Original Article

Psychological Impact of Infertility among Women of Reproductive Age Group at Tertiary Care Hospital

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Abstract

Objective: To determine the psychological impact of infertility among women of reproductive age in terms of anxiety and depression at a tertiary care Hospital.

Methodology: A descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Bilawal Medical College, LUMHS Jamshoro, from February 2023 to June 2023. The study included infertile women aged 20 to 45 years who presented with a diagnosis of primary infertility at the Gynecology and Obstetrics OPD of BMC. Participants were assessed for psychological status using the Hamilton Anxiety Rating Scale (HAM-A) and the Patient Health Questionnaire-9 (PHQ-9). Finding were analyzed for prevalence and severity of anxiety and depression among infertile women. All the information was entered analyzed using SPSS version 26.

Results: Overall average age of the patients was 29.79±5 years. Most of the women experienced mild (69.8%) or moderate (22.2%) anxiety symptoms, with only 3 (4.8%) reporting severe anxiety. Likewise, all the women found with varying degrees of depression, mostly moderate (34.9%), moderately severe (36.5%), mild (25.4%) and severe (3.2%). Furthermore, the anxiety found significantly associated with level of education and occupational status (p=0.001), while there was no significant correlation found with socioeconomic status and age of women (p=>0.05). However, the depression was insignificantly associated with age, educational level, occupational status socioeconomic status (p=>0.05).

Conclusion: There was a higher prevalence of anxiety and depression observed among infertile women**,** indicating a significant impact of infertility on psychological well-being during reproductive age, highlighting the need for combined psychological support with treatment of infertility.

Keywords: Infertility, Depression, Anxiety, Reproductive age, Mental health.

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Introduction

The infertility has been identified as a global reproductive health issue and it is estimated that the prevalence of infertility among women has been increasing at an annual rate of around 0.37% per cent, which has led to an overall increase in the global burden of infertility.[1] According to WHO) the infertility as a condition that can occur in either men or women, defined by the inability to achieve pregnancy despite engaging in regular, unprotected sexual activity for a duration of one year or more**.**[2] By the rising influence from lifestyle and environmental factors, the increasing incidence of infertility may be associated to delayed marriage and delaying in the first pregnancy.[1,3] Though its prevalence differs across regions worldwide, largely influenced by variations in cultural norms and families.

Particularly, the infertility is often a deeply distressing emotional experience that can lead to numerous psychological challenges such as stress, anxiety, depression, low self-esteem, decreased sexual satisfaction, and a reduction the quality of life of individulas.[4,5] Such psychosocial influences are usually more devastating on women than on their male

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partners, especially in communities where gender-discrimination, and stigmas directed against women exist.[4,6] Therefore, women who have infertility tend to develop frustration as well as anger which may cause tension in their relationship with their family members, friends as well as their spouses. Additionally, they have increased chances of psychological disorders, marital dissatisfaction and reduced life quality in comparison to the fertile women.[4] The infertile couples also tend to have several emotions, such as guilt and sadness as well.[7] Furthermore, the financial burden associated with infertility treatments further intensifies their emotional stress.[7] Importantly, the research studies suggested that the energy imbalance and psychosocial stress may work together in a complimentary way causing a greater disturbance of the reproductive system than does either single factor.[8] The symptoms of anxiety are among the most common psychiatric issues observed across various populations, occurring about twice as frequently in women as in men.[9] Anxiety is characterized by feelings of nervousness, fear, and worry, and it may present as a primary condition or as a reaction to emotionally challenging condition.[9]

In accordance to the different cultures, women are often perceived as being primarily responsible for infertility, which makes them more vulnerable to developing psychological probeloms.[10] Few studies have shown that even when infertility is caused by male-related factors, women tend to experience greater social and familial pressure, facing more emotional distress and bearing the majority of the psychological burden associated with infertility in women.[10,11] Inappropriately in our country, infertility among women remains a major social and emotional issue, particularly within culturally driven societies where women are often blamed or stigmatized for their inability to conceive. In the resulting, many infertile women experience continuous psychological distress, yet their emotional suffering is frequently underestimated or overlooked both social as well as medical grounds. Not only is this recognition likely to impact their mental health, but it could also lead to the worsening outcomes of infertility. Hence, this study has been designed to assess the psychological problems among infertile women, aiming to highlight this hidden and neglected issue. After considering the psychological impact of infertility is essential for developing comprehensive treatment strategies that address both reproductive and mental health simultaneously, ultimately improving overall quality of life and outcomes of infertility.

