

Emotional Challenges of Infertility: Analyzing Anxiety and Depression Among Couples in Twin Cities

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ABSTRACT

Objective The aim of this research is to evaluate the emotional challenges and determinants of anxiety and depression among infertile couples in the Twin Cities.

Methodology: A cross-sectional study was carried out among 369 infertile couples. The study was carried out over a six-month period from October 2024 to March 2025. Study subjects were evaluated through Hamilton Anxiety and Depression Scales and demographics were recorded using the structured interviews. All the collected data was entered and analyzed through SPSS v.25.

Results: The results of the study revealed that there were considerable gender differences in the level of psychological distress among subfertile people. Women had higher levels of anxiety (56.1% vs. 32.3%, $p=0.002$) and depression (47.7% vs. 27.6%, $p=0.001$) than men and severe levels of anxiety (8.4%) and severe levels of depression (6.5%) were more prevalent in women. The rates of depression were higher in people with primary subfertility (54.4% vs. 45.4% $p=0.018$) but there was no significant difference in the rates of anxiety between primary and secondary subfertility ($p=0.145$). The residential status also affected the patterns of anxiety: among the urban residents majority had moderate (32.5%) and less anxiety level (21.0%) and majority (51.3%) of the rural inhabitants had no anxiety or higher number of couples had severe anxiety (13.7%, $p=0.032$). The socioeconomic status influenced the uptake of the treatment with the lowest uptake of (34.8%) reported by low-income couples and 65.2% cases who did not opt for any treatment belonged to low-income class.

Conclusion: Infertility presents a significant psychological burden especially on women and couples with primary subfertility. Mental health issues are further worsened with respect to living status in urban or rural areas as well as by low-income status. The findings support combined mental health screening, psychosocial interventions, and policies to enhance access to treatment particularly in vulnerable populations.

Keywords: Infertility, Anxiety, Depression, Gender Disparities, Mental Health, Socioeconomic Factors, Urban-Rural Differences.

Introduction

The World Health Organization (WHO) defined subfertility as the inability to get pregnant after 12 or more months of unprotected sex.¹ In the UK, it is believed that 1 couple out of every 7 has had a problem conceiving at some stage of their reproductive life.² A research report published by Pakistan Journal of Medical Research showed that about 21.9% of couples in Pakistan have infertility problems.³ Infertility may be a problematic issue to many couples and one should know what triggers it. Studies reveal that in most instances, there is at least one precedent of infertility. Nevertheless, one should remember that about a quarter of infertile couples do not have any known cause. Being aware of this fact, the couples are in a position to be proactive and seek to investigate all the possible causes of infertility and collaborate with healthcare experts to determine the most appropriate solutions to their own case.⁴

It is quite a well-known fact that the birth of a child is of great importance to a couple and when a couple cannot conceive, families and relatives pressurize them. Infertility is perceived as an issue that only women are affected and results in emotional, psychological and social disorders in many communities. This may result in anxiety and depression in women.⁵ This eventually leads to the reduction of the general quality of life of the couple and marital conflicts. There is pressure on both of the partners and this may cause different degrees of anxiety to each partner. We should understand the seriousness of this problem and strive to offer help and remedies to the struggling infertile.⁶

Another area that couples experience a lot of anxiety is the treatment of infertility because it requires a long-term intervention and there is no certainty of success.⁷ Apprehension may occur due to frequent

visits to hospitals, investigations and procedures which may affect the outcomes of infertility treatments.⁸ Having gone through procedures like IVF, couples usually spend their time in great anticipation of knowing whether the cycle has been successful and they are pregnant. This waiting period can cause restlessness and agitation.⁹ These treatments are quite expensive and can put a significant financial burden on the couple. In our society, this burden is mainly borne by men which can cause a constant state of depression and feelings of helplessness. Sometimes, couples are forced to stop the treatments which can lead to different depressive disorders.

Early detection of depression and anxiety in couples arising from infertility and its treatments is crucial for successful infertility treatment and healthy lifestyle of couples. In this study, our aim is to investigate levels of anxiety in both male and female partners due to primary and secondary subfertility, and to identify related factors.

Methodology

This descriptive cross-sectional study was conducted at the Infertility Clinic of the Department of Obstetrics and Gynecology, Dr. Akbar Niazi Teaching Hospital, Islamabad. The study was carried out over a six-month period from October 2024 to March 2025. A sample size of approximately 369 infertile couples was estimated using the WHO sample size calculator based on 95% confidence level, expected prevalence of anxiety and depression in infertile couples of 40%, and 5% margin of error.

A non-probability consecutive sampling technique was used, where every subject meeting the inclusion criteria was selected until the required sample size was reached. Inclusion criteria were couples who had a history of primary or secondary subfertility, couples who had no known mental health problems, and couples who could read. In case of participants who could not read, the questionnaire was given by the attending doctor. Only those couples that gave informed consent were included. Couples where at least one of the partners had a known history of mental health issues, either psychotic or bipolar disorder, were excluded.

