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Effect of yoga on psychological distress among women receiving treatment for infertility

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Abstract

Background: Infertility among women has been associated with significant psychological distress, anxiety, and depression. yoga therapy is useful in the management of anxiety, depression, and psychological distress.
Aim: To review studies on the effectiveness of yoga in reducing psychological distress and improving clinical outcomes among women receiving infertility treatment.
Methodology: PubMed, ScienceDirect, and Google Scholar databases were searched for studies using the following inclusion criteria: studies published in English, those published between 2000 and 2018, published in peer-reviewed journals, and those with Yoga as an intervention. Review articles, studies without any yoga interventions for infertility, and male infertility were excluded. The keywords included in the literature search were: Yoga, Mindfulness, Relaxation technique, Stress, Distress, Anxiety, Infertility, *In Vitro* Fertilization (IVF), and Assisted Reproductive Technology (ART).
Results: Three studies satisfied the selection criteria. Two studies involved Hatha yoga intervention and one study used a structured yoga program. The variables assessed in these studies were: (1) anxiety, (2) depression, (3) emotional distress, and (4) fertility-related quality of life. All the studies reported an improvement in the anxiety scores after a yoga intervention.
Discussion: Further study can be conducted on the woman who is not able to conceive because of workload, anxiety, depression [which can be the one reason for infertility].
Conclusion: Yoga therapy may be potentially useful in improving anxiety scores among women suffering from infertility. More studies are needed in this area to establish the role of yoga as an adjuvant during the treatment of infertility.

Keywords: anxiety, depression, distress, infertility, yoga

Introduction

Infertility is defined as "a disease of the reproductive system characterized by failure to achieve clinical pregnancy after 12 months or more of regular unprotected sexual intercourse". Infertility is defined as the inability to procreate, carry or deliver a baby naturally. The majority of specialists describe infertility as being unable to get pregnant after having tried for at least one year. Women who can get pregnant but have recurrent miscarriages are also considered to be infertile. The World Health Organization's definition of infertility is referred to as following a period of 24 months of trying to conceive. Infertility affects an estimated 10-15% of reproductive age couples worldwide. The percentage of couples seeking infertility treatment has risen dramatically in recent years as a result of factors such as postponement of childbearing in women, expansion of newer and more successful techniques for infertility treatment and increased publicity of these available therapies. The relationship between infertility and psychological stress is complex. Infertility is responsible for a great deal of psychological trauma to many affected couples of reproductive age group. It also affects them socially, economically. The countries with high fertility rates are paradoxically showing increasing incidence of infertility, this is termed as "barrenness amid plenty". Infertility can cause a multitude of adverse social and psychological consequences that included aggravated mental distress. Infertility has been the cause for anxiety, depression, and psychosomatic 5-8 complications. On the one hand, a previous study indicated that infertile couples are subject to greater stress and have an increased risk of developing psychological disorders compared with healthy couples. On the other hand, high levels of psychological distress have been revealed to increase infertility. The main factors that may lead to increased stress in couples who try to conceive, psychological stress as the reason for infertility and the therapies that can help decrease psychological distress and increase pregnancy chances are discussed. Improving the psychological milieu of the couple especially the female partner is important while evaluating and managing subfertility.

Does infertility cause stress?

Infertility can cause psychologically distress, emotionally stress and financial difficulties for both partners. Typical reactions to infertility include shock, sadness, depression, anger and frustration, loss of self-esteem and self-confidence and a general loss of sense of control. Although infertility is not a life-threatening issue, it is still considered a stressful life experience for couples. The high stress of infertility might be attributed to the fact having a child is considered to be important in general society as Children are building blocks for maintaining family bond and help bridging the generation gap. Having a child is considered as proof of manhood/woman hood; a symbol of fruitfulness and the child is a precious heir to continue the family name. The social consequences of infertility mainly affect the women, although men are equally responsible for infertility. All this profoundly affects the stress of the infertile couple sloughing against the entire stigma and opting to try infertility evaluation and treatment. There-fore, couples with infertility problems may reduce social interaction, especially with pregnant women and friends who have children. Infertility can also cause a great deal of financial stress.

Being infertile and wanting to cure it can be very expensive! A huge amount of money is required for the treatment and tests. With the advent of modern assisted reproductive techniques such as IVF, which require expertise and advanced technology, the extent the expenses incurred while undergoing IVF can be huge. The patients often run from pillar to post often bankrupting them, mortgaging property, all to fulfil the dream of having a baby. Adding all the previously mentioned points, it leads to consensus that infertility can cause huge amount of stress

Does stress cause infertility?

It is a well-known fact that increasing stress levels and certain mental disorders like anorexia significantly alters woman's the HPO axis of the woman. This alters the reproductive hormonal milieu and can contribute to ovulatory dysfunction and subfertility. Men with stress issues often have erectile and coital dysfunction again contributing to subfertility. Several studies have been done on whether anxiety or depression, contributes to infertility as the major factor.

- Women with a history of depression are twice as likely to subsequently experience infertility when compared to women with no such history.
- Yet another study showed a higher level of luteinizing hormone in depressed woman that can render them sub fertile.

