Effect of Emotional Regulation Program on Marital Satisfaction and Psychological Wellbeing Among Women with Infertility

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Abstract

Background: As a biological problem, infertility affects people psychologically on a personal and social level. Therefore, it would be reasonable to anticipate psychological effects following an infertility diagnosis. **Aim of the study:** was to evaluate the effect of emotional regulation program on marital satisfaction and psychological wellbeing among women with infertility. **Research design:** Quasi-experimental research design Pre-post (study and control group) was conducted. **Setting:** The study was carried out at obstetric clinic affiliated to Benha University Hospital, Egypt. **Subject:** A purposive sample of (60) women with infertility was chosen. **Tools of data collection:** I: Interviewing questionnaire, II: Emotion Regulation Questionnaire, III: Marital Satisfaction Scale, IV: Psychological Well-Being Scale. **Results:** t-test indicated that there were significant differences in emotional regulation, marital satisfaction and psychological wellbeing between the two groups after the intervention ($p < 0.05$) of the emotional regulation program. There was statistically significant positive correlation between total mean score of emotional regulation, marital satisfaction and psychological wellbeing among study group post program implementation. **Conclusion:** the emotional regulation program sessions applied in the current study has significantly improved the marital satisfaction and psychological wellbeing among the studied women with infertility. **Recommendations:** recommended that medical centers and fertility clinics include emotion regulation programs as an essential part of the infertility treatment plan to improve psychological adjustment and ability to cope with stress.

Keywords: Emotional regulation, Infertility, Marital satisfaction and Psychological wellbeing

Introduction

Fertility is still quite essential, having children helps to strengthen a marriage and one of the fundamental reasons for it. The incapacity to conceive after a year of consistent sexual activity without the use of contraception is known as infertility, which is the reverse of fertility. One of the most prevalent issues in developing countries, particularly for females, is infertility. The World Health Organization defines infertility as a chronic condition in which couples are unable to conceive after one year of consistent sexual activity without the use of birth control **(Jurado et al., 2023) & (Sohbati et al., 2021).**

Additionally, infertility is a stressful life event that has a significant influence on all aspects of life, including relationships with a spouse, work, family, social, physical, and sexual **(Vioreanu, 2021)**. These days, infertility has become a social issue that may seriously harm marital relationships and the satisfaction of infertile couples because it is hard to accept and adjust to the

idea of infertility due to its unpredictable nature **(Simionescu et al., 2021)**.

Marital satisfaction is an important aspect of the couple's marital life, which defined as the degree to which they perceive and satisfy their partners' needs and desires **(Agyemang et al., 2020)**. Infertility impacts the marital relationship, leads to conflict between couples, and makes infertile women unsatisfied with their marriage. These factors include high treatment costs, ongoing anxiety about treatment results, fatigue from visiting different clinics, social repercussions, facing questions about a childless marriage, potential distress during treatment, and fear of missing the spouse or ruining the family. Numerous studies have demonstrated that infertile women experience lower level of marital satisfaction, which might result in divorce and remarriage **(Malik, 2020).**

Among women with infertility, psychological well-being is a vulnerable variable. Psychological wellbeing takes into account a person's ability to cope with infertility and his or her efforts to reach his or her full potential. Thus, infertility is regarded as one of the major life crises that cause psychological problems and disruptions because it is a continuous and stressful experience that lowers psychological well-being due to repeated failures to conceive. These stressful experiences of infertility are linked to a variety of psychological damages, such as low self-esteem, elevated stress levels, anxiety, depression, feelings of inadequacy and inferiority, inaction regarding sexual productivity, and marital issues **(Boivin et al., 2022).**

There is a correlation between decreased fertility and marital satisfaction. Numerous research has demonstrated that rising stress and depression levels lower marital satisfaction. Additionally, a decline in self-esteem and social functioning lowers marital satisfaction. Additionally, there is proof that infertility negatively impacts couples' psychological wellbeing and marital relationships **(Luk & Loke, 2019)**. The majority of research indicates that infertile couple' marriage quality declines, which may be connected to their psychological wellbeing and anxiety symptoms **(Kiani et al., 2020) & (Jurado et al., 2023).**

Successful infertility treatment requires addressing the psychological requirements of infertile women. During treatment, each spouse needs empathy and support. Couples' emotional regulation therapy is one of many strategies to deal with the psychological effects of infertility. The ability to effectively control and respond to an emotional experience throughout time and in many contexts is referred to as emotion regulation. It encompasses shifts in how people react emotionally, such as an increase, maintenance, or decrease in both positive and negative emotions. Cognitive reappraisal is one of ER's most adaptable techniques. It entails restoring the ability to demonstrate life experiences cognitively. It alters how one perceives or considers situations that could cause emotional reactions in a non-emotional way **(Elsayes & Abo-Elyzeed, 2021).**

Emotional regulation plays a major role in the psychological well-being. Emotional regulation is also a form of self-regulation. One therapy that has a beneficial effect on a couple's psychological wellbeing is emotional regulation training. The goal of emotional regulation training is to lessen and manage both positive and negative emotions while utilizing them constructively, enhances psychological wellbeing, marital satisfaction, decreases self-harm, and lessens stress, anxiety, and depressive symptoms. Not only has a favorable impact on well-being but also enhances physical health, interpersonal

interactions, and, ultimately, couples' marriage satisfaction **(Young et al., 2019).**

Significance of the study

Infertility is a global reproductive health problem which affects about 48 million women worldwide **(Ombelet, 2020).** According to WHO estimates, 25% of women in developing countries were experience infertility. According to epidemiological data, up to 186 million people worldwide are thought to be affected with infertility. According to World Health Organization-sponsored research by the Egyptian Fertility Care Society, 12 percent of Egyptian couples' experience infertility. These days, infertility has become a social issue that can seriously harm married relationships and the satisfaction of infertile females because it is hard to accept and adjust to the idea of infertility due to its unpredictable nature **(Simionescu et al., 2021)**.