After obtaining the informed consent, the respondents were evaluated using the Hamilton Anxiety and Depression Scale on anxiety and depression. The summation of the responses to individual questions formed the total score and the range of scores was interpreted as follows: scores <7 means no depressive symptoms, 7-17 mild depression, 18-24 moderate depression and 25 and above severe depression. The structured proforma was used to gather data, it contained demographic information as well as clinical

information of the couples undergoing infertility treatment.

All data collected were entered and analyzed with SPSS version 25.0. The qualitative variables were coded and analyzed in terms of frequencies and percentages whereas quantitative variables were presented in the form of mean $\pm$ standard deviation. The Chi-square test was used to test the association between infertility status, anxiety and depression levels. A p-value less than 0.05 was taken as statistically significant.

Results

The sample consisted of 369 infertile couples and their demographic characteristics are described in Table I. The mean age of husbands and wives was 34.2 ± 5.8 and 30.6 ± 5.1 years respectively, and the mean duration of marriage was 6.4 ± 3.2 years. There was a significant difference in educational status, with 68.3% of husbands having secondary education or higher as compared to 58.8% of wives, and the rate of illiteracy (13.8 vs 4.1%, p-value > 0.05) was significantly greater among wives as compared to husbands. Occupation patterns revealed that 71.5% of the husbands worked in business/private sector and 64.2% of the wives were housewives. There were 58.2 % urban and 41.8% rural residents.

Table I: Demographic Characteristics of Infertile Couples. (n = 369)

Variable	Category	Frequency (%)
Age (years)	Husband	34.2 ± 5.8
	Wife	30.6 ± 5.1
Duration of Marriage	Mean $\pm$ SD	6.4 ± 3.2
Education (Husband)	Illiterate	15 (4.06%)
	Up to matric	102 (27.65%)
	Secondary or above	252 (68.29%)
Education (Wife)	Illiterate	51 (13.82%)
	Up to matric	101 (27.37%)
	Secondary or above	217 (58.8%)
Occupation (Husband)	Jobless	29 (7.86%)
	Govt. Job	76 (20.60%)
	Business/Private Job	264 (71.5%)
Occupation (Wife)	House wife	237 (64.2%)
	Govt. Job	49 (13.28%)
	Private Job	83 (22.49%)
Residence	Urban	215 (58.2%)
	Rural	154 (41.8%)

Table II shows that there is a significant difference in gender regarding psychological distress. There were higher levels of anxiety (56.1% and 32.3% respectively, p=0.002) and depression in women (47.7% and 27.6%, p=0.001) as compared to male partner. Women experienced. The rate of severe anxiety was more than twice (8.4% vs 3.8%) among

women as compared to men and similar case was observe with severe depression (6.5% vs 2.7%) showing higher rate in women.

Table II: Comparison of Anxiety and Depression Levels with respect to Gender.

	Female (n=369)	Male (n=369)	p-value
Anxiety Levels			
None (<7)	162 (43.9%)	250 (67.7%)	0.002
Mild (7-17)	106 (28.7%)	67 (18.2%)	
Moderate (18-24)	70 (19.0%)	38 (10.3%)	
Severe (≥25)	31 (8.4%)	14 (3.8%)	
Depression Levels			
None (<7)	193 (52.3%)	267 (72.4%)	0.001
Mild (7-17)	94 (25.5%)	59 (16.0%)	
Moderate (18-24)	58 (15.7%)	33 (8.9%)	
Severe (≥25)	24 (6.5%)	10 (2.7%)	
Total	369 (100%)	369 (100%)	

Table III: Mental Health Outcomes by Subfertility Type (N=369)

Mental Health Status	Subfertility Type		Total	p-value
	Primary (n=217)	Secondary (n=152)		
Anxiety Levels				
None (<7)	83 (38.2%)	79 (52.0%)	162	0.145
Mild (7-17)	67 (30.9%)	39 (25.7%)	106	
Moderate (18-24)	45 (20.7%)	25 (16.4%)	70	
Severe (≥25)	22 (10.1%)	9 (5.9%)	31	
Depression Levels				
None (<7)	99 (45.6%)	83 (54.6%)	182	0.018
Mild (7-17)	62 (28.6%)	32 (21.1%)	94	
Moderate (18-24)	38 (17.5%)	20 (13.2%)	58	
Severe (≥25)	18 (8.3%)	6 (3.9%)	24	

Table III demonstrated the association of subfertility type with mental health outcomes. Although there was no significant difference in the levels of anxiety between primary and secondary subfertility ($p=0.145$), the prevalence of depression was significantly higher in cases of primary subfertility (54.4% vs 45.4%,

$p=0.018$). It is important to note that there was two times more severe depression in primary (8.3%), in contrast to secondary subfertility (3.9%).

The residential status of the couple showed an association with anxiety patterns (Table IV). Mild and moderate forms of anxiety were more prevalent in urban residents (32.5% vs 20.5%) and moderate anxiety (21.0% vs 14.5%), whereas no anxiety (51.3% vs 40.5%) and severe anxiety (13.7% vs 6.0%, $p=0.032$) were more prevalent in rural residents.

