

# EFFECTIVENESS OF BENSON'S RELATION THERAPY ON STRESS LEVEL AND QUALITY OF LIFE AMONG WOMEN WITH INFERTILITY

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## Abstract

**Background:** The rise of infertility among women is a major challenge globally, were the women experience disturbances in physical, mental, social domains which results in lots of stress and poor quality over her life. **Purpose:** The purpose of current study was to investigate the effectiveness of Benson's relation therapy on stress level and quality of life among women with infertility. **Materials and methods:** Quasi -experimental pretest posttest control group research design was conducted in the Fertility Clinic of host institution. A total of 60 women with infertility who fulfils and meets the inclusion criteria were recruited as study participants. Using purposive sampling technique and were equally divided in both interventional and placebo group. A total of 30 study participants were allotted to the interventional group (Benson's relaxation therapy) and remaining 30study participants were allotted to the placebo group. On Day-1, demographic and clinical data were collected from the study participants, followed by that, the stress level was assessed by using Perceived Stress Scale [PSS-10] and the quality of life using Ferti QOL. For the interventional group, Benson's Relaxation Therapy were performed for two sessions per day for the duration of 1 week. **Post-Assessment:** On Day- 8, study participants were re-assessed by using Perceived Stress Scale [PSS-10] and Ferti QOL in both the interventional group and placebo group. **Results:** The study results concluded that, the pretest mean score of stress in the Interventional group was 28.63±4.63 and posttest mean score was 10.20±3.49. The mean difference score was 18.43. The calculated paired 't' test value of t = 26.239 was statistically significant at p<0.001 level. The pretest mean score of quality of life in the e interventional group was 70.43±16.53 and posttest mean score was 154.66±10.74. The mean difference score was 84.23. The calculated paired 't' test value of t = 23.908 was statistically significant at p<0.001 level. This clearly shows that after performing Benson's Relaxation Therapy the stress was significantly reduced and the quality of life was improved among the women with infertility in the Interventional group. **Conclusion:** Benson's relaxation technique proved to be an effective intervention in reducing the stress and improves the quality of life among women suffering with infertility.

**Keywords:** Benson's Relation Therapy, Infertility, Quality Of Life, Stress.

## INTRODUCTION

Infertility is the condition were the reproductive aged women is not able to conceive after one year of unprotected coitus. Globally, 10- 15% of reproductive aged couples are suffering with infertility[1].The incidence of infertility related stress ranges from 20- 93 percent.[2].The psychological stress experienced by the couples may be due to stress arising out of personal hurdles, nuptial bonding stress and pressure from social networking's.[3] The incitation of psychological distress among infertile couples is mainly due to non fulfilment to achieve the parenthood goal, loss of personal identity.[4,5] Research studies have identified and reported that 20-25 percent of

infertile women experience moderate to severe stress leading them to psychiatric illness [6]. It has been reported that, the couples with infertility experience a stressful and depressive situation in their life time, especially the couples who are suffering with primary infertility. [7] It has been reported by the researchers that, the women undergoing infertility treatment are experiencing higher level of stress [8,9,10]. The infertility related stress is typified by sadness, anxiety, depression, feeling of worthlessness associated with social isolation. All these factors will have an adverse effect on the quality of life and lifespan. It also affects the success of the ART treatment when the couples seek infertility treatment [11]

The emotional stress among women is characterized with the occurrence of tubal spasm, anovulation, vaginism. During ovulation, women involuntarily abstain from coitus. In men, the main cause of psychological hurdle is impotence which can lead to infertility. Eating disorders, psychological triggers and psychological traumas may be the factors that provokes impotence among them. It has been exhibited that infertile women exist higher level of depression when comparing with that of men with infertility. [12] Women play a vital role in every stage of an individual life and therefore their quality of life can markedly affect both the health as well as the society, ageing of the couples has an adverse impact on the quality of life as it serves as a risk factor for decreased fertility and possibility of effective treatment.[13] The predicting factors on quality of life depends on different categories of infertile populace, femininity and cultural backgrounds [14].The quality of life can be affected by individual and societal factors.[15].Research studies have identified and reported on various aspects on the quality of life among women with infertility on physical, social ,sexual , psychological effects, sexual life in presence of infertility and the factors that prevents the adaptation to infertility, revealed a declination in the scoring related to infertility and sexual related aspects.[13]