Aim of the research:

The aim of this research was to evaluate the effect of emotional regulation program on marital satisfaction and psychological wellbeing among women with infertility.

Research hypotheses:

Emotional regulation program will promote marital satisfaction and psychological wellbeing among women with infertility.

Subject and Methods

Research Design:

The research was conducted using a quasi-experimental research design a pre-post (study and control group).

Research setting:

The study was implemented in the obstetric clinic affiliated to Benha University Hospital, Egypt. The aforementioned location was chosen because it supports the largest population area and has a high rate of infertile women.

Research Sample:

A purposive sample of 60 women with infertility who were admitted to the previously mentioned setting. Using simple random sampling, they were split into two groups (the study and control groups), with thirty subjects in the study group and thirty in the control group. The inclusion criteria included the women diagnosed with infertility, the age range of 18 to 35 years old, free from any psychiatric disturbances and agree to participate in the study.

Tools of data collection:

The following instruments were used to gather the data:

Tool (1):- After examining the relevant literature and research studies, the researchers created a systematic interview schedule that included questions about socio-demographics and fertility history. There were two sections to it:

Part (A): It contained socio-demographic data about age, educational level, occupation, residence and income level.

Part (B): It included infertility history as (duration of the infertility, type of infertility, causes and family history of infertility).

Tool (2):- Emotion Regulation Questionnaire:

It was developed by **Gross & John, (2003)** and adapted by the researchers. This scale was used to assess respondents' propensity to control their emotions in two ways—Cognitive Reappraisal and Expressive Suppression. It consisted of a 10-item scale. Respondents complete each item on a 7-point Likert-type scale, with 1 denoting "strongly disagree" and 7 denoting "strongly agree". The total scores ranged from 10 to 70, with higher scores denoting greater emotion regulation.

Tool (3):- Marital Satisfaction Scale

This scale was developed by **Funk & Rogge, (2007)**. It was translated into Arabic and modified by **Moustafa et al., (2022)** to measure the degree of marital

satisfaction. There were 48 items on this scale, and the rating scale ranged from 1 to 3. Response scores (rarely, sometimes and most of the time). There were both positive and negative sentences on this scale. The items were divided into six subscales: eight items to measure economic perspective, eight items to measure emotional communication, eight items to measure sexual satisfaction, eight items to measure family issues, eight items to measure time spent, and eight items to measure the range of duties and responsibilities.

The marital satisfaction scale's scoring system was divided into the following categories: Less than 50% denotes poor satisfaction, 50% to 74% indicates average satisfaction, while > 74% indicates good satisfaction

Tool (4):- Psychological Well-Being Scale.

This scale was developed by **Abbott et al., (2006)**. It was translated into Arabic and validated by **Al-Jammal, (2013)** to assess Psychological wellbeing. It consisted of 42 items, spanning six dimensions: seven for measuring autonomy, seven for measuring environmental mastery, seven for measuring personal growth, seven for measuring life purpose, seven for measuring positive relationships with others, and seven for measuring self-acceptance. A three-point Likert scale was used to assess the responses, with disagree = 1, neutral = 2, and agree = 3. High values indicated a high level of psychological wellbeing.

Scoring system of psychological wellbeing scale

- A score between 1 and 41 indicates low level of psychological wellbeing.
- A score between 42 to 83 indicates a moderate level of psychological wellbeing.
- A score between 84 and 126 indicates high level of psychological well-being.

Validity of the Tools

Before the tools were used with the researchers' responsive infertile women, five specialists in the fields of psychiatric mental health nursing evaluated its content validity to ensure that the questions were relevant, comprehensive, and applicable. According to their opinion, no modifications were made.

Reliability of the tools

The overall emotional regulation scale, marital satisfaction scale, and psychological wellbeing measure were tested for test-retest reliability. Cronbach alpha was used for tools one (a = 0.847), two (a = 0.95), and three (0.80).

Administrative Approval

Official permission from the Scientific Research Ethics Committee in the Faculty of Nursing at Benha University was obtained upon the feasibility of the research tools and study (approval number: REC-PSYN-P21). After the objectives and nature of the research were made clear, it was possible to carry out the study with the least amount of dissatisfaction.

Ethical Consideration: Participants received assurances regarding the confidentiality and anonymity of the information they provided before applying for the research. Participants were informed that their participation in the research is entirely voluntary, that there are no risks or negative effects, and that they are free to decline or withdraw from it at any time. Written consent was then obtained before they could participate in the research.

