Original Article

The Emotional Impact of Infertility on the Psychology of the Infertile Couple

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ABSTRACT

Objective: To evaluate psychological effects on the male and female patients presenting with Infertility.
Study Design: Cross-Sectional study
Place and Duration of Study: This study was conducted at the Sindh Institute of Reproductive Medicine, Karachi from April 2021 to October 2021.
Materials and Methods: Data was collected by simple convenience sampling method after informed consent. All male and female patients presenting with complaint of Primary or Secondary Infertility were included. Patients with already diagnosed Psychological disorders were excluded. A total of 312 patients mostly couples were interviewed on DASS21 questionnaire.
Results: Total 312 patients; 186 (59.6%) were females & 126 (40.4%) were males. Mild depression in 43 (13.8%), 86 (28.5%) had moderate while 32 (10.3%) had severe depression with female predominance. The P value was<0.001. Mild anxiety in 52 (16.7%), moderate in 52 (16.7%) & severe in 45 (14.4%). P value was <0.001. Mild stress was seen in 37(11.9%), 30 (9.6%) had moderate & 21 patients (6.7%) had severe stress P value was 0. 026..
Conclusion: Infertility affects the quality of life &personality of the couple. It is a major life event that brings about social and psychological problems & is responsible for low self-esteem and fear for tomorrow.

Key Words: infertility, psychology, male, female, depression, anxiety, stress.

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INTRODUCTION

The World Health Organization defines infertility as the "the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse". It affects 9 % of couples of reproductive age throughout the world. [1]

Infertility affects the personal and marital life of couples exposing people to extreme psychological stresses which results in loss of self-confidence & self-respect.

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The couples blame each other for childlessness. As time passes, the stressed infertile couples are eventually a prey to depression and anxiety .[2]

Infertility is not only a social embarrassment but it has negative effects on treatment as well. Obstetricians should consider that reducing mental and social problems may lead to increased treatment satisfaction and fertility.[2]

Infertility is an important cause of social isolation amongst couples who avoid their family and friends. Infertile couples most commonly suffer from anxiety. [3]

Researchers have identified that infertility makes a woman dependent and more anxious than fertile women. They lose self-esteem and are very concerned about their femininity and reproductive capacity as they are childless. Not only women, but males are also affected. This emotional stress is a cause of impotence in males. This is a type of chemical reaction. Stress affects ovulation by disturbing neurotransmitters and hormones like catecholami; nes, prolactin, adrenal steroids, endorphins, and serotonin. This is a vicious circle and further aggravated by habitual abortion or delay in ability to conceive. As in many sections of medicine, the role of counselling is outstanding as part of the initial infertility evaluation, a complement to treatment and is an adjunct in patient understanding about the nature and acceptance of their infertility related problems. To reduce stresses among infertile

couple, they are asked to adopt a child. The statistical evidence is against this concept of pregnancy after adoption but in experience, a small percentage of patients have been successful which supports the hypothesis that stress plays a vital role in modulating the neuroendocrine status of the infertile couple. So in conclusion, a reduction in stress can be beneficial as it alters the neuroendocrine status of the infertile couple.[4]

Researches carried out on the relationship between infertility and mental state has revealed that stress affects the infertility treatment as well. Patients who suffer from depression and anxiety have poor pregnancy outcomes if they are planned for assisted reproductive techniques.[5]

Stress disturbs the reproductive physiology of the couple. Stressed women have irregular cycles & do not ovulate normally leading to problems with ovulation &inability to conceive. Infertile stressful males may have an abnormal semen analysis with oligospermia reduced motility and morphologically abnormal sperms when compared to semen analysis of males without stress. Women are more psychologically stressed than males not only because of their inability to conceive but also their concerns for infertility treatment which includes taking gonadotrophic hormones, investigations, invasive interventions and procedures. They exhibit hostile behavior and cognitive defect. The reproductive performance of an infertile woman is reduced if stress levels are high during her menstrual cycle ultimately resulting in failure to form fertilized oocytes.[6]

Infertile couples who undergo assisted reproductive techniques (ART) do suffer from psychiatric disturbances. One of the reasons could be that ovulation inducing drugs like clomiphene, leuprolide, and gonadotropins can cause anxiety, depression, and irritability.[7]

The psychological distress promotes oxidative stress and inflammation in the uterus which affects the fertility potential of the patient. The adoption of certain psychological interventions may affect pregnancy outcome.[8]

Infertile couples are stressful. The rising incidence is because of late childbearing. This is because it affects psychological health of the married couple and affects quality of married life with fears of divorce and sexual disorders leading to despair and depression. Also, the latest treatment approaches and technologies like IVF, ART for infertility are stressful if unsuccessful.[9]

Psychological consultation like mindfulness based cognitive group therapy can be helpful for infertile stressed patients and can improve chances of pregnancy.[10]

This paper is about how the stress of infertility can manifest as psychological changes in the infertile couple.

