Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v31i3.5105

THE NEXUS BETWEEN INFERTILITY AND DEPRESSION PREVALENCE AMONG WOMEN EXPERIENCING INFERTILITY

Muhammad Saifullah Qureshi[1], Muhammad Zeeshan Iltaf[2], Syeda Nadia Shah[3], Summara Nazir[4], Azaz Ali[5], Omar Zeb Khan[6*]

[1]Senior Lecturer, Department of Social Sciences, SZABIST University Islamabad, Pakistan
[2]Senior Lecturer, Capital University of Science and Technology Islamabad, Pakistan
[3]Lecturer Department of Psychology, Islamia College Peshawar, Pakistan
[4]Family Physician at Prime Hair and Skin Transplant Islamabad, Pakistan
[5]Department of Neurophysiology, Mahaban Medical & Research Hospital Topi Swabi, Pakistan
[6*]PhD Scholar Psychology, Department of Psychology, Foundation University School of Science and Technology Rawalpindi, Pakistan

***Corresponding Author:** Omar Zeb Khan
*PhD Scholar Psychology, Department of Psychology, Foundation University School of Science and Technology Rawalpindi, Pakistan. Email: ozebkhan@gmail.com

Abstract:
The present study highlights the association between infertility and depressive symptoms. Women experiencing infertility are more prone to feelings of depression, as evidenced from the previous work by the prevalence of depressive symptoms in this population. Thus our study's objectives are to evaluate the psychological well-being of women who are having reproductive issues and to look into the underlying causes of depression symptoms in infertile women. Data were collected from 200 respondents. Furthermore, Interviews were held at a location suggested by the respondents or in the waiting rooms of the hospitals and clinics. The association between the independent variable and the dependent variable was measured through a Chi-square test. Besides, multivariate analysis was also performed to look for differences in the prevalence of depression with infertility while controlling the age of the respondents. The study explored a significant association between infertility prevalence of depression. The multivariate level analysis highlights the association between infertility and the prevalence of depression across different age groups. A significant relationship was found among older women. It has been inference from the findings and prior empirical work that infertile women had a greater prevalence of depression.

Keywords: Infertility, Depression, Women

Background of the Study

The term infertility indicates not being able to have a baby or procreate. Moreover, Infertility is a condition of the male or female reproductive system described as the inability to gain a pregnancy after 12 months or more of frequent unprotected sexual intercourse. In addition, primary infertility occurs when a woman has not conceived after two years of unprotected and regular sexual intercourse. The term secondary infertility refers to when a woman is unable to conceive after a previous successful conception, even after two years of unregulated and regular intercourse. Previous

empirical studies and existing literature vividly indicated that infertility negatively affected millions of couples across the globe. Statistics show that 48 million couples and about 186 million people experience the problem of infertility across the world. It is also observed that the majority of these couples have unrecognized and unexplained causes of infertility belonging to underdeveloped and developing countries (Fathalla, 1992; Sharma & Shrivastava, 2022; Tabong & Adongo, 2013; Ullah et al., 2021). It is also evident from the various studies' findings that the phenomena of childlessness have more negative implications in developing nations than in Western cultures. However, female spouses account for 40%-55% of infertility cases, whereas male partners account for around 20%-40%, but women are disproportionately blamed for infertility, leading to emotional sadness, frustration, social humiliation, and economic hardship (Dyer et al., 2002; Sundby et al., 1998). Female and male infertility can result from a variety of factors. For example, female infertility can be caused by the "ovarian" (the most frequent), tubal, uterine, cervical, or unexplained. One of the ovarian reasons is polycystic ovarian syndrome (PCOS), which has become increasingly/surged common in recent years. Male infertility can be caused by aberrant sperm production, issues with semen ejaculation, sperm motility disorders, or the absence/low amounts of sperm (Brugo-Olmedo et al., 2001; Kumar & Singh, 2015; Roupa et al., 2009). Understandably, persons undergoing infertility therapy are stressed. There is a complex and diverse relationship between infertility and psychological stress. On the one hand, research explored that childless couples experience more stress and are more likely to acquire psychiatric illnesses than healthy couples. On the other hand, significant levels of psychological distress have been linked to increased infertility(Drosdzol & Skrzypulec, 2008; Greil, 1997).