Pilot study

A pilot research was performed on six women (10%) to assess the usefulness, objectivity, practicality, and clarity of each tool. It was also done to estimate the time needed for data collection and identify any issues related to tool administration, after which the relevant adjustments were performed. None of the data from the pilot research were used in the current investigation.

Field of work

Four stages comprised the actual research: assessment, planning, implementation, and evaluation.

Phase (1): Assessment phase

Once approval was granted, the planned investigation may proceed. The interviewers were positioned in a private, peaceful area. The goal and scope of the research were explained to the participants. An evaluation of 60 women was carried out using the aforementioned research instruments. Each participant's interview lasted approximately forty-five minutes on average. It took a month to finish pre-testing. The 60 participants in the research were then split into two equal groups at random (the study group and the control group). Thirty participants in the study group received training program sessions, while thirty participants in the control group didn't receive any session of program.

Phase (2): Planning phase:

This phase's goal was to create training for emotional regulation. Using pertinent recent literature reviews, it was created in Arabic. Creating training objectives and content for emotional regulation, including principles, advantages, self-regulation and situational emotional regulation, and practice techniques, is part of this phase.

Phase (3): The implementation phase

The study group was split up into three smaller groups when the researchers first met them; each subgroup consisted of ten women. There were ten sessions in all, including an introduction to the program, two theoretical and six practical sessions, and a final session for women to review the program's content and obtain a summary of all the sessions and their goals. Each subgroup took part in ten sessions, which were scheduled as two sessions extend to two days per week, on Sunday and Tuesday, from 10 to 11.30 AM. The theoretical portion of each session lasts 25–30 minutes, while the practical portion lasts 60–90 minutes. The sessions of the emotional management program carried out from early February 2024 until the end of May 2024.

By employing positive reinforcement, the researchers inspired and encouraged the studied women to attend the program's sessions. In order to teach practical skills during the practical sessions, the researchers employed role-playing, demonstration, and re-demonstration. In addition, there was a group discussion, videos, and a lecture. Both amongst women and between the women and the researchers, role play was employed. Additionally, the researchers informed them of the time of the upcoming session and gave a summary of the prior one. Every session, they received homework tasks.

Emotional Regulation Training Sessions were implemented through the following schedule of sessions: -

Session No	Content
Session (1)	Introduce the group members and the researchers to one another during the introductory session. The researchers will also provide an overview of the program, outlining its overall goal, evaluation procedure, and topic responsibilities.
Session (2)	An overview about infertility, including its definition, causes, types, and effects on psychological health and marital satisfaction.
Session (3)	**Emotional awareness and perception** (familiarity of the various aspects of emotions, their function in daily life, their names, their short- and long-term impacts, the significance of developing emotional regulation skills in daily life, and the primary and secondary emotion types).
Session (4)	**Self-assessment** (recognizing one's own emotional experiences, determining one's emotional vulnerability, determining one's regularity strategies, and assessing the emotional skills and vulnerability of group members).
Session (5)	**Situation correction**: preventing social isolation and avoidance, teaching problem-solving techniques and interpersonal skills (assertiveness, dialogue, and conflict resolution) in order to alter the excitatory situation.
Session (6)	**Attention Development**: Training in attention change skills (including how to stop worrying and rumination and teaching how to pay attention).
Session (7)	**Carrying out the cognitive assessment** (Determine misunderstandings, their impact on emotions, and teaching re-evaluation techniques).
Session (8)	**Adjusting responses to the goal**: modifying the behavioral and physiological effects of emotions through (Determining the degree and manner of application of the inhibition strategy and analyzing the emotional effects of it and discussing exposure).
Session (9)	- **Continue to Adjusting responses to the goal**: modifying the behavioral and physiological effects of emotions through (Teaching the methods of expressing emotions, Modifying behaviors by changing the environmental reinforcements, Emotional evacuation training, relaxation and reverse action, use Confrontational thoughts)
Session (10)	**Evaluating and applying the purpose** through (Assessing the achievement of individual and group goals, Applying the learned skills in natural environments outside the session, Examining and removing obstacles to doing homework).

Phase (4): Evaluation Phase:

Following the program's implementation, the studied women who

participated once more filled out a post-test sheet, which was identical to the pre-test, to gauge how effectively the training program had affected their marital satisfaction and psychological wellbeing. Using the same instruments, a follow-up test was conducted two months after the post-test to examine the program's efficacy.

Statistical Design

Version 22 of the Statistical Package for Social Science (SPSS) is used to analyze data statistically. Analysis of variance was used to look at correlations that were found, Pearson correlation was used for quantitative variables, linear regression analysis was used for research variable predictors, and descriptive (mean & SD), and t-test were used to look at the differences and similarities between research variables. Less than 0.05 was regarded as a significant probability (p-value), and less than 0.001 as a highly significant one.

Results

Table (1): demonstrates that (80.0%) of the studied women in the control group and (93.3%) of the studied women in the study group are under 30 years old, and that (50.0%) of the control and study groups, respectively, have higher levels of education. Regarding occupation, (70.0% & 50.0%) of the studied women in the control and study groups, respectively, are employed; (60.0% & 70.0%) of them reside in urban and (50.0% & 56.7%) of them have enough income for the control and study groups, respectively.