The more, anxiety or depression the women expressed before undergoing IVF, the less likely they were to get pregnant. Studies have been conducted worldwide correlating the distress levels in women prior, or at the beginning of, an IVF cycle. Majority studies showed increased distress levels are indeed associated with diminished IVF success rates i.e. decreased pregnancy rates. Although some of the studies found no relationship between distress and pregnancy rates, but most of them supported the theory.

Method

Design

Convenient sampling technique was used bases on cross-sectional study design.

Objectives

1. To examine the association among quality of life, coping strategies and psychological distress in women with primary and secondary infertility in Pakistan.
2. To study the mediating role of quality of life between coping strategies and psychological distress in women with primary and secondary infertility in Pakistan.
3. To investigate differences between women with primary and secondary infertility on quality of life, coping strategies and psychological distress.
4. To identify prevalence rates of demographic variables in Women with primary and Secondary Infertility in Pakistan.

Participants

Purposive sampling technique was used based on cross-sectional design. 150 women (Primary infertility, n =76; Secondary infertility, n = 74) age ranged from 20 to 40 years were recruited from different hospitals of Islamabad and Rawalpindi, Pakistan. Inclusion criteria was followed as the present study included only those women who had diagnosed infertile problems. Infertile women comprised into primary and secondary infertility. The age range of infertile women was 18-42 years and duration of infertility was from 1-20 years.

Measures

Brief cope scale. It was originally developed by Carver (1997) and translated into Urdu by Akhtar (2005). It consisted of 28 items which is further categorized into 14 subscales including self-distraction, active coping, denial, substance abuse, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. Response rated in a 4-point Likert format as 1 (never), 2(very less), 3(sometimes), and 4 (a lot). In present study only four subscales of Brief COPE namely: active avoidance coping, problem-focused coping, positive coping and religious/denial coping were used.

Quality of life-BREF (WHOQOL-BREF). It was Original developed by Jahanlou and karami (2011). It comprises of 26 items. It has four subscales as physical health, psychological health, social relationships, and environment. It was used to measure quality of life in women, response are rated five point likert scales.

Psychological distress scale. It was Original developed by Veit and Ware (1983). It consisted of 24 items. It was used to measure overall psychological distress, and depressive or anxiety symptoms. Items response are rated on a 6-point Likert-type scale. Participants rated their feelings over the past month, with higher scores indicating greater distress. Items 2, 3, 8, 9, 11, 13, 14, 15, 16, 18, 19, 20, 21, 24, 25, 27, 28, 29, 30, 32, 33, 35, 36 and 38 are included as a psychological distress scale from mental health inventory.

Result

Table 1: Demographic description Primary infertility N=76 Secondary infertility of variables (N=150) N=74 Sample characteristics f % f %

Sample characteristics Age	**f%**		**f%**	
18- 24	23	30.3	31	41.9
25-30	33	73.7	29	81.1
31-36	15	93.4	12	97.3
36-42	5	100	2	100
Education				
Illiterate	10	23.7	5	6.8
Primary	20	36.8	11	21.6
Secondary	28	63.2	34	67.6
Higher	18	100	24	100
Family structure				

Nuclear	23	69.7	51	68.9
Joint	53	100	23	100
Duration of infertility				
01-May	50	65.8	56	75.7
06-Oct	20	92.1	15	95.9
More than 10	6	100	3	100

Table 2: Mean differences between Primary infertility and Secondary infertility on brief coping strategies, quality of life, psychological distress (N=150)

Primary infertility (n=76)		**Secondary infertility** (n= 76)		**95%Cl**		
Variables M Active avoidance	SD	M SD	T (df)	p LL	UL	Cohen's d
25.31 cope	4.75	25.77 3.29	0.69	0.48 1.78	0.85	-
Problem focus cope 22.65	4.68	22.71 2.87	0.22	0.82 1.4	1.11	-
Religious denial cope 20.29	3.76	21.39 2.83	1.99	0.04 2.17	0.011	0.51
Positive cope 12.21	2.34	12.77 1.77	1.64	0.1 1.23	0.11	-
Quality of life 87.58	9.83	87.58 9.15	0.01	0.99 3.08	3.07	-
Psychological distress 78.7	16.41	82.43 19.33	1.26	0.2 9.55	2.03	-

Table 3: The mediating role of quality of life between coping strategies and psychological distress for primary and secondary infertile women (N=150) Quality of Variables Psychological Distress Life Primary Infertile Women (N=76) B S.E. β p B S.E. β p

-0.82 0.34 strategy Active avoidant	**-0.26**	**0.01**
-0.01 0.56 coping strategy Problem focus	-0.01	0.98
-1.71 0.91 coping strategy	-0.2	0.06
Positive coping -1.83 0.65 strategy Religious and	-0.35	0
denial coping -1.32 1.1 strategy	-0.11	0.23
Quality of Life -0.81 0.16 Secondary Infertile Women (N=74)	-0.47	***
Positive coping -1.26 0.5 strategy	-0.28	0.01
Active avoidant -0.31 0.52 coping strategy	-0.05	0.55
Problem focus -2.87 0.74 coping strategy	-0.31	***
Positive coping -0.53 0.72 strategy	-0.06	0.45
Religious/denial -1.11 1.2 coping strategy	-0.07	0.35
Quality of Life -1.22 0.14	-0.68	***