In Asia specifically Pakistan, childbearing is closely linked with femininity and womanhood, and childlessness contributes to life crises for women contributing to severe psychological problems and personal grief. As explored by different recent research studies Infertility significantly triggers psychological suffering such as emotional stress, as well as experience feelings of wrath, guilt, sorrow, melancholy, anxiety, and loss of self-confidence/esteem (Cui et al., 2021; Cwikel et al., 2004; Simionescu et al., 2021). For example, the work of Schmidt (2009) disclosed that women with infertility are more prone to mental problems induced by infertility-related stress than men. He further added that Infertility has a long-term influence on women's mental health, affecting them emotionally, spiritually, sexually, and physically. Furthermore, infertility can contribute to low self-esteem, remorse, loneliness, social isolation, and even psychological stress. This research work is restricted to infertility and its impact particularly psychological and specifically depression among infertile women in a Pakistani context.

Prior work and literature revealed that infertility negative impact on the lives of Pakistani women, significantly backed by prevailing societal and cultural norms as well as accompanied by psychological drives. The failure to conceive a child drastically contributes to severe mental trauma and leaves behind deep, long-lasting scars in a culture that values and celebrates parenting proudly(Abbasi et al., 2016; Hussain, 2010; Ullah et al., 2021). It has been observed that for almost all Pakistani females, the path towards parenting is coupled with pressure from family and society. They are socialized at an early age that having children is not only a biological requirement but also a responsibility and a source of fulfillment. Thus, those women who experienced with infertility contributed to the feelings of inadequacy, shame, and despair (Assaysh-Öberg et al., 2023; Dunkel-Schetter & Lobel, 1991; Gonzalez, 2000; Karaca & Unsal, 2015). Furthermore, in a society where the status of family holds dominant importance, infertility could negatively affect marital relationships, and trigger feelings of guilt and blame. In addition, female is subjected to stigmatization from their in-laws and even the neighborhood. The inability to conceive a child intensifies the psychological distress(Greil et al., 2011; Nasim et al., 2019; Naz & Batool, 2017). For instance, the work of Matthiesen et al. (2011) explored that the most common negative emotional reactions to infertility are depression (a feeling of loss, melancholy, and powerlessness) and anxiety (a feeling of threat, tension, and concern). Likewise, the work of Cousineau and Domar (2007) disclosed that the level of depression is much higher in infertile females than in fertile women.

Current focus of the Study

Millions of couples worldwide are negatively impacted by the diverse problem of infertility, with women frequently suffering the most from its psychological and emotional effects. Although the medical components of infertility have been thoroughly researched and various studies have been carried out, little work has been done on the relationship between infertility and mental health, specifically depression in women. This study attempts to investigate the multifold association between female infertility and depression. As discussed in the previous section the infertility ratio is surging worldwide, and generally females often perceive themselves as the primary cause of childlessness. This growing prevalence underscores the importance of understanding its psychological ramifications, mainly its link with depression among females. Moreover, this empirical work aims to bridge the gap in our understanding of the complex association between childlessness and depression among females. This study aims to reveal the contributing factors, to inform clinical practice, public health efforts, and policy actions targeted at alleviating the psychological cost of infertility and enhancing the overall well-being of afflicted women by elucidating the underlying causes and therapeutic implications. Keeping in mind the above facts, the current study investigated the effects of childlessness on women's mental health specifically depression.

Methodology

Research Design

Correlation along with exploratory study design were adopted in the present study. This type of design is mostly adopted in survey-based and cross-sectional empirical studies to reveal the relationship between study variables.

Universe, sampling procedure Sample, and Location of the Present Study

This work was carried out in Islamabad (the capital of Pakistan), and Peshawar, a district of Khyber Pakhtunkhwa province to determine the psychological impact of infertility/childlessness on married females. It is pertinent to mention that the potential respondents for this study were only those women who were undergoing treatment for infertility in various private and public hospitals/clinics within the aforementioned study areas. As the exact number of infertile females in the research region was unclear, thus purposive sampling was used along with snowballing approaches to locate participants. Data were gathered from 200 respondents that fit the aforementioned criteria, 100 from each area. Furthermore, Interviews were held at a location suggested by the respondents or in the waiting rooms of the hospitals and clinics.

Operationalization

Married women's infertility was the independent variable in this study. The dependent variable was the prevalence of depression, which was operationalized using prior sales, comments from earlier empirical research, and professional opinions. This question of infertility encompasses eight items with (0–3) Likert scale responses pertaining to infertility including irregular periods of menstruation, gynecological illness diagnosis, tube blockage, increased ovulation, age factor, hormonal imbalance in family history, and Obesity. Likewise, the prevalence of depression was measured through nine items such as negativity, unhappiness, regret, social disengagement, indecision, inhibition at work, weariness, insomnia, and somatic obsession.