Table (2) shows that, in the control and study group, respectively, (53.4% & 93.3%) of the studied women have had infertility for less than five years. In terms of infertility types, primary infertility affects (80.0% & 73.3%) of the control and study groups, respectively. The percentage of the studied women in the control and study groups who have organic reasons of infertility is (76.7% & 93.3%), respectively. Regarding the control and study group, respectively, (63.3% & 86.7%) of them did not have a family history of infertility.

Figure [1]: demonstrates that among the studied women in the study groups, (60.0%) had low level of emotional regulation before the program began, and (43.3%) had moderate level of emotional regulation after program implementation.

Table (3) illustrates that there is no statistically significant difference between control and study group in the subscale of marital satisfaction before program application ($p>0.05$) while there is highly statistical significant difference between marital satisfaction subscales all domain among control and study group post program implementation $p<0.001$ except sexual satisfaction domain.

Figure [2]: shows that, (43.3%) of the studied women have poor level of marital satisfaction preprogram, while (46.7%) of them have good level of marital satisfaction post program implementation among study group.

Table (4) shows that, while there is a highly statistically significant difference between the control and study groups in all psychological wellbeing subscales after program implementation ($p<0.001$), there is no statistically significant difference between the control and study groups in the psychological wellbeing subscale prior to program implementation ($p>0.05$).

Figure [3]: shows that among the studied women in the study group, (23.3%) had high psychological wellbeing prior to the program, and (40.0%) had high psychological wellbeing after the program was implemented.

Table (5): demonstrates that the relationship between total marital satisfaction and the studied women' occupation and income among the control group is highly statistically significant (X2 = 9.92, P<0.001 and X2 = 13.40, P<0.001), respectively. Additionally, this table demonstrated that there is a highly statistically significant difference (P=<0.001) in the study group's overall marital satisfaction with the studied women' education level, occupation, residence and income. Additionally, there is a statistically significant relation between the study group's overall marital satisfaction with the studied women' types and causes of infertility, as well as between the control group's total marital satisfaction the studied women'age and family history of infertility (p=<0.05).

Table (6): demonstrates that the relationship between the studied women' overall psychological well-being and their age, education, place of residence, income, length of infertility, type of infertility, and causes among the control group is highly statistically significant (P<0.001).However, among the study group, there is a highly statistically significant difference (P=<0.001) between the total psychological wellbeing of the studied women and their level of education, occupation, residence, and type of infertility. Additionally, there is a statistically significant difference between the study group's total psychological wellbeing and the studied women' causes of infertility (p<0.05) and the control group's total psychological wellbeing with the studied women' occupations (p=<0.05).

Table (7): shows that, there is statistically significant positive correlation coefficient between the studied women' total emotional regulation, marital satisfaction and psychological wellbeing among the study group post program implementation.

Table (1) Frequency distribution of the studied women in both groups regarding their socio-demographic characteristics (n=60)

Items	Control group (n=30)		Study group (n=30)	
	No	%	No	%
Age				
• <30	24	**80.0**	28	**93.3**
• ≥30	6	20.0	2	6.7
Education level				
• Illiterate	4	13.4	10	33.3
• Elementary education	11	36.6	5	16.7
• High education	15	**50.0**	15	**50.0**
Occupation				
• Employed	21	**70.0**	15	**50.0**
• Housewife	9	30.0	15	50.0
Residence				
• Rural	12	40.0	9	30.0
• Urban	18	**60.0**	21	**70.0**
Income				
• Not enough	9	30.0	10	33.3
• Enough	16	**53.3**	17	**56.7**
• Enough and save	5	16.7	3	10.0

Table (2) Frequency distribution of the studied women in both groups regarding to their infertility history (n=60)

Items	Control group (n=30)		Study group (n=30)	
	No	%	No	%
Duration of infertility				
• <5	16	**53.4**	25	**93.3**
• ≥5	14	46.6	5	16.7
Types of infertility				
▪ Primary	24	**80.0**	22	**73.3**
▪ Secondary	6	20.0	8	26.7
Causes of infertility				
• Organic causes	23	**76.7**	28	**93.3**
• Unknown causes	7	23.3	2	6.7
Family history of infertility				
• No	19	**63.3**	26	**86.7**
• Yes	11	36.7	4	13.3

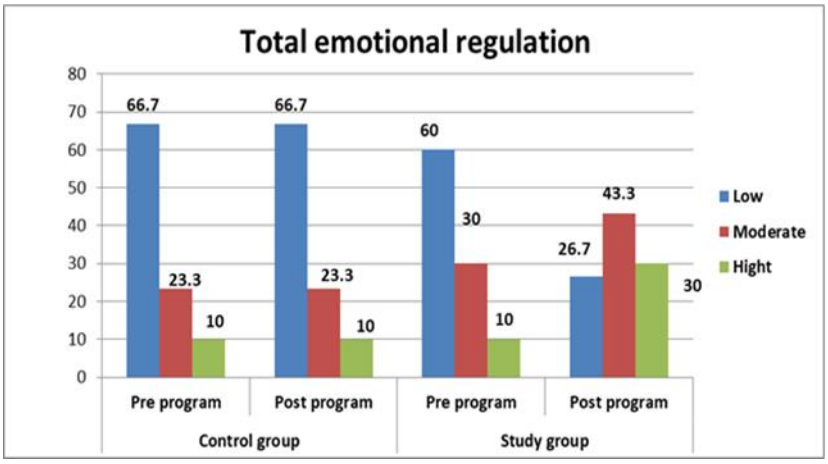

Figure (1): Distribution of the studied women according to their total emotional regulation pre and post program implementations among both groups.