Methodology

This was a descriptive cross-sectional study carried out at obstetrics and gynecology department of Bilawal Medical College LUMHs Jamshoro. Study was done during a period of five months from February 2023 to June 2023. All the infertile women aged 20 to 45 years, presented with diagnosis of primary fertility at gynecology and OBS OPD of BMC were included. All the women with sever medical and surgical conditions, infertility due to their husbands like azoospermia, women psychiatric issues before marriage, women who were not willing to take a part in study were excluded. The infertility was defined as the inability to conceive after at least 12 months of regular, unprotected sexual intercourse. After taking demographic information including age, duration of marriage occupational status, socioeconomic status, residential status and educational status the clinical examination and medical record were sort out. Verbal informed consent was obtained from each participant after a detailed explanation of the study's purpose. They were informed that their information would be kept strictly confidential and used solely for research purposes, and that there would be no direct benefit or risk to them from participation in the study. All the women were assed for psychological assessment using two standardized psychological assessment tools like Hamilton Anxiety Rating Scale (HAM-A) and the Patient Health Questionnaire-9 (PHQ-9). Particularly HAM-A scale (consisting of 14 items, each reflecting a cluster of symptoms related to anxiety), while the Each item is rated on a scale from 0 (not present) to 4 (very severe), with the PHQ-9 scale was used to measure and monitor the severity of depression among participants which was consisting nine items corresponding to the diagnostic criteria for major depressive disorder. All the cases were guided in completing the questionnaires, and those with difficulty understanding any items received assistance from the researcher to ensure accuracy. Finding were analyzed to observed the prevalence and severity of anxiety and depression among infertile women and their association with demographic factors. All the information was entered analyzed using SPSS version 26.

Results

Mean age of the patients was 29.79$\pm$5 years. Out of all 43 (68.3%) were illiterate, 18 (28.6%) had primary education, and only 2 (3.2%) were graduates. Most of the women were housewives (92.1%), while 3 (4.8%)

were government employees and 2 (3.2%) worked in the private sector. Most participants resided in rural areas (85.7%), with only 9 (14.3%) living in urban settings. Based on socioeconomic status, 42 (66.7%) belonged to the middle class and 21 (33.3%) to the poor class, as shown in Table I.

Table I: Baseline and clinical information of the patients. (n=63)

Variables		N	%
EDUCATIONAL STATUS	Illiterate	43	68.3
	Primary	18	28.6
	Graduate	02	03.2
OCCUPATIONAL STATUS	House wife	58	92.1
	Govt employee	03	04.8
	Private employee	02	03.2
RESIDENCE	Rural	54	85.7
	Urban	09	14.3
SOCIOECONOMIC STATUS	Poor	21	33.3
	Middle	42	66.7

Out of all women, 61 (96.8%) experienced some degree of anxiety, with most showing mild (69.8%) or moderate (22.2%) symptoms, and only 3 (4.8%) reporting severe anxiety. Similarly, all participants exhibited varying levels of depression, predominantly moderate (34.9%) and moderately severe (36.5%), followed by mild (25.4%) and severe (3.2%) forms. Table II.

Furthermore, the mild anxiety was most common (69.8%), particularly among those aged 20–35 years (58.7%) and housewives (66.7%). Anxiety showed a significant association with educational (p=0.001) and occupational status (p=0.001), while no significant link was found with socioeconomic status (p=0.733) or age (p=0.073). Table III

Table II: Severity of anxiety and depression among patients. (n=63)

Anxiety and depression		N	%
Anxiety	No	02	03.2
	Mild	44	69.8
	Moderate	14	22.2
	Severe	3	04.8
	Total	63	100.0
Depression	Mild	16	25.4
	Moderate	22	34.9
	Moderately Severe	23	36.5
	Severe	2	03.2

Additionally, depression was most common in the 20–35-year age group (84.1%), with moderate depression (30.2%) being the most frequent severity level. Most illiterate women (25.4%) and housewives (31.7%) showed mild to moderate depression. However, no statistically significant association was found between depression and any demographic variables, including age (p=0.887), education (p=0.865), occupation (p=0.985), or socioeconomic status (p=0.473). Table: IV