Tools for Data Collection

Data was gathered via closed-ended interview questions that addressed the aforementioned variables. Statements with ambiguities and inconsistencies were altered and eliminated before the actual data collection.

Ethical Considerations

In order to interview women seeking treatment for infertility at hospitals and clinics, prior permission from the concerned doctors, hospital employers, and management was obtained.

Reliability Analysis and Indexation

Indexation in research is the process of combining two or more statements of variables into a single statement. Moreover, independent and dependent variables were indexed in the current study and then cross-tabulated at the bivariate level as well as at multivariate analysis, and the background variables utilized were the women's age and education. Cronbach's alpha was used to assess the research scale's reliability prior to indexation. The test findings indicate that both the independent variable (women's infertility) and the dependent variable (prevalence of depression) had values in the range of 0.7 and 0.9.

Data Analysis

The association between the independent variable and the dependent variable was measured through a Chi-square test. Besides, multivariate analysis was also performed to look for differences in the prevalence of depression with infertility and also explored whether age or the participant's educational position had any impact on the study variables. SPSS version 25 was used for all analyses.

Results

Demographic Profile

Two age slots were constructed for this study. Findings show that more than two-thirds of the total sampled women age were between 18 to 35 years old. The educational status of the sampled women shows that the majority of the infertile women i.e. 62% were illiterate and 66.5% of infertile women were diagnosed with primary fertility. The study further explored that 74.5% of the sampled respondents get their treatment at private sector hospitals See Table 1 below.

Table 1. *Profile of the Sampled respondents*

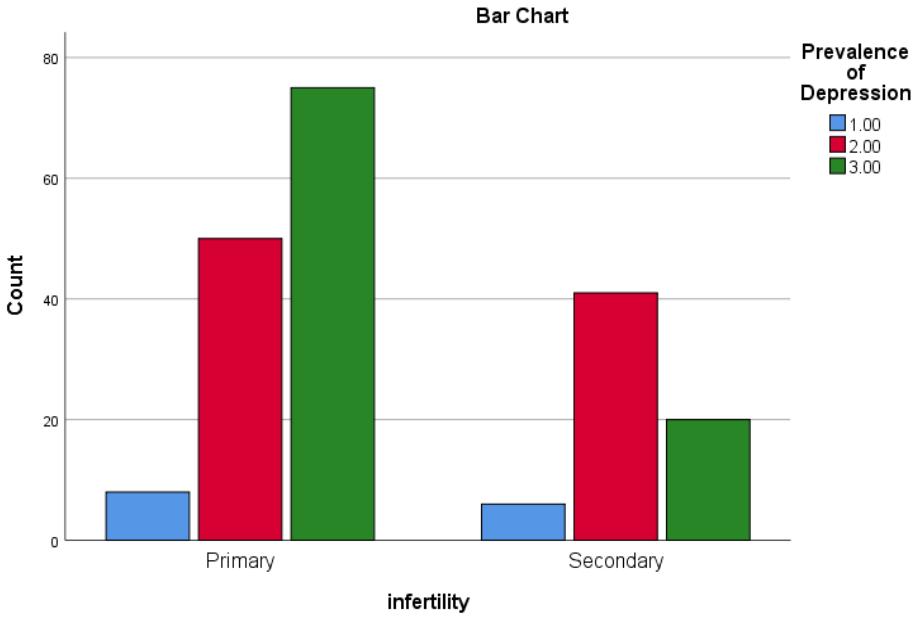
Demographic profile	**Frequency**	**Percent**
Age		
18-35	146	73
36 and above	54	27
Education Status		
Literate	124	62
Illiterate	76	38
Type of Infertility		
Primary	133	66.5
Secondary	67	33.5
Seeking Treatment in Hospital		
Government	48	24
Private	149	74.5
Semi-Government	3	1,5
Total	**200**	**100**

Relationship Between Infertility among women and the prevalence of Depression

The Results in the below-mentioned Table 2 and the bar chart disclosed a correlation between infertility and the prevalence of depression. The study explored a significant association between infertility prevalence of depression. The chi-square test yielded a value of 0.02. This indicates a statistically significant association between infertility and depression.