Table (3): Mean scores of the studied women' marital satisfaction subscale among control and study group pre and post program implementation

Subscale of Marital satisfaction	Control group (n=30)		Study group (n=30)		T	P-value
	Pre program	Post program	Pre program	Post program		
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Economic satisfaction	1.30 ± 0.59	1.36 ± 0.59	1.46 ±0.73	1.83 ± 0.74	4.04	<0.001**
Affective communication	1.76 ± 0.77	1.76 ±0.77	1.63 ± 0.71	2.10 ± 0.76	3.61	<0.001**
Sexual satisfaction	1.63 ± 0.61	1.70 ± 0.65	1.66 ± 0.66	1.70 ±0.66	0.16	>0.05
Field of family problems	1.63 ± 0.77	1.63 ± 0.77	1.56 ± 0.72	1.93 ± 0.73	3.63	<0.001**
Area of spending time	1.53 ± 0.66	1.53 ± 0.66	1.56 ± 0.62	1.96 ± 0.76	5.02	<0.001**
Field of tasks and roles	1.53 ± 0.68	1.60 ± 0.72	1.53 ± 0.68	1.93 ± 0.69	4.23	<0.001**

****Significance at 0.001 levels**

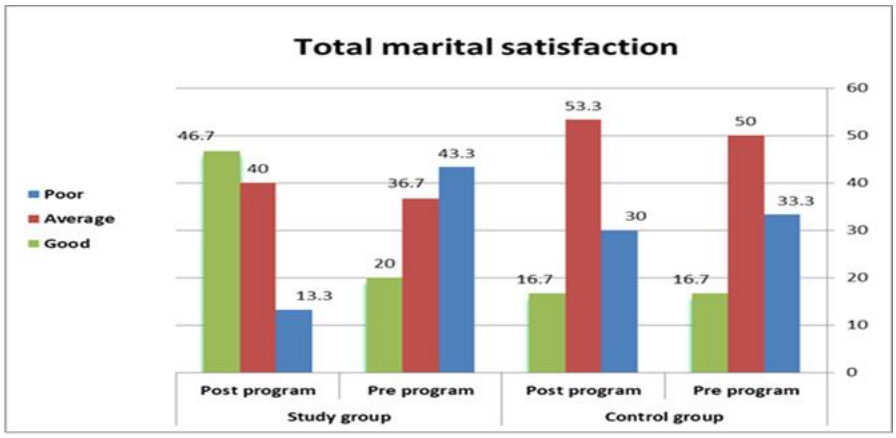

Figure (2): Distribution of the studied women according to their total marital satisfaction pre and post program implementations among both groups.

Table (4): Mean scores of the studied women' psychological wellbeing subscale among control and study groups pre and post program implementation

Subscale of psychological wellbeing	Control group (n=30)		Study group (n=30)		T	P-value
	Pre program	Post program	Pre program	Post program		
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD		
Autonomy	1.63 ± 0.76	1.7. ± 0.74	1.60 ±0.72	1.86 ± 0.77	3.43	<0.001**
Environment	1.60 ± 0.67	1.66 ±0.66	1.70 ± 0.70	1.96 ± 0.71	3.43	<0.001**
Personal growth	1.60 ± 0.67	1.63 ± 0.66	1.63 ± 0.66	1.93 ±0.63	3.53	<0.001**
Purpose of life	1.86 ± 0.68	1.90 ± 0.66	1.60 ± 0.66	2.00 ± 0.64	3.69	<0.001**
Positive relation	1.76 ± 0.56	1.76 ± 56	1.90 ± 0.66	2.13 ± 0.73	3.22	<0.001**
Self-acceptance	1.73 ± 0.63	1.73 ± 0.63	1.76 ± 0.72	2.13 ± 0.68	3.63	<0.001**

****Significance at 0.001 levels**

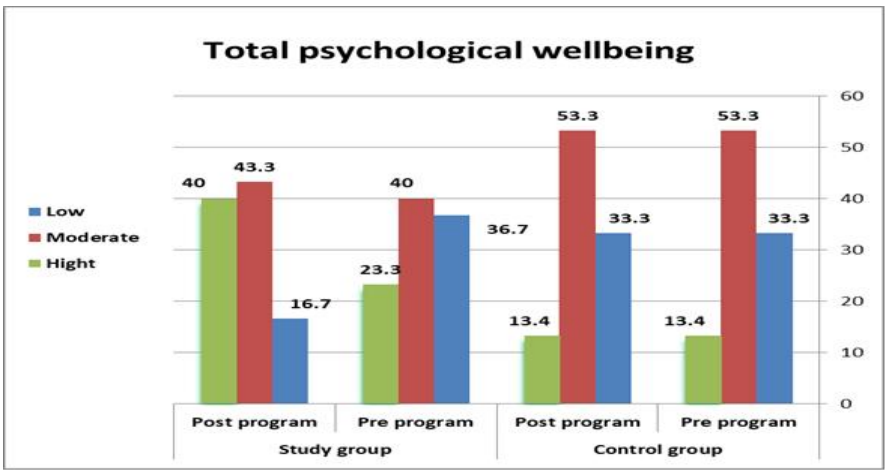

Figure (3): Distribution of the studied women according to their total level of psychological wellbeing pre and post program implementations among both groups.

