention, Marital relationship, Women

INTRODUCTION

A child fulfils a person's drive for reproduction and brings human existence to its climax.¹ It is difficult, surprising, and frequently a life changing experience for a

couple that they might not be able to have biological children.² According to WHO, 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.³ 10-15% of the

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population of the country has fertility-related issues, according to the All India Institute of Medical Sciences (AIIMS). That would be close to one in seven persons in a nation with a 1.3 billion population.4 Conflicts in marriage have been connected to infertility.⁵ The effect of infertility on marital relationship may depend on social, psychological and infertility related factors as well as gender.⁶ Females experienced greater unhappiness over time and had stronger emotional investment than males.⁷ Psychological bonding is significantly related to quality of marital relationship. However, when there is infertility in a marital union, the psychological bond between the couple, wanes away, resulting in negative psychological implications, including quarrels and fights in the union.^{6,7} There is limited evidence on how infertility affects marriages in India.8 Infertile women frequently experience domestic violence. Domestic abuse affects 45% of all women, according to the WHO. According to a study on Iranian infertile women, 61.8% of them had experienced domestic abuse at the hands of their partners.⁹ Infertility and divorce rates were discovered to be significantly correlated by researchers. 10,11 The most frequently reported kind of violence was psychological or emotional abuse, which was then followed by physical and sexual abuse. 12 Indian research concurs with this result.13

Numerous methods, including marriage counseling, relationship enrichment techniques, meditation, and others, can help the couple's marital relationships, as described in literature. Some other complementary therapies, such as meditation, progressive muscle relaxant exercises, lifestyle change advice, and nutritional guidance. The goal of these interventions is just to relax the couple and help them manage their negative thoughts. Which will help to improve the relationship between couple. It will assist in strengthening the bond between partners, while dietary recommendations and lifestyle changes will enhance women's health and self-esteem of infertile women. Raja yoga meditation is a unique meditation which provide freedom from anxiety and stress, improve personal relationships, create a sense of well-being, overcome negative habits and mind becomes clearer and more focused. 14,15 Women's relationships with their families and friends, as well as their sexual relationships with their partners, suffer with infertility. It also causes stress. Progressive muscle relaxation is one of the popular techniques for reducing stress. 16 Hence, this study was aimed to assess the effectiveness of nursingintervention on marital relationship among women undergoing infertility treatment.

Objective

The objectives were to assess the marital relationship among women undergoing infertility treatment in the experimental group and control group; to evaluate the effectiveness of nursing intervention among women undergoing infertility treatment in the experimental group.

Hypothesis

 H_0 - There was no significant difference between pre-test and post-test mean score in the level of marital relationship in experimental and control group at p<0.05 level of significance.

 H_1 - There was a significant difference between pre- test and post-test mean score in the level of marital relationship in experimental and control group at p<0.05 level of significance.

METHODS

This pilot randomized controlled study investigates the effectiveness of nursing interventions for infertile women who are receiving treatment from an infertility clinic at a tertiary level hospital and are suffering with marital disharmony. A pilot research study was carried out in Room No.1 of infertility clinic at Sri Guru Ram Das Hospital, Amritsar, Punjab of infertility clinic at Sri Guru Ram Das Hospital, Amritsar, Punjab, which is close to the infertility clinic, from December 2020 to June 2021. This room was designated by the authorities and furnished with all the necessary furnishings (chairs, tables, beds, mats, etc.) The study participants were chosen by systematic random sampling technique. A total of 70 infertile women with complaints of marital disharmony were chosen for the study based on inclusion and exclusion criteria. The experimental group (n=38) and the control group (n=32) were assigned. The subjects were informed of the technique and consent was taken two times before and after assignment of the group. Faceto-face interviews were conducted by the principal investigator to collect the data. The study was feasible in terms of availability of study subjects, data collection and retaining of subjects for intervention.

Inclusion criteria

Women receiving therapy for marital disharmony related to infertility. Women between the age group of 20 to 45 years.

Exclusion criteria

Women who were already exposed to counseling.

Instrument

The tool was constructed in two parts:

Part I: Socio-demographic and obstetrical characteristics was assessed by using the self-constructed tool. Socio-demographic characteristics- It included (7 questions) related to age, educational status, family income, residence, religion, and occupation of husband and wife. Obstetrical characteristics- It included (10 questions) questions related to the age of menarche, duration of the marriage, the flow of menstruation, duration of infertility,

loss of pregnancy, causes of infertility, Types of infertility, history of usage of contraception, history of a previous marriage, history of abdominal or pelvic surgery and BMI.