Table 2 *Relationship Between Infertility among women and the prevalence of Depression*

Infertility	**Prevalence of Depression**				**Statistics**
	Agree	Disagree	Uncertain	Total	
Primary	8(6%)	50(37.6%)	75(56.4%)	133(100)	$X^{2=}$ *12.611*
Secondary	6(9%)	41(61.2%)	20(29.9%)	67(100%)	*P= 0.002*
Total	14(07%)	91(45.5%)	95(47.5%)	200(100)	



Relationship Between Infertility among women and Prevalence of Depression (Controlling for Age)

Table 3 displays the multivariate analysis findings of the primary data, which indicate the impact of female infertility on the prevalence of depression within the age range of the participants. The findings of the study show that the value of chi-square for the age group of 18-35 years (X2) of 4.322 indicated a moderate level of relationship between infertility and prevalence of depression, however, the p-value of 0.115 indicates that the relationship is not statistically significant. In addition, in the age group 36 & Above, the chi-square value (X2) of 21.923 is high, showing a strong significant association between infertility and depression. These findings suggest that infertility is significantly associated with a higher prevalence of depression among infertile women aged 36 and above.

Table 3 *Relationship Between Infertility among women and Prevalence of Depression (Controlling for Age)*

Age	**Infertility**	**Prevalence of Depression**				**Statistics**
		Agree	Disagree	Uncertain	Total	
18-35 years	Primary	7(6.9%)	49(48.5%)	45(44.6%)	101(100%)	$X^{2=}$ *4.322*
	Secondary	5(11.1%)	28(62.2%)	12(26.7%)	45(100%)	*P= 0.115*
	Total	12(8.2%)	77(52.7%)	57(39%)	146(100%)	
36 & Above	Primary	1(3.1%)	1(3.1%)	30(93.8%)	32(100%)	$X^{2=}$ *21.923*
	Secondary	1(4.5%)	13(59.1%)	8(36.4%)	22(100%)	*P= 0.000*
	Total	2(3.7%)	14(25.9%)	38(70.4%)	54(100%)	

Discussion

The main theme of the current study was to investigate how women's psychological health is negatively affected by infertility. It is difficult to describe the feelings of being infertile when it affects practically every aspect of her life, causing her depressive behavior, disappointment, hopelessness, and struggle to comprehend her spouse, and the wider society. Based on study findings a significant percentage of respondents had primary infertility, indicating that they were unable to conceive and give birth. Simultaneously, a noteworthy proportion of participants mentioned that they had successfully conceived in the past but were presently unable to do so. At the bivariate level, the prevalence of depression among females experiencing infertility was investigated, and the chi-square results revealed a significant relationship between infertility and depressive symptoms. These findings are closely in line with previous work of (Yassa et al., 2019) that infertility involves psychological

negative effects in addition to physical ones for women. Even while having children is highly valued and important in some cultures, women who began infertility treatments and yearned for additional children may find that their stress levels increased. Likewise, findings of (Kiani et al., 2021) explored that Infertile women had a greater frequency of depression than the overall population. The results from the statistical analysis at the multivariate level highlight the association between infertility and the prevalence of depression across different age groups. A significant relationship was found among older women. These findings are also supported by (Ullah et al., 2021) who point out similar findings in their study.

Conclusion

This empirical work explored the prevalence of depression among infertile females via collecting primary data from the infertile women currently seeking treatment. It has been inference from the findings and prior empirical work that infertile women had a greater prevalence of depression than did the general public, since depression and the denial of this issue negatively impact treatment outcomes. It has been also observed that compared to young female, old age female was characterized by a highly significantly worse mental health status in terms of depressive symptoms.