Table (5): Relationship between the studied women' socio-demographic data, clinical data and total marital satisfaction among control and study groups post program implementation.

Items	Total marital satisfaction Control group (n=30)						X^2	P-value	Total marital satisfaction Study group (n=30)						X^2	P-value
	Poor (n=9)		Average (n-16)		Good (n=5)				Poor (n=4)		Average (n=12)		Good (n=14)			
	No	%	No	%	No	%			No	%	No	%	No	%		
Age																
<30	9	1000	10	62.5	5	100.0	6.56	**<0.05***	4	100.0	11	91.7	13	92.9	0.34	>0.05
≥30	0	0.0	6	37.5	0	0.0			0	0.0	1	8.3	1	7.1		
Education level																
Illiterate	2	22.2	2	12.5	0	0.0			4	100.0	5	41.7	1	7.1		
Elementary	5	55.6	8	50.0	1	20.0	4.89	>0.05	0	0.0	3	25.0	2	14.3		
education															14.63	**<0.001****
High education	2	22.2	6	37.5	4	80.0			0	0.0	4	33.3	11	78.6		
Occupation																
Employed	9	100.0	11	68.8	1	20.0	9.92	**<0.001****	4	100.0	8	66.7	3	21.4	9.90	**<0.001****
Housewife	0	0.0	5	31.2	4	80.0			0	0.0	4	33.3	11	78.6		
Residence																
Rural	3	33.3	5	31.2	4	80.0	4.10	>0.05	4	100.0	4	33.3	1	7.1	12.88	**<0.001****
Urban	6	66.7	11	68.8	1	20.0			0	0.0	8	66.7	13	92.9		
Income																
Not enough	5	55.6	3	18.7	2	40.0			4	100.0	6	50.0	0	0.0	17.97	**<0.001****
Enough	4	44.4	11	68.8	0	0.0	13.40	**<0.001****	0	0.0	6	50.0	11	78.6		
Enough and save	0	0.0	2	12.5	3	60.0			0	0.0	0	0.0	3	21.4		
Duration of infertility																
<5	4	44.4	11	68.8	1	20.0	4.04	>0.05	4	100.0	8	66.7	13	92.9	4.11	>0.05
≥5	5	55.6	5	31.2	4	80.0			0	0.0	4	33.3	1	7.1		
Types of infertility																
Primary																
Secondary	7	77.8	13	81.2	4	80.0	6.52	>0.05	4	100.0	7	58.3	11	78.6	12.25	**<0.05***
	2	22.2	3	18.8	1	20.0			0	0.0	5	41.7	3	21.4		
Causes of infertility	5	55.6	14	87.5	1	20.0			4	100.0	10	83.3	14	100.0		
Organic	4	44.4	2	12.5	4	80.0	7.93	>0.05	0	0.0	2	16.7	0	0.0	14.12	**<0.05***
Unknown causes																
Family history of infertility																
No	8	88.9	10	62.5	1	20.0	6.57	**<0.05***	4	100.0	9	75.0	13	92.9	2.99	>0.05
Yes	1	11.1	6	37.5	4	80.0			0	0.0	3	25.0	1	7.1		

Table (6): Relationship between the studied women' socio-demographic data, clinical data and total psychological wellbeing among control and study groups post program implementation

Items	Total psychological wellbeing Control group(n=30)						X^2	P-value	Total psychological wellbeing Study group (n=30)						X^2	P-value
	Low (n=10)		Moderate (n-16)		High (n=5)				Low (n=5)		Moderate (n=13)		High (n=12)			
	No	%	No	%	No	%			No	%	No	%	No	%		
Age																
<30	4	40.0	16	100.0	4	100.0	15.00	**<0.001****	5	100.0	11	84.6	12	100.0	2.80	>0.05
≥30	6	60.0	0	0.0	6	0.0			0	0.0	2	15.4	0	0.0		
Education level																
Illiterate	4	40.0	0	0.0	0	75.0			4	80.0	6	46.2	0	0.0		
Elementary education	6	60.0	5	31.2	3	25.0	17.41	**<0.001****	1	20.0	3	23.1	1	8.3	16.39	**<0.001****
High education	0	0.0	11	68.8	1	0.0			0	0.0	4	30.8	11	91.7		
Occupation																
Employed	10	100.0	9	56.2	2	50.0	6.48	**<0.05***	5	100.0	9	69.2	1	8.3	15.25	**<0.001****
Housewife	0	0.0	7	43.8	2	50.0			0	0.0	4	30.8	11	91.7		
Residence																
Rural	0	0.0	8	50.0	4	100.0	13.33	**<0.001****	3	60.0	5	38.5	1	8.3	5.26	>0.05
Urban	10	100.0	8	50.0	0	0.0			2	40.0	8	61.5	11	91.7		
Income																
Not enough	0	0.0	8	50.0	0	0.0			4	80.0	6	46.2	0	0.0		
Enough	10	100.0	5	31.2	4	100.0	17.50	**<0.001****	1	20.0	7	53.8	9	75.5	14.32	**<0.001****
Enough and save	0	0.0	3	62.5	0	0.0			0	0.0	0	0.0	3	25.0		
Duration of infertility																
<5	10	100.0	6	37.5	0	0.0	14.93	**<0.001****	5	100.0	10	76.9	10	83.3	1.38	>0.05
≥5	0	0.0	10	62.5	4	100.0			0	0.0	3	23.1	2	16.7		
Type of infertility																
Primary	10	100.0	11	68.8	4	80.0	14.5	**<0.001****	2	60.0	10	76.9	10	83.3	7.5	**<0.001****
Secondary	0	0.0	5	31.2	1	20.0			3	40.0	3	23.1	2	16.7		
Causes																
organic causes	10	100.0	11	68.8	3	60.0			4	80.0	11	81.6	12	100.0		
Unknown causes	0	0.0	5	31.2	2	40.0	31.26	**<0.001****	1	20.0	2	15.4	0	0.0	11.00	**<0.05***
Family history of infertility																
No	8	80.0	8	50.0	3	60.0	2.65	>0.05	5	100.0	11	84.6	10	83.3	0.93	>0.05
Yes	2	20.0	8	50.0	2	40.0			0	0.0	2	15.4	2	16.7		