Part II: Relationship assessment scale (RAS). RAS is having total 7 items with five-point Likert scale i.e. poor-1, sometimes- 2, average- 3, well- 4, extremely well- 5 (note: items 4 and 7 are reverse scored. A=1, B=2, C=3, D=4, E=5). a brief, 7-item self-report questionnaire called the relationship assessment scale (RAS) is used to measure relationship satisfaction. Cronbach's alpha =0.907. A study was conducted on validity and reliability of RAS in Iran. The internal consistency of the RAS was high (Cronbach's alpha =0.82).

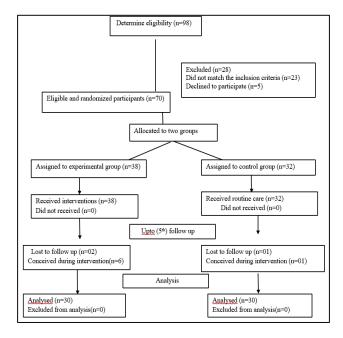


Figure 1: Consort flow diagram of the study.

Interventions

After completing a month of training in progressive muscle relaxation techniques, the researcher was certified by the physiotherapy department of a tertiary care hospital. Additionally, they developed a procedure and got approval from the head of physiotherapy department. researcher Furthermore, the attended seminars, established a procedure, and gained expert validation. She also received certified training in Raja yoga meditation from Brahma Kumaris. The department head of obstetrics and gynecology and a dietitian validated the nutritional and lifestyle recommendations. These interventions were validated by 20 experts from various fields, including 4 heads of departments of obstetrics and gynecology and 1 head of a department of physiotherapy. One dietician, one psychologist, one Brahma Kumari, and other doctorallevel nursing faculty members. The interventions were given over the course of five consecutive visits, whereas the control group just got routine medical care. The intervention took place over the course of four months, every 15 days. Every intervention lasted 30 minutes. They were motivated to do so at least twice a day via daily WhatsApp encouragement.

After a basic introduction and getting to know one another at the first session, it was discussed how marital disharmony and infertility are related. Following that, recommendation for changing one's lifestyle as well as information on the relevance of diet and its benefits in terms of enhancing treatment outcomes were given. For this, the information was given using text based and adaptable educational resources.

In the second session the Jacobson muscle relaxant exercise was then personally demonstrated to each person, and they were told to perform it twice daily.

The third session's emphasis was likewise on the individual. The guided Raja yoga meditation was demonstrated to the study participants while they listened to soothing music.

The fourth session was a group session where there were 2 to 5 subjects per group. Discussed some tips to improve relationship such as think of others as well as yourself. Discover the other person's interests by attempting to put yourself in their position. Take good care of one another. Whenever the other person needs something, be available to help. Be respectful of others. Be serious with your partner. It's a decision you make to be in a relationship. Consciously try to avoid getting angry. Rebuilding the relationship is only made more difficult by bitterness. The relationship gets stronger when the two of you do something enjoyable together. A compliment is beneficial to a person. Search for honest kudos for your partner. These are kind words for some people, but they may also be time and attention a present, a physical touch, or assistance. They were also motivated for practicing life style modifications and dietary instruction consistent.

During the fifth session, the participants were given instructions to engage in exercises and meditation with the proper kind of practice and urge them to do so on a regular basis. The post intervention scores for marital relationship were assessed using the same scale after one month of the fifth nursing interventions.

RESULTS

The obtained data were analyzed by descriptive and inferential statistics like frequency, percentage, mean, standard deviation, t-test, and chi-squared test.

Tables 1 and 2 show the two groups were found homogenous in all socio-demographic as well as obstetrical variables analysed by the chi-squared test.

Table 1: Socio-demographic profile of women with marital disharmony undergoing infertility treatment N=60.