It has been identified by the investigators that many women with infertility are suffering with higher level of stress and has an observation of low quality over their lives when working as a student nurse in the fertility clinic during her clinical experience, and no research studies were conducted on impact of Benson's relaxation therapy on reducing stress among these individuals which made her to take the present study as administration of Benson's Relaxation therapy is found to play a major role in declining the stress level and enhances relaxation within them. Therefore, the objectives of current study was to assess the pretest level of stress and quality of life among women with infertility in both experimental and placebo group , to determine the effectiveness of Benson's relation therapy among women with infertility in the experimental group, to compare the posttest level of stress and quality of life among women with infertility in both experimental and placebo group and to find out the association between the level of stress and quality of life among women with infertility with their selected demographic variables.

## MATERIAL AND METHODS

**Study Design:** Quasi -experimental pretest posttest control group research design was adopted to investigate the effectiveness of Benson's relation therapy on stress level and quality of life among infertile women. **Study Setting:** The current study was conducted for the duration of 3months from January 2024 March 2024 in the Fertility Clinic among women diagnosed as infertility of host institution. **Ethical Approval:** After obtaining the ethical clearance from the Institutional Ethical Committee (IEC) of

Saveetha Institute Of Medical And Technical Sciences and a formal permission from the departmental head of Fertility Centre, the study was conducted. **Study Participants:** A total of 60 women with infertility who fulfil and meets the inclusion criteria were recruited as study participants by purposive sampling technique. 30 study participants in the experimental group and 30 study participants in the placebo group. The stress level was assessed using Perceived Stress Scale [PSS-10] and the quality of life using Ferti QOL. The women who are seeking medical attention for infertility, women with history of permanent and formal marriage, whose infertility was not due to male factors, currently living with their spouses, no history of adoptions, absence of severe psychiatric illness and no consumption of anti-psychotics during the study period, with no mourning experience during last 6 months, who are willing to participate, can read and speak Tamil or English, were included in the current study. The individuals who have who under treatment with anti-psychotics and anxiolytics, undergoing any alternative therapies including acupuncture, reflexology, aromatherapy, with history of severe co-morbidities, psychiatric disturbances, non-co-operative, were excluded. **Sampling Technique:** A total of 120 participants were recruited through non probability purposive sampling technique and were equally divided in both interventional and placebo group. A total of 60 study participants were allotted to the interventional group (Benson's relaxation therapy) and remaining 60 study participants were allotted to the placebo group (Routine hospital care) **Informed Consent:** The purpose of study was explained clearly in-depth to each of the study participant and a written informed consent was obtained from them. **Pre-Assessment:** The demographic and clinical information was gathered by using a self-structured questionnaire, followed by that, the stress level was assessed by using Perceived Stress Scale [PSS-10] and the quality of life using Ferti QOL. On Day- 1, demographic and clinical data were collected from the study participants, followed by that, they were initiated with Benson's Relaxation Therapy for two sessions per day for the duration of 1 week. **Post-Assessment:** On Day- 8, study participants were re-assessed by using Perceived Stress Scale [PSS-10] and Ferti QOL in both the interventional group and placebo group