The treatment-seeking behavior differed markedly across income levels (Table V). The highest treatment uptake was observed among the middle-income couples (58.3%), which was higher than low-income (34.8%) and high-income (44.7%) couples ($p=0.001$). Income status of the couples showed a strong relationship with treatment seeking behavior as it was noted that (65.2%) of low-income couples did not seek treatment.

Table V: Treatment Status by Income

Income	Received Treatment	No Treatment	Total	p-value
Low	32 (34.8%)	60 (65.2%)	92	0.001
Middle	112 (58.3%)	80 (41.7%)	192	
High	38 (44.7%)	47 (55.3%)	85	
Total	182	187	369	

Discussion

The findings of this current research indicated that there were high levels of psychological burden among infertile couples in Twin Cities, having a significant gender difference in mental health outcomes. The observation that women have significantly higher rates of both anxiety (56.1% vs 32.3%) and depression (47.7% vs 27.6%), is also in line with international research that have shown the gendered effects of infertility.^{10,11} The observation can be attributed to the sociocultural expectancy that women bear greater responsibility of bearing children, which has been established by other studies.¹² The fact that severe symptoms are more common in women (8.4% anxiety, 6.5% depression) further supports their vulnerability and suggests the need to engage specific psychological interventions.

Table IV: Anxiety Levels by Residence. (N=369)

Residence	No Anxiety (<7)	Mild (7-17)	Moderate (18-24)	Severe (>25)	Total	p-value
Urban	102 (40.5%)	82 (32.5%)	53 (21.0%)	15 (6.0%)	252	0.032
Rural	60 (51.3%)	24 (20.5%)	17 (14.5%)	16 (13.7%)	117	
Total	162	106	70	31	369	

The findings of this research recommended that mental health disparities may be correlated with the level of education, it was observed that the higher rate of wives were illiterate (13.8% vs 4.1%), which could be the cause of these mental health differences. Lack of education can restrict literacy and coping skills, which increases distress.¹³ The fact that housewives made up the bulk of our sample (64.2%) may possibly have been exacerbated by traditional gender roles, which may worsen the psychological impact of infertility on women because motherhood is typically associated with social identity.¹⁴

It was observed in this study that primary subfertility is more closely related to the risk of depression (54.4% vs. 45.4%) than secondary subfertility, which supports the idea that infertility is a terrible loss. Complete infertility may represent a greater risk to someone's identity and possibilities for the future than secondary infertility, in which a couple has already shown that they are fertile. This difference carries significant clinical implications to the counseling methods.

Anxiety patterns in rural and urban areas present a complex picture. Although urban residents had more rates of mild-moderate anxiety (32.5% mild, 21.0% moderate), the rural residents exhibited a bipolar distribution, with higher no-anxiety (51.3%) and severe anxiety (13.7%) rates. This could be a sign of the differences in stressors: rural areas may show more extreme reactions due to a lack of mental health facilities and community demands, while urban areas may cause chronic low-grade anxiety due to treatment availability and financial considerations.¹⁶

There are treatment disparities based on income (58.3% middle-income vs 34.8% low-income uptake), which shows that there is a significant barrier to accessing healthcare. The non-treatment rate of 65.2 percent among low-income couples indicates that finances are still a significant barrier, which is in line with research in developing countries.¹⁷ Ironically, even high-income couples demonstrated a comparatively low uptake of treatments (44.7%), as they might have other coping methods or have more resources to postpone treatment.

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These results have a number of clinical implications. First, infertile couples and especially women should be subjected to routine mental health screening in fertility clinics. Second, specific needs of primary subfertility patients that demonstrate increased depression risks should be addressed. Third, financial obstacles to treatment need to be minimized, and mental health care access should be widened, particularly in rural environments. Limitations of the study are that it is single-centered in nature and uses self-report measures. Longitudinal designs should be included in future studies to monitor mental health transformations during the treatment.¹⁹ The urban-rural disparities, which we have seen, can also be studied through qualitative studies.²⁰

To summarize, infertility in the Twin Cities has individual psychological difficulties that are influenced by gender, form of subfertility, place of residence and socioeconomic status. Treatment of both medical and psychosocial factors is crucial in the provision of maximum care to the patients.

Conclusion

This case study highlights that infertility is a major psychological issue among couples in the Twin Cities as women exhibit high levels of anxiety (56.1) and depression (47.7) than men, and primary cases of subfertility result in more depressive symptoms than secondary cases. There was a higher prevalence of no anxiety and severe anxiety amongst the urban residents and rural residents respectively, indicating that the patterns of stress vary significantly in different residential environments. The financial barriers had a significant impact on access to treatment, and low-income couples were the least likely to be treated. These results underscore the importance of combined mental health screening in reproductive centers, special psychological counseling of the at-risk populations, and policy-based interventions to enhance the affordability and accessibility of treatment, especially in underprivileged groups. Addressing both medical and psychosocial aspects of infertility is crucial for comprehensive patient care and improved outcomes.

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