MATERIALS AND METHODS

This study was planned on infertile couples attending the out patients department at Sindh institute of Reproductive medicine, a busy IVF center in Karachi from 10th April till 10th October 2021. It was approved by the Ethical review committee with IRB Reference number ERC/S2O/P-006. The data was collected by using a simple convenient sampling method. All patients who attended infertility OPD of SIRM were specifically asked to get enrolled in this study after informed consent. A total of 312 patients calculated by using the formula $n=z^2(1-P)/d^2$ were interviewed which mostly included couples. Inclusion criteria were all male and female patients presenting with the complaint of Primary or Secondary Infertility. The Eligibility Criteria also included willingness to participate in the study. The exclusion criteria included already diagnosed Psychiatric disorders - mood (affective), delusional & behavioral disorders & those unwilling to participate in the study.

In total, 312 patients with either primary or secondary infertility were interviewed. Couples (male and female) were interviewed separately on DASS21 questionnaire. Some of the couples and especially the male partners refused to be interviewed.

The DASS 21 is a 21 item questionnaire which has been planned to assess the intensity of Depression and Anxiety and based on the responses, scoring is done. Accordingly, the DASS assesses the severity of a patient's symptoms and means by which a patient's response to treatment can also be measured. The letters D (Depression), A (Anxiety) and S (Stress), indicate the scale to which each item belongs. For each scale (D, A & S) sum the scores for identified items. Because the DASS 21 is a short form version of the DASS (the Long Form has 42 items), the final score of each item groups (Depression, Anxiety and Stress) needs to be multiplied by two (x2). This questionnaire is available in both English and Urdu versions.

RESULTS

A total of 312 patients have been included. Out of 312 patients, 186 (59.6%) were females while 126 (40.4%) were males (Table 1). Majority of females were in the age range of 25 – 35 years. Depression: Out of 312 patients, 43 (13.8%) of patients had mild depression, 89 (28.5%) had moderate while 32 (10.3%) had severe depression & 21 patients, (6.7%) experienced extremely severe depression. 31 females (16.67%) and 12(9.52%) male patients had mild depression, 58 females (31.18%) and 31 male patients (24.60%) had moderate depression, 24 female (12.90%) and 8 male (6.35%) patients had severe depression and 20 female (10.75%) and 1 (0.79%) male patient had extremely severe depression. P value was < 0.001. Female predominance in depression was seen.(Table 2 and Table 3).

Anxiety: Out of 312, 92(29.5%) patients were normal. Mild anxiety was observed in 52 (16.7%) patients, Moderate anxiety in 52 (16.7%) and Severe anxiety in 45 (14.4%) while 71 (22.8%) patients had extremely severe anxiety. Gender analysis revealed that 36 (19.35%) out of 186 female patients were normal while 56 (44.4%) out of 126 male patients were normal. 28 (15.05%) females and 24(19.05%) male patients had mild anxiety, 37(19.89%) female and 15(11.90%) male patients had moderate anxiety while 27(14.52%) female and 18(14.29%) male patients experienced severe anxiety. 58(31.18%) female and 13(10.32%) male patients had extremely severe anxiety. So, females outnumbered males in anxiety as well. P value was < 0.001. (Table 2 and Table 3).

Stress: Out of a total of 312 patients, 218 (69.9%) were normal. Mild stress was experienced by 37 (11.9%) patients, 30 patients (9.6%) had moderate stress while severe stress in 21 patients (6.7%). A total of 118 (63.4%) females and 100 (79.37%) males were stress free. 26 (13.98%) females and 11 (8.73%) males had mild stress, 21 (11.29%) females and 9(7.14%) males had moderate stress while 15 (8.06%) female and 6 (4.76%) male experienced severe stress. 6 (3.23%) female patients and no male patient experienced extremely severe stress. P value was 0.026. (Table 2 and Table 3.

Table No.1: Male and female distribution in the study

	Frequency	**Percent**
Females	186	59.6
Males	126	40.4
Total	312	100.0

Table No.2: Depression, anxiety and stress in patients.

Depression	Normal	Mild	Moderate	Severe	Extremely Severe	P - value
Male	74	12	31	8	1	< 0.001
Female	53	31	58	24	20	
Anxiety						
Male	56	24	15	18	13	< 0.001
Female	36	28	37	27	58	
Stress						
Male	100	11	9	6	0	0.026
Female	118	26	21	15	6	

Table No.3: Depression, Anxiety and Stress Scale (DASS21) - For each statement below, please circle the number in the column that best represents how you have been feeling in the last week.