Discussion

The women receiving infertility treatment often experience anxiety, depression, and reduced quality of

Table III: Severity of anxiety according to demographic variables. (n=63)

VARIABLES		ANXIETY					p-value
		No	Mild	Moderate	Severe	Total	
Age groups	20-35 years	2	37	13	1	53	0.073
		3.2%	58.7%	20.6%	1.6%	84.1%	
	36-40 years	0	7	1	2	10	
		0.0%	11.1%	1.6%	3.2%	15.9%	
Educational status	Illiterate	0	33	9	1	43	0.001
		0.0%	52.4%	14.3%	1.6%	68.3%	
	Primary	2	11	5	0	18	
		3.2%	17.5%	7.9%	0.0%	28.6%	
	Graduate	0	0	0	2	2	
		0.0%	0.0%	0.0%	3.2%	3.2%	
Occupational status	House wife	2	42	13	1	58	0.001
		3.2%	66.7%	20.6%	1.6%	92.1%	
	Govt employee	0	2	1	0	3	
		0.0%	3.2%	1.6%	0.0%	4.8%	
	Private employee	0	0	0	2	2	
		0.0%	0.0%	0.0%	3.2%	3.2%	
Socioeconomic status	Poor	0	16	4	1	21	0.733
		0.0%	25.4%	6.3%	1.6%	33.3%	
	Middle	2	28	10	2	42	
		3.2%	44.4%	15.9%	3.2%	66.7%	

Table IV: Severity of depression according to demographic variables. (n=63)

Variables		DEPRESSION				Total	p-value
		No	Mild	Moderate	Severe		
Age groups	20-35 years	14	18	19	2	53	0.887
		22.2%	28.6%	30.2%	3.2%	84.1%	
	36-40 years	2	4	4	0	10	
		3.2%	6.3%	6.3%	0.0%	15.9%	
Educational status	Uneducated	11	16	14	2	43	0.865
		17.5%	25.4%	22.2%	3.2%	68.3%	
	Primary	5	5	8	0	18	
		7.9%	7.9%	12.7%	0.0%	28.6%	
	Graduate	0	1	1	0	2	
		0.0%	1.6%	1.6%	0.0%	3.2%	
Occupational status	House wife	15	20	21	2	58	0.985
		23.8%	31.7%	33.3%	3.2%	92.1%	
	Govt employee	1	1	1	0	3	
		1.6%	1.6%	1.6%	0.0%	4.8%	
	Private employee	0	1	1	0	2	
		0.0%	1.6%	1.6%	0.0%	3.2%	
Socioeconomic status	Poor	7	8	5	1	21	0.473
		11.1%	12.7%	7.9%	1.6%	33.3%	
	Middle	9	14	18	1	42	
		14.3%	22.2%	28.6%	1.6%	66.7%	

life due to prolonged diagnostic procedures and frequent hospital visits. This study has been done on 63 infertile women to evaluate the psychological impact of infertility among women of reproductive age in terms of anxiety and depression. In this study participants were mostly younger, with a mean age of 29.79 ± 5 years, whereas a previous study reported the highest proportion (35.7%) in the 28 to 32-year age group.[12] Educational levels also differed, as most participants in the current study were illiterate (68.3%), while the comparative study noted 41.4% having completed high school and 21.4% holding undergraduate degrees.[12] Similarly, non-working women predominated in both studies (92.1% versus. 60%), and most belonged to the middle socioeconomic class (66.7% vs. moderate level).[12] In another study, Bahadur A et al[13] reported that the infertile group had a mean age of 30.6 ± 3.9 years, consisting mainly of women with primary education (65%) and lower socioeconomic status, particularly from the lower middle (30%) and upper lower (32%) classes. Similarly, Barzanji KA et al[14] found that the average age of participants was 35.3 ± 8.64 years, with most being well-educated 42.6% having over 13 years of schooling, 39.3% completing 9–13 years, and 18.2% having less than 8 years of formal education. There are some variations in demographic characteristics across studies may be due to the differences in sample sizes, cultural influences, and the economic conditions.