References

1. Abbasi, S., Kousar, R., & Sadiq, S. S. (2016). Depression and anxiety in Pakistani infertile women. J Surg Pakistan, 21(1), 13-17.
2. Assaysh-Öberg, S., Borneskog, C., & Ternström, E. (2023). Women's experience of infertility & treatment–A silent grief and failed care and support. Sexual & Reproductive Healthcare, 37, 100879.
3. Brugo-Olmedo, S., Chillik, C., & Kopelman, S. (2001). Definition and causes of infertility. Reproductive biomedicine online, 2(1), 173-185.
4. Cousineau, T. M., & Domar, A. D. (2007). Psychological impact of infertility. Best practice & research Clinical obstetrics & gynaecology, 21(2), 293-308.
5. Cui, C., Wang, L., & Wang, X. (2021). Effects of self-esteem on the associations between infertility-related stress and psychological distress among infertile chinese women: a cross-sectional study. Psychology Research and Behavior Management, 1245-1255.
6. Cwikel, J., Gidron, Y., & Sheiner, E. (2004). Psychological interactions with infertility among women. European Journal of Obstetrics & Gynecology and Reproductive Biology, 117(2), 126-131.
7. Drosdzol, A., & Skrzypulec, V. (2008). Quality of life and sexual functioning of Polish infertile couples. The European Journal of Contraception & Reproductive Health Care, 13(3), 271-281.
8. Dunkel-Schetter, C., & Lobel, M. (1991). Psychological reactions to infertility. In Infertility: Perspectives from stress and coping research (pp. 29-57). Springer.
9. Dyer, S. J., Abrahams, N., Hoffman, M., & van der Spuy, Z. M. (2002). Infertility in South Africa: women's reproductive health knowledge and treatment-seeking behaviour for involuntary childlessness. Human reproduction, 17(6), 1657-1662.
10. Fathalla, M. (1992). Reproductive health: a global overview. Early Human Development, 29(1-3), 35-42.
11. Gonzalez, L. O. (2000). Infertility as a transformational process: a framework for psychotherapeutic support of infertile women. Issues in Mental Health Nursing, 21(6), 619-633.
12. Greil, A., McQuillan, J., & Slauson-Blevins, K. (2011). The social construction of infertility. Sociology Compass, 5(8), 736-746.
13. Greil, A. L. (1997). Infertility and psychological distress: a critical review of the literature. Social science & medicine, 45(11), 1679-1704.
14. Hussain, S. (2010). Psychiatric morbidity in infertile Pakistani women: a systematic review. J Pak Psych Soc, 7, 61-66.
15. Karaca, A., & Unsal, G. (2015). Psychosocial problems and coping strategies among Turkish women with infertility. Asian nursing research, 9(3), 243-250.

16. Kiani, Z., Simbar, M., Hajian, S., & Zayeri, F. (2021, 2021/03/04). The prevalence of depression symptoms among infertile women: a systematic review and meta-analysis. Fertility Research and Practice, 7(1), 6. https://doi.org/10.1186/s40738-021-00098-3
17. Kumar, N., & Singh, A. K. (2015). Trends of male factor infertility, an important cause of infertility: A review of literature. Journal of human reproductive sciences, 8(4), 191-196.
18. Matthiesen, S., Frederiksen, Y., Ingerslev, H. J., & Zachariae, R. (2011). Stress, distress and outcome of assisted reproductive technology (ART): a meta-analysis. Human reproduction, 26(10), 2763-2776.
19. Nasim, S., Bilal, S., & Qureshi, M. (2019). Psycho-social aspects of infertility-a review of current trends. The Professional Medical Journal, 26(09), 1537-1541.
20. Naz, B., & Batool, S. S. (2017). Infertility related issues and challenges: perspectives of patients, spouses, and infertility experts. Pakistan Journal of Social and Clinical Psychology, 15(2), 3-11.
21. Roupa, Z., Polikandrioti, M., Sotiropoulou, P., Faros, E., Koulouri, A., Wozniak, G., & Gourni, M. (2009). Causes of Infertility in Women at Reproductive Age. Health science journal, 3(2).
22. Schmidt, L. (2009). Social and psychological consequences of infertility and assisted reproduction–what are the research priorities? Human fertility, 12(1), 14-20.
23. Sharma, A., & Shrivastava, D. (2022, Oct). Psychological Problems Related to Infertility. Cureus, 14(10), e30320. https://doi.org/10.7759/cureus.30320
24. Simionescu, G., Doroftei, B., Maftei, R., Obreja, B.-E., Anton, E., Grab, D., Ilea, C., & Anton, C. (2021). The complex relationship between infertility and psychological distress. Experimental and Therapeutic Medicine, 21(4), 1-1.
25. Sundby, J., Mboge, R., & Sonko, S. (1998). Infertility in the Gambia: frequency and health care seeking. Social science & medicine, 46(7), 891-899.
26. Tabong, P. T.-N., & Adongo, P. B. (2013). Infertility and childlessness: a qualitative study of the experiences of infertile couples in Northern Ghana. BMC pregnancy and childbirth, 13, 1-10.
27. Ullah, A., Ashraf, H., Tariq, M., Aziz, S. Z., Zubair, S., Sikandar, K. U. R., Ali, N., Shakoor, A., & Nisar, M. (2021). Battling the Invisible Infertility Agony. Journal of Ethnic and Cultural Studies, 8(2), 89-105.
28. Yassa, M., Arslan, E., & GULBAHAR, D. S. (2019). Effects of infertility treatment on anxiety and depression levels. Cukurova Medical Journal, 44(2), 410-415.