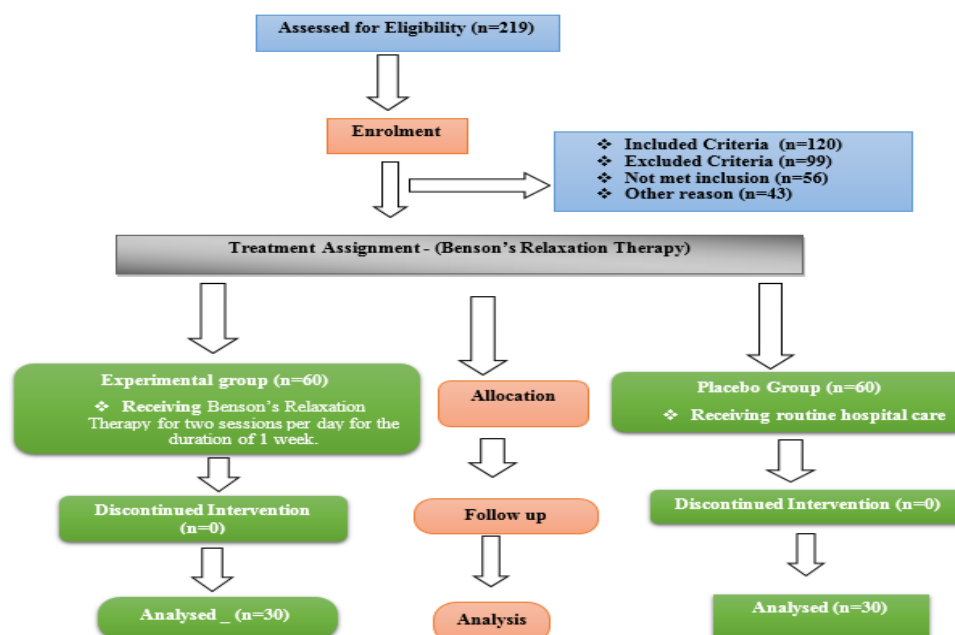


Figure: 1 Consort Flowchart For The Patient'S Recruitment Process

## RESULTS AND DISCUSSION

### *Demographic and Clinical Characteristics*

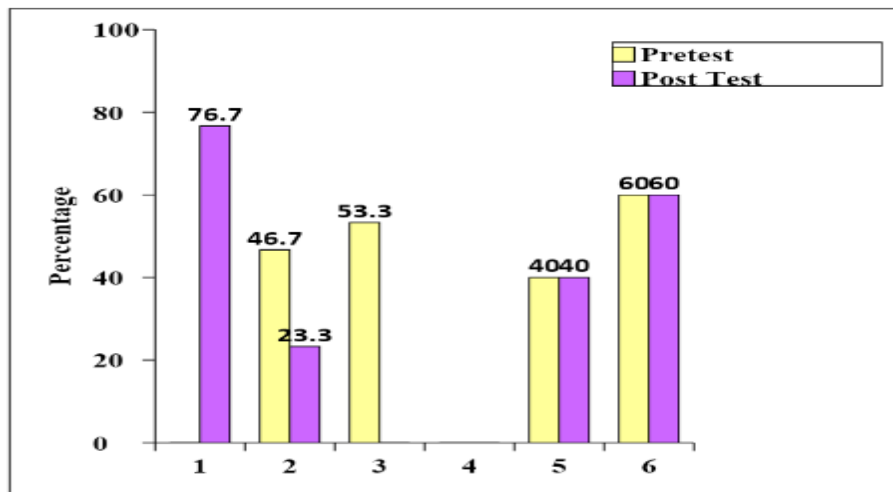
With regards to age of our study participants, majority of women with infertility 16(53.3%) in the interventional group and 18(60%) in the placebo group were aged between 31 – 40 years, with regards to educational qualification 15(50%) in the interventional group and 21(70%) in the placebo group were undergraduates, with regards to occupational status 16(53.4%) in the interventional group and 20(66.7%) in the placebo group were private employees, with regards to monthly income 14(46.7%) in the interventional group had no income and had income of between 10,000-20,000/month & 11(36.7%) in the placebo group had no income, with regards to type of residential living 18(60%) in the interventional group and 23(76.6%) in the placebo group were living in town, with regards to family support system, 8(60%) in the interventional group and 21(70%) in the placebo group had family support system, with regards to BMI (Body Mass Index) 23(76.7%) in the interventional group and 21(70%) in the placebo group had BMI in the range of 18.5 – 23.9, with regards to menarche age 23(76.6%) in the interventional group and 28(93.3%) in the placebo group were aged 10 – 12 at the time of menarche, with regards to menstrual regularity 25(83.3%) in the interventional I group and 20(66.7%) in the placebo group had irregular regularity, with regards to type of marriage 22(73.3%) in the interventional group and 23(76.7%) in the placebo group had non-consanguineous marriage, with regards to duration of married life. 23(76.7%) in the interventional group and 24(80%) in the placebo group were married <10 years. with regards to type of infertility 23(76.7%) in the interventional group and 24(80%) in the placebo group had primary infertility.