Variables	Group		χ² value	df	P value		
variables	Exp. (n=30) N (%)	χ value	uı	r value			
Age (years)							
≤25	7 (23.3)	8 (26.7)					
26-30	15 (50.0)	13 (43.3)					
31-35	6 (20.0)	8 (26.7)	0.829	3	0.874^{NS}		
>35	2 (6.7)	1 (3.3)					
Mean SD	28.6±4.20	28.53±4.07					
Educational status							
Informal	1 (3.3)	1 (3.3)					
Primary	3 (10.0)	4 (13.3)					
Secondary	9 (30.0) 9 (30.0)		0.481	4	0.965^{NS}		
Senior secondary	9 (30.0)	10 (33.3)					
Graduate and above	8 (26.7)	6 (20.0)					
Family income (Rs./month	n)						
<10000	7 (23.3)	3 (10.0)					
10000-15000	20 (66.7)	25 (83.3)	2.356	2	0.314^{NS}		
15001-20000	3 (10.0)	2 (6.7)					
Habitat							
Rural	19 (63.3)	23 (76.7)	1.270	1	0.260 ^{NS}		
Urban	11 (36.7)	7 (23.3)	1.270	1	0.200		
Religion							
Sikh	24 (80.0)	24 (80.0) 23 (76.7)		1	0.754 ^{NS}		
Hindu	6 (20.0)	7 (23.3)	0.098	1	0.734		
Occupational status of wif	îe -						
Housewife	23 (76.7)	19 (63.3)					
Own business	3 (10.0)	4 (13.3)	1.342	2	0.612^{NS}		
Private employ	4 (13.3)	7 (23.3)					
Occupational status of hus	Occupational status of husband						
Labourer	7 (23.3)	7 (23.3)					
Own business	12 (40.0)	19 (63.3)	5.247	3	0.159 ^{NS}		
Private employee	6 (20.0)	3 (10.0)	3.247	3	0.139		
Government employee	5 (16.7)	1 (3.3)					

Table 2: Obstetrical profile of women with marital disharmony undergoing infertility treatment N=60

** • 11	Group			10	D 1
Variables	Exp. (n=30) N (%)	Ctrl. (n=30) N (%)	χ^2 value	df	P value
Age of menarche (years)					
≤13	13 (43.3)	16 (53.3)	0.601	1	0.438^{NS}
>13	17 (56.7)	14 (46.7)			
Mean SD	13.60±.56	13.40±.62			
Marital relationship (years)					
≤5	16 (53.3)	14 (46.7)	0.504	2	0.842^{NS}
6-10	13 (43.3)	14 (46.7)			
>10	1 (3.3)	2 (6.7)			
Mean SD	5.10±2.54	5.67±2.98			
Menstrual flow					
Normal	23 (76.7)	20 (66.7)	1.685	2	0.510^{NS}
Scanty	5 (16.7)	9 (30.0)			
Heavy	2 (6.7)	1 (3.3)			
Pregnancy lossif					
0	17 (56.7)	20 (66.7)	1.529	2	0.563^{NS}

Continued.

Variables	Group		χ² value	df	P value			
1	5 (16.7)	2 (6.67)						
2	8 (26.7)	8 (26.7)						
Duration of infertility (years)								
≤3	11 (36.7)	11 (36.7)	1.118	2	0.772^{NS}			
4-8	16 (53.3)	18 (60.0)						
>8	3 (10.0)	1 (3.3)						
Mean SD	5.17±2.47	4.70±2.05						
Causes of infertility								
Male factor	0 (0)	1 (3.3)	1.525	2	0.532^{NS}			
FEMALE factor	25 (83.3)	22 (73.3)						
Both	5 (16.7)	7 (23.3)						
Type of infertility								
Primary	19 (63.3)	17 (56.7)	0.278	1	0.598 ^{NS}			
Secondary	11 (36.7)	13 (43.3)						
History of usage of contraception n	nethod*							
No	30	30						
History of previous marriage with	proven fertility*							
No	30	30						
History of abdominal or pelvic surgery								
No	24 (80.)	25 (83.3)	0.111	1	0.739^{NS}			
Yes	6 (20.0)	5 (16.7)						
BMI categories								
18-25	20 (66.7)	22 (73.3)	0.317	1	0.573^{NS}			
>25	10 (33.3)	8 (26.7)						
Mean SD	24.76±2.21	24.64±1.98						

Table 3: Effectiveness of nursing intervention on marital relationship among women undergoing infertility treatment.

Variables	Before intervention		After intervention		■ MD	4 malma	J.C	P value
	Mean	SD	Mean	SD	MID	t value	aı	r value
Marital relationship	13.70	3.99	18.33	2.89	4.633	10.640	29	0.001**

Table 4: Comparison of marital relationship among women undergoing infertility treatment in both experimental and control group.