Table (7) Correlation between the studied women' emotional regulation, marital satisfaction and their psychological wellbeing pre and post program implementation among study group.

Total emotional regulation	Total psychological wellbeing				Total marital satisfaction			
	Pre program		Post program		Pre program		Post program	
	r	P	r	P	r	P	r	P
Pre program	0.00	>0.05	0.24	>0.05	0.033	>0.05	0.14	>0.05
Post program	0.24	>0.05	0.41	**<0.05***	0.039	>0.05	0.29	**<0.05***

Discussion

A life crisis, infertility not only impacts the woman undergoing treatment but also poses a significant burden on families, causes emotional stress, psychological risks to both spouses, and causes suffering as a result of treatment. Numerous researches have demonstrated that experiencing infertility is linked to a variety of psychological harm, such as low self-esteem, elevated stress, anxiety, and depression levels, feelings of inadequacy and inferiority, passivity during sexual activity, and marital problems **(Sharma et al., 2022).**

In terms of the socio-demographic data of the women under investigation, the current research's results revealed that, for both the control and study groups, more than three-quarters of the studied women were under thirty years old, and that, respectively, half of them had a higher level of education. Additionally, more than two-thirds and half of the studied women are worked among control and study groups. Additionally, more than half of them had enough income for the control and study groups, respectively.

Based on clinical data, the current research found that more than half and the majority of the studied women of the control and study groups experienced infertility for less than five years. Additionally, both the control and study groups, the majority of the studied women—less than three-quarters—had primary infertility. Additionally, in the control and study groups, respectively, almost three-quarters and the majority of the studied women had organic reasons of infertility. Accordingly, the majority of them in the study group and over two-thirds of them in the control group did not have a family history of infertility.

In terms of emotional regulation, the current research found no statistically significant difference between the control and study groups in the emotional regulation subscale prior to program implementation. This may be because the inability to conceive results in strong sentiments of sadness, anxiety, and negative affection that might overpower women' capacity for efficient emotional regulation. Furthermore, women may feel stigmatized and misunderstood due to high levels of stress in marriages and cultural and social expectations surrounding parenting. Emotional distress can result from these cumulative stressors interfering with normal emotional processing and coping strategies. According to this research, which was consistent with **Faghih, (2016)** women who experience infertility have lower levels of positive affect and higher levels of negative affect and emotion regulation impairments.

Furthermore, following program implementation, there was a highly statistically significant difference between the control and study groups on all

domains of the emotional regulation subscales. Additionally, it shown that, compared to the study group before the program, less than half of them had a moderate level of emotional regulation after it was implemented. This may be because the emotional regulation program helps the women under research to safely shape their emotions, which helps them manage their emotional turmoil and maximize their emotional control by exposing their vulnerable emotions and allowing them to experience and reprocess those emotional responses (that underlie interactive situations). Additionally, this application recognizes the negative interactive cycles that signify insecure attachment and modifies them once more in accordance with the expression of latent attachment demands.

The results of the current research were in line with those of research conducted by **Amani et al., (2018)** to examine the impact of training in emotional regulation skills on emotional regulation strategies and the quality of life of women heads of the household. The researchers found that training in emotional regulation skills can improve people's performance in emotional situations and improve their quality of life. This research supported the findings of **Faghih & Kazemi, (2019)** by demonstrating that emotionally focused couples therapy can help infertile couples better regulate their emotions.

According to the marital satisfaction subscale, the current research found no statistically significant difference between the control and study groups prior to program implementation. This may be the result of infertility, which has a detrimental impact on marriage relationships by lowering marital satisfaction and alienating family members. This research revealed that women with infertility had moderate to low marital satisfaction, which may also be consistent with the findings of **Tabatabaee et al., (2022).** This discontent was influenced by social and cultural restrictions; childlessness was commonly viewed as a stigma, which led to tension in marriages.