### *Assessment Of Stress Among Women With Infertility In The Interventional And placebo Group*

In the pretest of interventional group, 16(53.3%) had severe stress and 14(46.7%) had moderate stress and in the posttest after the intervention, 23(76.7%) had low stress and 7(23.3%) had moderate stress. in the pretest and posttest of placebo group 18(60%) had severe stress and 12(40%) had moderate stress. (as depicted in Table:1 and figure :2)

**Table 1: Frequency and Percentage Distribution Of Stress Among Women With Infertility In The Interventional And placebo Group N = 60(30+30)**

Stress	Interventional Group				placebo Group			
	Pretest		Post Test		Pretest		Post Test	
	No.	%	No.	%	No.	%	No.	%
Low Stress (0 – 13)	-	-	23	76.7	-	-	-	-
Moderate Stress (14 – 26)	14	46.7	7	23.3	12	40.0	12	40.0
Severe Stress (27 – 100)	16	53.3	-	-	18	60.0	18	60.0



**Figure: 2 Percentage Distribution Of Stress Among Women With Infertility In The Interventional And Placebo Group**

It has been identified and reported that, higher prevalence of infertility is reported among women's experiencing chronic stress. Under stressful conditions, the living creatures activate a stress response due to the complex involvement of various bodily systems. When stress becomes chronic, there is a hyperactivity of sympathetic nervous system which releases stress hormones and increases the risk for the individuals to have fertility issues. [16] Researches have reported that, infertility itself produces stress among couples and have a negative impact on life quality among couples and family which in turn affects the fertility treatment. [17]

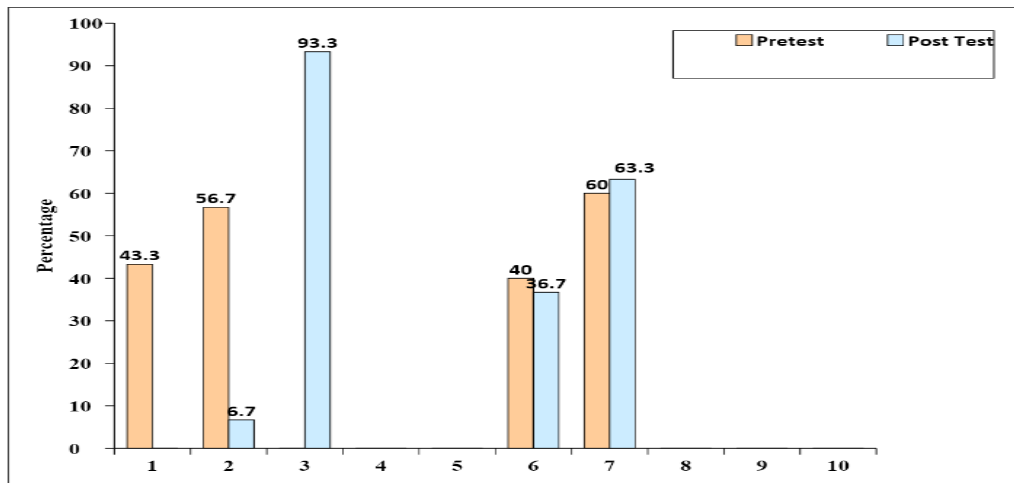
Similarly, in the current study, majority of our study participant's experience severe and moderate level of stress. The reason for stress among these study participants may be due to various factors which the investigators failed to identify the exact cause of stress. But it is evident from the above studies and our present study that the women with infertility experiences stress.

**Assessment On Quality of Life Among Women with Infertility In The Interventional And placebo Group**

In the pretest of interventional group, 17(56.7%) had poor quality of life and 13(43.3%) had very poor quality of life and in the posttest after the intervention, 29(93.3%) had average quality of life and 2(6.7%) had poor quality of life.in the pretest of placebo group, 18(60%) had poor quality of life and 12(40%) had very poor quality of life and in the post test, 19(63.3%) had poor quality of life and 11(36.7%) had very poor quality of life. (as depicted in Table:2 and figure: 3)

**Table 2: Frequency And Percentage Distribution Of Quality Of Life Among Women With Infertility In The Interventional And Placebo Group N = 60(30+30)**

Quality of Life	Interventional Group				placebo Group			
	Pretest		Post Test		Pretest		Post Test	
	No.	%	No.	%	No.	%	No.	%
Very poor QoL (0 – 36)	13	43.3	-	-	12	40.0	11	36.7
Poor QoL (37 – 72)	17	56.7	2	6.7	18	60.0	19	63.3
Average QoL (73 – 108)	-	-	29	93.3	-	-	-	-
Good QoL (109 – 144)	-	-	-	-	-	-	-	-
Good QoL (145 – 18)	-	-	-	-	-	-	-	-