Variables	Exp. group (n=30)		Ctrl. group (n=30)		— MD	4 malma	J.C	P value
	Mean	SD	Mean	SD	MID	t value	aı	r value
Marital relationship	18.33	2.89	14.47	4.11	3.867	4.215	58	0.001**

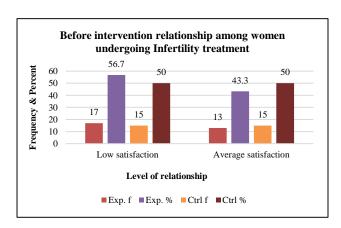


Figure 2: Before intervention marital relationship among women undergoing Infertility treatment.

Figure 2 depict that marital relationship among women undergoing infertility treatment. In intervention group; out of 30 women, half of them i.e., 56.7% had low satisfaction and 43.3% had average satisfaction and the mean score of relationship was 13.70 ± 3.993 . In control group; 50% women had low satisfaction and similarly 50% has average satisfaction and the mean score of relationship was 14.07 ± 4.034 .

Table 3 highlights the effectiveness of nursing intervention among women undergoing infertility treatment in experimental group. The dependent t-test was applied which reveals that mean difference between before and after nursing intervention in relationship was 4.633 (t_{29} =10.640, p=0.001) which was statistically highly significant at 0.001 level.

Table 4 demonstrate that comparison of marital relationship among women undergoing infertility treatment in both experimental and control group. Here two groups are there, so independent t-test was applied which reveals that mean difference between experimental and control group; in marital relationship the mean difference was 3.867 (t58=4.215, p=0.001) which was statistically highly significant at 0.001 level, hence our null hypothesis was rejected and alternative hypothesis was accepted. It was concluded that nursing interventions were effective to improve the marital relationship among infertile women as compared with control group.

DISCUSSION

The current study aimed to evaluate the effect of nursing intervention on marital relationship among infertile women. Our results revealed that nursing intervention were significantly effective to improve the marital relationship score in infertile women. The present study found that 56.7% had low satisfaction and 43.3% had average satisfaction and the mean of relationship was 13.70±3.993. The present study supported by another study which is conducted by Gardi et al showed 15.7% of the study participants had marital dissatisfaction, 67.1% had moderate satisfaction and psychological intervention were effective to improve the marital satisfaction. 17

In the present study the pre- test mean score of experimental and control group was 13.70 and 14.07 respectively and after intervention it was 18.33 in experimental and 14.47 in control group. The mean difference of each group was 3.867 (t_{58} =4.215, p=0.001) which is statistically highly significant at 0.001 level. Similar study supports the present study that is conducted by Kharde et al, to evaluate the effect of psychological intervention on emotional distress among women with infertility. Sample size was 460 infertile women. They found the pre- test mean score of experimental and control group was 41.90 and 40.43 respectively and after intervention it was 62.89 in experimental and 55.20 in control group. Unpaired 't' test showed that there was an extremely statistically significant difference in between the groups. 18

The results of a similar quasi experimental study conducted by Yekta et al also support this study. They identified mindfulness-based stress reduction intervention on marital satisfaction and conclude that intervention was effective to enhance the marital satisfaction. Somayeh Alirezaei et al conducted a systematic review and meta-analysis study includes 309 studies published upto March 2020. It was found that counselling was very effective to improve the marital relationship among infertile women. Ahmadi et al investigated the effect of life style changes on marital adjustment 80 couples were divided into two groups. Then life style change was administered on experimental group. The marital adjustment change score between two groups was significantly different. Maryam et al evaluated the effect of emotionally focused

therapy on enhancing marital adjustment and quality of life. It was a semi experimental study in which 30 infertile couples (60 individuals) were chosen by purposive sampling. Results shows emotionally focused therapy was significantly effective on enhancing marital relationship and quality of life.²² Poorheidari et al determine the effect of relationship enrichment counselling on the marital relationship among infertile couple with history of domestic violence. The study was conducted in two intervention and control groups consisting of 44 infertile couples referred to Imam Khomeini Hospital of Sari city in 2015. Two group consisting 44 infertile couple were included in the study. The repeated measure ANOVA test concludes the relationship enrichment program was effective to boost up the marital satisfaction score at (p=0.001).9

Generalizability

Final study data collection trial is going on but on the behalf pilot study it was concluded that complementary therapies are equally effective to improve the marital relationship. We recommend that some large-scale studies are required to generalize the finding.

This pilot study was limited to 60 infertile women undergoing infertility treatment in tertiary care hospital.

CONCLUSION

The study finding revealed that there was a significant improvement in marital relationship with nursing intervention among infertile women. Therefore, these interventions may be implemented as routine care for all infertile women having marital disharmony for reducing the severity and improve the treatment outcome.

No harmful effect was found till end of the pilot study.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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