Furthermore, there was a highly statistically significant difference between the control and study groups' marital satisfaction subscales in every domain after the program's implementation, with the exception of the sexual satisfaction domain. It demonstrated that, in comparison to before the program's adoption, the study group's marital satisfaction improved post program implementation. This might be due to the effectiveness of emotional regulation training sessions that focus on enhancing women' performance and helping them comprehend their own issues. The ladies in the research reported better relationships and greater levels of satisfaction from their spouses compared to before the intervention.

The result of the current research was in line with findings from **Najafi et al., (2015)** that emotionally focused therapy significantly improved marital adjustment (cohesion, agreement, and affection). Additionally, the subscales measuring marital satisfaction, dyadic coherence, dyadic consensus, affection expression, social relationships, physical and psychological health, and social surroundings all showed improvements. There was a difference between the pre- and post-test results, as well as between the control and sample groups.

Furthermore, this could also be in line with the findings of **Wiebe et al., (2017)** that assessed the two-year follow-up of the outcomes regarding the effect of

EFCT on improving the attachment status and marital satisfaction; the stability of the changes during the investigation. According to research by **Riahi et al., (2020)** concluded that infertile couples who use positive cognitive emotion regulation strategies, such as mindfulness techniques seem to have more control over their internal and external environment (aware reaction and non-reactivity), and this reduces emotional problems and depression and increases marital adjustment.

In terms of psychological well-being, the current research found no statistically significant difference between the control and the study groups in the psychological wellbeing subscale prior to program implementation. This might be because women who experience infertility had lower mental health indicators and higher levels of psychological distress as a result of their repeated reproductive failures. This finding was consistent with **Shreffler et al., (2020)** who found that, in comparison to couples with normal fertility, those who experience infertility long after marriage have a significantly lower level of psychological well-being.

Additionally, there was a highly statistically significant difference between psychological wellbeing subscales in all domains among the control and study groups post-program implementation. It demonstrated that the study group's psychological wellbeing improved following program implementation as opposed to before. This might be the outcome of an emotional regulation program that addressed psychological stress and tensions and taught positive evaluation of events and incidents. This program can improve psychological well-being by lowering stress and elevating mood. This outcome supported the findings of **Abbasi et al. (2016),** who found that the infertile couples' psychological wellbeing was enhanced by the emotional regulation training.

Furthermore, the results of this research showed that, following the implementation of an emotional regulation program, there was a highly statistically significant difference between the study group's overall marital satisfactions with females' income, occupation, residence, and educational level (P=<0.001). The researchers believed that these results may be explained by the fact that women who have high education, steady jobs, live in cities, and enough income are more likely to be able to use emotional regulation techniques successfully. This could be because of improved awareness, support networks, or less stressful circumstances. This finding was consistent with **Tabatabaee et al., (2022)** conclusion that marital satisfaction levels were significantly correlated with the wife's employment and family income.

The research's findings demonstrated a highly statistically significant relation between women' age, educational level, place of residence, income, duration, and the types and causes of infertility and overall psychological well-being among the control group (those who did not receive the emotional regulation program) (P <0.001). This may be due to the fact that these elements have a direct impact on a woman's ability to psychologically cope with her infertile situation. For instance, women who are older or have lower salaries could be more psychologically stressed, but having higher education might help them cope better.

This result contradicted the findings of **Sohbati et al. (2021),** who found no significant correlation between psychological well-being and

demographic factors such as age, education, economic status, and place of residence. However, they did agree that there was a significant difference between the mean score of psychological well-being and women' educational level and length of infertility.

Additionally, the results of the current research showed that, following the implementation program, there was a highly statistically significant relationship ($P < 0.001$) between the study group's total psychological well-being and the women' occupation, residence, educational level, and types of infertility. This might be due to the emotional regulation program may have had a stabilizing effect on psychological well-being because it lessened the impact of demographic and infertility-related characteristics.

Additionally, the results demonstrated a statistically significant positive correlation between the study group's total mean score of emotional regulation after program implementation, as well as between the total mean score of marital satisfaction and both the total mean score of psychological well-being. The findings showed that psychological, physical, and interpersonal happiness are all influenced by an individual's ability to effectively regulate their emotions. In addition, emotional regulation is crucial for handling difficult situations in life. According to this research, the marital satisfaction and psychological wellbeing of the infertile women under research are generally impacted by emotional regulation. This outcome was consistent with the findings of **Abbasi et al. (2016),** who found that the emotional regulation training had a positive impact on the infertile couples' psychological wellbeing and marital satisfaction.

Conclusion

The current study concluded that, the emotional regulation program sessions applied in the current study has significantly improved the marital satisfaction and psychological wellbeing among the studied women with infertility.

Recommendations:

- It is recommended that the same protocol be implemented in medical centers and fertility clinics as a crucial component of the infertility treatment plan in order to enhance psychological adjustment and stress-coping skills due to the positive effects of emotion regulation training programs.
- Engaging spouses in emotional regulation sessions can strengthen bonds and foster understanding between partners, lowering psychological strains and raising satisfaction levels for all.
- Fertility clinic professionals, nurses, and physician should be receiving training in order to identify the psychological symptoms of infertility and direct cases to the proper treatment.
- A further study should demonstrate such a training program in various settings and with a large number of couples.

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