**Figure: 3 Percentage Distribution On Quality of Life Among Women with Infertility In The Interventional And Placebo Group**

The type, duration and occurrence of infertility have an impact over the quality of life among couples suffering with infertility.[18] A cross sectional descriptive study was conducted among 102 women's suffering infertility aiming in assessing the quality of life and the end results of study concluded that, infertility women experience poor quality of life in aspects of physical, social and emotional life. [19] A cross sectional study was conducted among 220 fertile and infertile women aiming in investigating the association between infertility and quality of life. The quality of life was assessed using WHO-QOL and the results revealed that, infertile women had reduced the quality of life. [20].

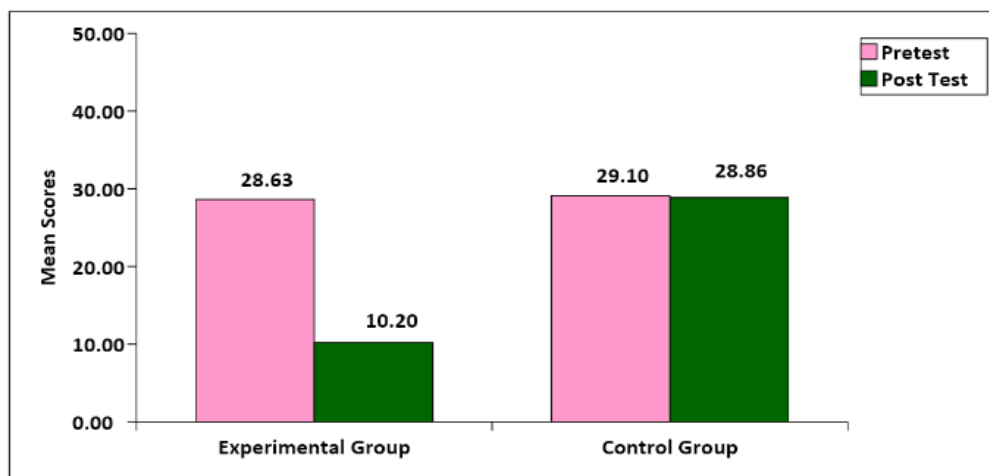
It has been evident from the above studies and from the present study, the women affected with infertility are affected in various aspects in their life journey which in turns have an adverse impact over their quality of life.

***Effectiveness Of Benson's Relaxation Therapy On Stress And Quality Of Life Among Women With Infertility In The Interventional Group And Comparison In The Placebo Group***

The pretest mean score of stress in the Interventional group was  $28.63 \pm 4.63$  and posttest mean score was  $10.20 \pm 3.49$ . The mean difference score was 18.43. The calculated paired 't' test value of  $t = 26.239$  was statistically significant at  $p < 0.001$  level. This clearly shows that after administered with Benson's Relaxation Therapy the stress was significantly reduced among the women with infertility in the Interventional group. The pretest mean score of stress in the placebo group was  $29.10 \pm 4.91$  and posttest mean score was  $28.86 \pm 5.12$ . The mean difference score was 0.20. The calculated paired 't' test value of  $t = 1.070$  was not statistically significant at  $p < 0.05$ . This clearly infers that there was no statistically significant reduction in the stress level among the women with infertility in the Placebo Group who had undergone normal hospital routine measures. The calculated student independent 't' test value of  $t = 0.388$  in the pretest shows that there was no statistically significant difference between the pretest level of stress between the two groups. The calculated student independent 't' test value of  $t = 16.479$  in the posttest shows that there was statistically significant reduction in the posttest level of stress among the women with infertility in the interventional group than the placebo group (as depicted in Table:3 and figure :4)

**Table 3: Effectiveness Of Benson’s Relaxation Therapy On Stress Among Women With Infertility In The Interventional Group And Comparison In The Placebo Group. N = 60(30+30)**