Procedure

This present study was approved from Department of Psychology, Foundation University Islamabad, Pakistan. This study was also performed through guideline of American Psychological Association (APA). 150 women (Primary infertility, n =76; Secondary infertility, n = 74) age ranged from 20 to 40 years were recruited from different hospitals of Islamabad and Rawalpindi, Pakistan. Verbal and written inform consent were obtained from all participant of study. To conduct present study, permission was taken from higher authority of hospitals after that verbal instructions were provided to study participants. Three scales were used to measure quality of life, psychological distress, and coping styles. Correlation and moderation analyses were used to confirmed study hypotheses. Descriptive analysis was used to check prevalence of demographic variables in primary and secondary infertility.

Further, correlational analysis was applied to examine association among quality of life, psychological distress, and coping strategies in primary and secondary infertility.

Furthermore, mediation analysis was utilized to investigation the mediating role of quality of life between psychological distress and coping styles in primary and secondary infertility.

Results

In the Table 2, Results of current study shown overall alpha reliability coefficient of all scales are satisfactory for primary and secondary infertile women. In the Table 2, the results revealed that active avoidance coping was statically positively significant associated with quality of life and psychological distress for primary infertile women. Problem focused coping strategy was significantly positive associated quality of life and psychological distress.

Further, religious denial coping strategy was significantly positive quality of life and psychological distress. Moreover, positive coping strategy was statistically significantly positive associated quality of life and psychological distress. However, Quality of life was significantly negatively associated with psychological distress for primary infertile women. In the Table 2, the results revealed that religious denial coping strategy was statically positively significant associated with psychological distress for secondary infertile women. Whereas, active avoidance, problem focused, and positive coping strategies were non-significantly associated quality of life and psychological distress. Moreover, quality of life was significantly negatively associated with psychological distress for secondary infertile women. In Table 3, the findings of current study revealed active avoidance coping, problem focus, positive coping strategies were found statistically non-significant difference between primary and secondary infertility women. Religious denial coping strategy was also found significant difference between primary and secondary infertility women. The result revealed that secondary infertility women had more prevalence of religious denial coping strategy as compare to primary infertile women. Moreover, there was found non-significant difference between primary and secondary infertility on psychological distress and quality of life.

In Table 4, The results of the study's model fit indices revealed data adequately fit for present study model;

RMSEA,.05(.06,.04), p <.15, $\chi 2(12)$ = 16.96, x2/*df* = 1.41, TLI =.97, NFI =.98, CFI =.99, IFI=.96. In Table 4, the results of present study revealed that positive coping strategy was statically negatively significant predicting quality of life (β=-.26, p<.01) and psychological distress (β=-.35, p<.000) for primary infertile women. Whereas, findings also demonstrated that positive coping strategy was statically negatively significant predicting quality of life (β =.28, p <.01) and psychological distress (β=-.06, n's) for secondary infertile women. Further, the findings revealed that active avoidant coping strategy was statically non-significant predicting psychological distress for primary and secondary infertile women. Moreover, the results of present study illustrated that religious/denial coping strategy was statically non-negatively significant predicting psychological distress for primary and secondary infertile women. The finding shown that quality of life was statically negatively significant predicting psychological distress (β=-.47, p<.000) for primary infertile women. However, the finding shown that quality of life was statically negatively significant predicting psychological distress (β=-.68, p<.000) for secondary infertile women. These results suggested quality of life was partial mediator between positive coping styles and psychological distress for secondary infertile women.

Conclusion

Most of the couples suffering from infertility report it to be the most stressful and depressing period of their life. Stress can be a contributor to infertility and can adversely affect the treatment success, Recent scientific evidence suggest that psychological therapy, especially mind body therapy to counter stress can significantly improve pregnancy rates in women undergoing ART. The diagnosis of infertility can be an overwhelming burden for couples. This diagnosis may lead to major psychiatric disorders such as depression, anxiety and low self- esteem. Therefore, couples should be offered counselling and support as they undergo infertility treatment. It has been well documented that psychological interventions for couples with infertility have the capacity to reduce symptoms of anxiety and depression and significantly increase pregnancy rates. Yoga is an ideal mind body therapy that is indigenous and one that can be effectively applied in the Indian scenario to optimize the psychological milieu of the sub fertile undergoing treatment. Infertility and ART from well-structured Reproductive Biology Centre at MAMC, can greatly reduce the financial burden of the infertile couple and further reduce their stress levels. Therefore, although the psychological effects of infertility can be significant, the majority of patients can be helped with the

proper intervention to achieve some type of resolution: Whether individuals become parents to biological kids, adopt kids or decide to not have children. Thus stress reducing strategies and low cost infertility treatment facility offer to be the ideal combination to fulfil the dreams of parenthood for the suffering subfertile couples in India.

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