In this study, a total of 96.8% of participants had some degree of anxiety, most commonly mild (69.8%) and moderate (22.2%) symptoms, while only 3 participants (4.8%) reported severe anxiety. Similarly, all participants showed varying levels of depression, predominantly moderate (34.9%) and moderately severe (36.5%), followed by mild (25.4%) and severe (3.2%). In aligns to this study et al[15] reported that the prevalence of anxiety and depression were higher, anxiety 51.1% with severity as 29.1% had mild to moderate levels (scores between 8 and 11) and 22.0% had severe anxiety (scores ≥11), while depression was 54.0% with severity as 28.0% cases had mild to moderate (scores between 8 and 11) and 26.0% were with severe depression (scores ≥11).

On the other hand, Jennifer Joy J et al[16] reported that the in the infertile group, mild anxiety was observed in 2% of women, moderate anxiety in 14%, severe anxiety in 5%, and extremely severe anxiety in 74%, while 5% showed no signs of anxiety. Depression was present in all participants, with mild depression in 10%, moderate in 17%, severe in 22%, and very severe in 51%.[16] In the comparison with this study Dadhwal V et al[17] found 58% women out of 150 with depression according to HDRS, 24% of 150 with anxiety based on HAM-A,

while and 24% with both depression and anxiety. Consistent with our findings, Razzaque MA et al[18] reported that the highest proportion of participants exhibited severe levels of depression (58.2%), severe anxiety (57.3%), and severe stress (50.0%), all of which were significantly associated with primary infertility. On other hand Abbasi S et al[19] reported that the 75% of women with infertility had anxiety, whereas a comparatively lower proportion of the women 31% had depression. Some variations in the prevalence of anxiety and depression across studies may be due to differences in study populations, including educational level, cultural background, and socioeconomic status, which can influence psychological outcomes. Additionally, the use of different assessment tools and cut-off scores, the timing of evaluation during infertility treatment, and cultural attitudes toward mental health and willingness to report symptoms may contribute to under or the overestimations across the studies.

Furthermore, in this study mild anxiety was most common, particularly among women aged 20 to 35 years and housewives, and was significantly associated with education and occupation, while the depression, most frequent in the same age group with moderate severity, showed no significant association with any demographic variables. Consistently according to the study by Jennifer Joy J et al[16] the anxiety showed a negative correlation with age and a positive correlation with the duration of infertility. Women with lower education levels experienced higher anxiety, while those who were employed reported lower anxiety levels. Additionally, Lakatos E et al[20] reported that their model explained 58% of the variability in depressive symptoms and 62% of the variability in trait anxiety, with depressive symptoms and anxiety in infertile women being linked to age, social concerns, sexual concerns, and maternal relationship stress, while trait anxiety was additionally associated with financial stress. In aligns to this study Kamışlı S et al[12] also concluded that the lower educational and unemployed women were associated with higher BDI and BAI scores, and anxiety levels was raised with longer durations of infertility. Furthermore, they suggested that the women undergoing infertility treatment who have limited education, are not employed, or have experienced extended periods of unprotected intercourse should be regarded as high-risk for anxiety and depression and prioritized for screening.[12] In the study by Wang L et al[21] also reported that the highly educated patients were more likely to develop anxiety symptoms, whereas older patients were more susceptible to depression symptom. This study overall found high levels of anxiety and depression among women with infertility. Infertility is a multifaceted condition influenced by a wide range of biological, psychological, and social factors, and this study has several significant limitations, preventing it from fully addressing all aspects. Therefore, further large-scale, multicenter, and longitudinal research is needed to evaluate infertility more comprehensively, including the complex correlations of demographic, cultural, and psychosocial factors, and to better understand the long-term psychological impact in this affected female population.

Conclusion

As per study conclusion the infertility possesses a significant psychological impact on women of reproductive age, with most experiencing mild to moderately anxiety and depression. Specially the anxiety showed a significant link with educational and occupational status, while depression did not vary notably across demographic characteristics. Hence, it is very important to incorporate psychological assessment and counseling as part of infertility treatment to improve both emotional well-being and treatment outcomes. Close family members should also include the, as impaired mental health can further reduce the chances of fertility. As infertility is a complex issue influenced by multiple factors and due to limitations of present study, the findings cannot be considered as finally conclusive. Therefore, further large-scale and longitudinal studies recommended to explore this issue more comprehensively and to better understand the long-term psychological impact of infertility in this population.

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