Group	Pretest		Post Test		Mean Difference score	Paired ‘t’ test & p-value
	Mean	S.D	Mean	S.D		
Interventional Group	28.63	4.63	10.20	3.49	18.43	t = 26.239 p=0.0001, S***
Placebo Group	29.10	4.91	28.86	5.12	0.20	t = 1.070 p=0.293, N.S
<b>Mean Difference score</b>	0.47		18.66		***p<0.001 S – Significant N.S – Not Significant	
<b>Student Independent ‘t’ test value</b>	t = 0.378 p=0.707 N.S		t = 16.479 p=0.0001 S***			



**Figure: 4 Comparison Of Pretest And Post Test Level Of Stress Among Women With Infertility Between The Interventional And Placebo Group**

A clinical trial was conducted among 76 women diagnosed with infertility aiming to analyze the effect of relaxation technique on reducing the stress. The stress level was assessed using Newton’s stress questionnaire and the participants were recruited based on inclusion criteria.

Benson’s relaxation technique was performed for 30 minutes over a period of 6 sessions and the end results of research study revealed that there was a significant reduction in the level of stress among these study participants. [21] As there were no literatures available for reducing stress level among women with infertility using Benson’s relaxation technique, the investigators of the present study were interested to perform Benson’s relaxation technique for declining the stress level among our study participant’s which gave a positive outcome results, but the exact physiological mechanism of Benson’s relaxation technique on reducing stress was unidentifiable by the investigators.

After performing Benson’s relaxation technique, there was a significant reduction in the level of stress in the interventional group. Benson’s relaxation technique is considered as an inexpensive, fast method which can be easily performed. [22]

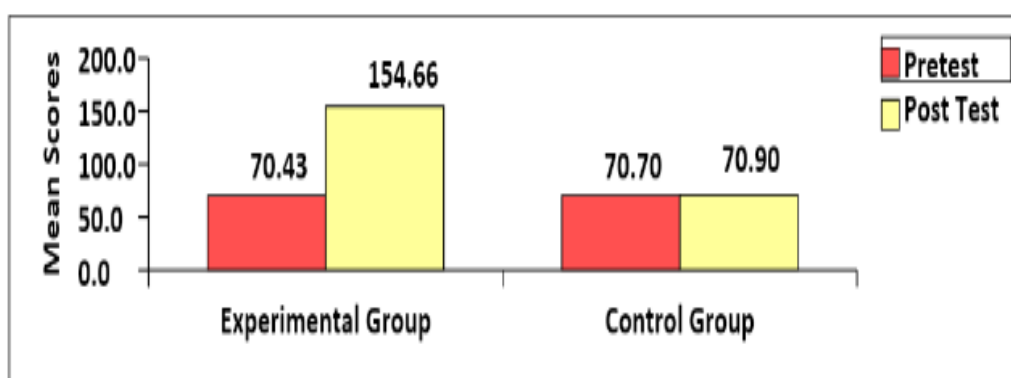
***Effectiveness of Benson’s Relaxation Therapy On Quality of Life Among Women with Infertility In The Interventional Group And Comparison In The Placebo Group.***

The pretest mean score of quality of life in the e interventional group was 70.43±16.53 and posttest mean score was 154.66±10.74. The mean difference score was 84.23. The calculated paired 't' test value of  $t = 23.908$  was statistically significant at  $p < 0.001$  level. This clearly shows that after administered with Benson's Relaxation Therapy the quality of life of women with infertility was significantly improved among the infertile women in the interventional group.

The pretest mean score on quality of life in the placebo group was 70.70±16.53 and posttest mean score was 70.90±16.49. The mean difference score was 0.20. The calculated paired 't' test value of  $t = 1.795$  was not statistically significant at  $p < 0.05$ . This clearly infers that there was no statistically significant improvement in the level of quality of life among the women with infertility in the placebo group who had undergone normal hospital routine measures. The calculated student independent 't' test value of  $t = 0.062$  in the pretest shows that there was no statistically significant difference between the pretest level of quality of life between the two groups. The calculated student independent 't' test value of  $t = 23.310$  in the posttest shows that there was statistically significant improvement in the posttest level of quality of life among the women with infertility in the interventional group than the placebo group. (as depicted in Table:4 and figure :5)

**Table 4: Effectiveness Of Benson's Relaxation Therapy On Quality Of Life Among Women With Infertility In The Interventional Group And Comparison In The Placebo Group. N = 60(30+30)**