	Statement	Did not apply to me at all	Applied to me some degree or some of the time	Applied to me a considerable degree or a good part of the time	Applied to me very much or most of the time
1.	I found it hard to wind down.	0	1	2	3
2.	I was aware of dryness of my mouth.	0	1	2	3
3.	I could not seem to experience any positive feeling at all.	0	1	2	3
4.	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).	0	1	2	3
5.	I found it difficult to work up the initiative to do things.	0	1	2	3
6.	I tended to over react to situations.	0	1	2	3
7.	I experienced trembling (e.g. in the hands).	0	1	2	3
8.	I felt that I was using a lot of nervous energy.	0	1	2	3
9.	I was worried about situations in which I might panic and make a fool of myself.	0	1	2	3
10.	I felt that I had nothing to look forward to.	0	1	2	3
11.	I found myself getting agitated.	0	1	2	3
12.	I felt that I had nothing to relax.	0	1	2	3
13.	I felt down hearted and blue.	0	1	2	3
14.	I was intolerant of anything that kept me from getting on with what I was going.	0	1	2	3
15.	I felt I was close to panic.	0	1	2	3
16.	I was unable to become enthusiastic about anything.	0	1	2	3
17.	I felt I was not worth much as a person.	0	1	2	3
18.	I felt that I was rather touchy.	0	1	2	3
19.	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).	0	1	2	3
20.	I felt scared without any good reason.	0	1	2	3
21.	I felt that life was meaningless.	0	1	2	3

DISCUSSION

All males and females have a universal right to parenthood which is happiness. When the couple is unable to conceive, there arises the element of anxiety & then depression. There is not only marital discord but also primary relationship with a spouse, family member or a friend may suffer. Infertile couples get depressed and avoid social interactions. They exhibit frustration, loss of self-esteem . .[11]

It is estimated that 4.4% of the world's population suffer from depressive disorder, and 3.6% from anxiety disorder. According to the latest reports of WHO, more than 18% of people have depression between 2005 and 2015and around 80% belong to low- and middle-income countries. [12]

The latest WHO report in 2020 states that 48 million couples and 186 million individuals live with infertility globally.

A WHO evaluation of Demographic and Health Surveys (DHS) data (2004), estimated that more than 186 million ever-married women of reproductive age in developing countries desperately wished to be mothers with an underlying element of depression.[13]

A study was conducted among women with recurrent miscarriages & it was observed that 45% women were victims of anxiety and 37% suffered depression. Although major depression alone did not affect female fertility but it lowered the chances of male partners to achieve conception.[14]

In the developing world, many studies carried out in Iran, Kuwait and Turkey have supported social reasons as a cause of psychological problems with infertility which is highlighted in our study as well. Infertility is a social stigma for females and the fact that distressed women are those who hear from their husbands and families highlighted in our study as well.[15,16]

Many studies indicated that incidence of major depression is higher among infertile than couples and ranges from 15-54% and significant anxiety levels were seen in 8-28% of infertile couples. In our study, the levels of anxiety, depression and stress are all high in infertile women which are in contrast to a study in Iranian women by Griet et al where infertile women were more anxious than infertile men while there is no difference according to levels of depression. [17]

The inference of our study that males have less psychological distress than females is supported by a postal survey by Edelmann et al. & Wichman et al. who assessed infertile couples by a modified Impact of Events Scale26 with 50.3% of men and 66% of women.[18]

Both men and women are emotionally and sentimentally disturbed being childless. A woman declares herself complete only if she is a mother & 50% of infertile women address childlessness as the most challenging issue of their lives. The infertility pain that is experienced is described as equivalent to the psychological pains in diseases such as cancer and cardiovascular disease Our study also concludes that there is female predominance in anxiety, depression and stress related to infertility. [19]

There is a dire need to manage infertile couples with support and counselling sessions before starting ART and it is a multidisciplinary diagnostic and therapeutic challenge. If couples are counselled at the start of starting treatment, this can affect outcome. [20]

This study has been designed to assess the effects of infertility on the mental health of the married couple resulting in failures in normal as well as assisted conceptions.

CONCLUSION

Infertility disturbs the psychological balance of couples and makes them socially alone. The infertile couple in a Pakistani culture has to face a society where the females are the victims of blame game. Although, with experience, we have come to know that the male partner has more than 50% role to play in infertility. This makes a base for social issues and hence psychological consequences. Infertility is responsible for low self-esteem, anxiety and fear for tomorrow.

The basic theme of the study was to find out the frequency of the depression, anxiety and stress among the infertile couple so that counselling sessions can be arranged and to bring an awareness that infertility is not a disease in the current era and multiple options are available for management. Informed consent has been taken. The results were analyzed on SPSS version 21.