Group	Pretest		Post Test		Mean Difference score	Paired 't' test & p-value
	Mean	S.D	Mean	S.D		
Interventional	70.43	16.53	154.66	10.74	<b>84.23</b>	<b>t = 23.908</b> <b>p=0.0001, S***</b>
Placebo	70.70	16.53	70.90	16.49	0.20	t = 1.795 p=0.083, N.S
<b>Mean Difference score</b>	0.27		<b>83.76</b>		***p<0.001 S – Significant N.S – Not Significant	
<b>Student Independent 't' test value</b>	t = 0.062 p=0.950 N.S		<b>t = 23.310</b> <b>p=0.0001</b> <b>S***</b>			



**Figure: 5 Comparison Of Pretest And Post Test Level Of Quality Of Life Among Women With Infertility Between The Interventional Group Placebo Group**

As no literatures related to Benson's relaxation technique on improving the quality of life among women with infertility are unavailable. As our current study proves to have an positive effect on improving the quality of life, further studies are need to be conducted to assess the impact of our present intervention in future.



### **Association Of Post Test Level Of Stress And Quality Of Life Among Women With Infertility With Their Selected Demographic Variables.**

The demographic variables menarche age ( $\chi^2=7.056$ ,  $p=0.029$ ) and menstrual regularity ( $\chi^2=4.509$ ,  $p=0.034$ ) had shown statistically significant association with posttest level of stress among infertile women at  $p<0.05$  level and the other demographic variables had not shown statistically significant association with posttest level of stress among infertile women at  $p<0.05$  level in the interventional group. The demographic variable BMI ( $\chi^2=13.251$ ,  $p=0.001$ ) had shown statistically significant association with posttest level of quality of life among infertile women at  $p<0.05$  level and the other demographic variables had not shown statistically significant association with posttest level of quality of life among infertile women at  $p<0.05$  level in the interventional group.

### **CONCLUSION**

Based on the findings of the current study, it was evident that, there was significant effect on performing Benson's relaxation technique among women with infertility reduced the stress level and improved the quality of life. So, this technique can be imitated as a part of nursing care by the fertility nurses to alleviate the stress among women affected with infertility.

### **Acknowledgment**

Authors would like to appreciate all the study participants for their co-operation to complete the study successfully.

### **Authors Contribution**

Padma priya developed the study concept and design, Prathiba collected the clinical data, Linda Xavier and Kavitha performed the statistical analysis and interpretation of data, Muthulakshmi study supervision, Padma priya critical revision of the manuscript for the intellectual content and drafting of the manuscript. All authors read and approved the final manuscript.

### **Conflict of Interest and Finding Support**

The authors for the current project has no financial investment and are not the investor in any of the health sectors related to the project and not received any consultation payments. They did not have any patents linked to the project. The authors have no personal or professional contact with any of the health care organisations.

### **References**

- 1) Simionescu, G., Doroftei, B., Maftei, R., Obreja, B. E., Anton, E., Grab, D., ... & Anton, C. (2021). The complex relationship between infertility and psychological distress. *Experimental and Therapeutic Medicine*, 21(4), 1-1.
- 2) Teklemicheal, A. G., Kassa, E. M., & Weldetensaye, E. K. (2022). Prevalence and correlates of infertility related psychological stress in women with infertility: a cross-sectional hospital based survey. *BMC psychology*, 10(1), 1-8.
- 3) Martins, M. V., Peterson, B. D., Costa, P., Costa, M. E., Lund, R., & Schmidt, L. (2013). Interactive effects of social support and disclosure on fertility-related stress. *Journal of Social and Personal Relationships*, 30(4), 371-388.
- 4) Thoits, P. A. (1991). On merging identity theory and stress research. *Social psychology quarterly*, 101-112.
- 5) Thoits, P. A. (2013). Self, identity, stress, and mental health. *Handbook of the sociology of mental health*, 357-377.