Author's Contribution:

Concept & Design of Study:	Kaweeta Kumari
Drafting:	Sanower, Nand Lal Dhomeja
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Revisiting Critically:	Kaweeta Kumari, Sanower
Final Approval of version:	Kaweeta Kumari

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Maroufizadeh S, Hosseini M, RahimiForoushani A, Omani-Samani R, Amini P. The effect of depression on quality of life in infertile couples: an actor-partner interdependence model approach. Health Qual Life Outcomes 2018;16(1):73.
2. Fallahzadeh H, Zareei Mahmood Abadi H, Momayyezi M, Malaki Moghadam H, Keyghobadi N. The comparison of depression and anxiety between fertile and infertile couples: A meta-

analysis study. Int J Reprod Biomed 2019; 17(3):153-62.
3. Maroufizadeh S, Hosseini M, Rahimi Foroushani A, Omani-Samani R, Amini P. Application of the dyadic data analysis in behavioral medicine research: marital satisfaction and anxiety in infertile couples. BMC Med Res Methodol 2018;18(1):117.
4. Seibel MM, Taymor ML. Emotional aspects of infertility. Fertil Steril 1982;37(2):137-45.
5. Gdańska P, Drozdowicz-Jastrzębska E, Grzechocińska B, Radziwon-Zaleska M, Węgrzyn P, Wielgoś M. Anxiety and depression in women undergoing infertility treatment. Ginekol Pol 2017;88(2):109-112.
6. Terzioglu F, Turk R, Yucel C, Dilbaz S, Cinar O, Karahalil B. The effect of anxiety and depression scores of couples who underwent assisted reproductive techniques on the pregnancy outcomes. Afr Health Sci 2016;16(2):441-50.
7. Rooney KL, Domar AD. The relationship between stress and infertility. Dialogues Clin Neurosci 2018;20(1):41-47.
8. Frederiksen Y, Farver-Vestergaard I, Skovgård NG, Ingerslev HJ, Zachariae R. Efficacy of psychosocial interventions for psychological and pregnancy outcomes in infertile women and men: a systematic review and meta-analysis. BMJ Open 2015;5(1):e006592.
9. Baghianimoghadam MH, Aminian AH, Baghianimoghadam B, Ghasemi N, Abdoli AM, SeighalArdakani N, et al. Mental health status of infertile couples based on treatment outcome. Iran J Reprod Med 2013;11(6):503-10.
10. AbediShargh N, Bakhshani NM, Mohebbi MD, Mahmudian K, Ahovan M, Mokhtari M, et al. The Effectiveness of Mindfulness-Based Cognitive Group Therapy on Marital Satisfaction and General Health in Woman with Infertility. Glob J Health Sci 2015;8(3):230-5.
11. Ahmadi Forooshany SH, Yazdkhasti F, Safari Hajataghaie S, Nasr Esfahani MH. Infertile individuals' marital relationship status, happiness, and mental health: A causal model. Int J Fertil Steril 2014;8(3):315-24.
12. World Health Organization. (2017Depression . and other common mental disorders: global health estimates. World Health Organization. https://apps.who.int/iris/handle/10665/254610
13. Global prevalence of infertility, infecundity and childlessness-WHO 2017.https://www.who.int › topics › infertility › burden.
14. Szkodziak F, Krzyżanowski J, Szkodziak P. Psychological aspects of infertility. A systematic review. J Int Med Res 2020;48(6): 300060-520932403.
15. Fido A, Zahid MA. Coping with infertility among Kuwaiti women: Cultural perspectives. Int J Soc Psychiatr 2004; 50: 294-300.
16. Guz H, Ozkan A, Sarisoy G, Yanik F, Yanik A. Psychiatric symptoms in Turkish infertile women. J Psychosom Obstet Gynaecol 2003; 24: 267-271.
17. Kazandi M, Gunday O, Mermer TK, Erturk N, Ozkınay E. The status of depression and anxiety in infertile Turkish couples. Iran J Reprod Med 2011;9(2):99-104.
18. Fisher JR, Hammarberg K. Psychological and social aspects of infertility in men: an overview of the evidence and implications for psychologically informed clinical care and future research. Asian J Androl 2012;14(1):121-9.
19. ZarifGolbarYazdi H, AghamohammadianSharbaf H, Kareshki H, Amirian M. Infertility and Psychological and Social Health of Iranian Infertile Women: A Systematic Review. Iran J Psychiatr 2020;15(1):67-79.
20. Toth B, Baston-Büst DM, Behre HM, Bielfeld A, Bohlmann M, Bühling K, et al. Diagnosis and Therapy Before Assisted Reproductive Treatments. Guideline of the DGGG, OEGGG and SGGG (S2k Level, AWMF Register Number 015-085, February 2019) - Part 1, Basic Assessment of the Woman. Geburtshilfe Frauenheilkd 2019;79(12):1278-1292.