- 6) Wischmann, T., Stammer, H., Scherg, H., Gerhard, I., & Verres, R. (2001). Psychosocial characteristics of infertile couples: a study by the Heidelberg Fertility Consultation Service'. *Human reproduction*, 16(8), 1753-1761.
- 7) Prakruthi, R. A. (2018). *A Study on Obstetric Morbidity Pattern in Municipal Corporation Referral Hospital, Bangalore* (Doctoral dissertation, Rajiv Gandhi University of Health Sciences (India)).
- 8) Lykeridou, K., Gourounti, K., Sarantaki, A., Loutradis, D., Vaslamatzis, G., & Deltsidou, A. (2011). Occupational social class, coping responses and infertility-related stress of women undergoing infertility treatment. *Journal of Clinical Nursing*, 20(13-14), 1971-1980.
- 9) McQuillan, J., Greil, A. L., White, L., & Jacob, M. C. (2003). Frustrated fertility: Infertility and psychological distress among women. *Journal of Marriage and Family*, 65(4), 1007-1018.
- 10) Verhaak, C. M., Smeenk, J. M., Evers, A. W., Kremer, J. A., Kraaimaat, F. W., & Braat, D. D. (2007). Women's emotional adjustment to IVF: a systematic review of 25 years of research. *Human reproduction update*, 13(1), 27-36.
- 11) Jaber, D. J., Basheer, H. A., Albsoul-Younes, A. M., Elsalem, L. M., Hamadneh, J. M., Dweib, M. K., & Ahmedah, H. T. (2022). Prevalence and predictive factors for infertility-related stress among infertile couples. *Saudi Medical Journal*, 43(10), 1149-1156.
- 12) Simionescu, G., Doroftei, B., Maftai, R., Obreja, B. E., Anton, E., Grab, D., ... & Anton, C. (2021). The complex relationship between infertility and psychological distress. *Experimental and Therapeutic Medicine*, 21(4), 1-1.
- 13) Kiani, Z., Simbar, M., Hajian, S., Zayeri, F., RashidiFakari, F., & Chimeh, F. J. (2022). Investigating different dimensions of infertile women's quality of life: a descriptive cross-sectional study. *BMC Public Health*, 22(1), 1-11.
- 14) Namdar, A., Naghizadeh, M. M., Zamani, M., Yaghmaei, F., & Sameni, M. H. (2017). Quality of life and general health of infertile women. *Health and Quality of life Outcomes*, 15(1), 1-7.
- 15) Direkvand-Moghadam, A., Delpisheh, A., & Direkvand-Moghadam, A. (2014). Effect of infertility on the quality of life, a cross-sectional study. *Journal of clinical and diagnostic research: JCDR*, 8(10), OC13.
- 16) Lewiński, A., & Brzozowska, M. (2022). Female infertility as a result of stress-related hormonal changes. *Gynecological and Reproductive Endocrinology and Metabolism*, 3(2-3).
- 17) Lei, A., You, H., Luo, B., & Ren, J. (2021). The associations between infertility-related stress, family adaptability and family cohesion in infertile couples. *Scientific reports*, 11(1), 24220.
- 18) Suleiman, M., August, F., Nanyaro, M. W., Wangwe, P., Kikula, A., Balandya, B., ... & Muganyizi, P. (2023). Quality of life and associated factors among infertile women attending infertility clinic at Mnazi Mmoja Hospital, Zanzibar. *BMC Women's Health*, 23(1), 400.
- 19) Sher, N., Kausar, S., Naz, F., Kausar, S., & Shabbir, N. (2023). Estimation Of Quality Of Life Among Infertile Women Seeking Treatment In Services Hospital, Lahore. *Journal of Population Therapeutics and Clinical Pharmacology*, 30(17), 1465-1471.
- 20) Bagheri, F., Nematollahi, A., Sayadi, M., & Akbarzadeh, M. (2021). Comparison of the quality of life in fertile and infertile women admitted to Shiraz's healthcare centers during 2017-2018. *Shiraz E-Medical Journal*, 22(6).
- 21) Valiani, M., Abediyan, S., Ahmadi, S. M., Pahlavanzadeh, S., & Hassanzadeh, A. (2010). The effect of relaxation techniques to ease the stress in infertile women. *Iranian Journal of Nursing and Midwifery Research*, 15(4), 259.
- 22) Raipure, A., & Patil, S. (2023). Comparative Efficacy of Mitchell's and Benson's Relaxation Techniques in Alleviating Pain and Improving Quality of Life Among Patients With Premenstrual Syndrome: A Randomized Controlled Trial. *Cureus*, 15(8).