ORIGINAL ARTICLE

Assessment of Psychiatric Morbidity in Couples With Infertility Attending Fertility Care Centre, In A Tertiary Care Hospital

Javeed Zabiullah MK, Ajay Bhattiprolu, Venkatraman Natarajan, Shanthi Nambi

Department of Psychiatry, Saveetha Medical College and Hospital, Saveetha Institute of Medical and Technical Sciences (SIMATS), Chennai - 602105, India

ABSTRACT

Introduction: Infertility often triggers a significant life crisis characterized by emotional, sociocultural, and financial distress. This study aims to evaluate the prevalence and severity of anxiety and depression among infertile couples and identify potential associations with socio-demographic variables and treatment duration. **Methods:** Forty-one clinically diagnosed infertile couples were enrolled; individuals with pre-existing psychological disorders were excluded. A semi-structured proforma captured clinical profiles, while the General Health Questionnaire (GHQ-28) assessed mental health across four domains: somatic symptoms, anxiety/insomnia, social dysfunction, and severe depression. Scores were calculated using a Likert scale (0–3), with a total score of 24 or higher indicating significant psychological distress. **Results:** The mean age of diagnosis for male infertility was found to be 28.4 years with a standard deviation of 4.5, whereas for females, the mean age was 24.8 years with a standard deviation of 4.2. This variation in the age of diagnosis between genders was determined to be statistically significant, with a p-value of less than 0.05, according to the Independent t-test analysis. **Conclusion:** Anxiety and depression are prevalent conditions among individuals experiencing infertility, necessitating interventions to mitigate these psychological impacts. The General Health Questionnaire (GHQ-28) proves to be an effective instrument for screening and identifying psychiatric disorders in couples dealing with infertility, highlighting its utility in the clinical assessment and support of this population.
Malaysian Journal of Medicine and Health Sciences (2026) 22(SUPP5): 55-60. doi:10.47836/mjmhs.22.s5.11

Keywords: Infertility, Anxiety, Depression, General Health Questionnaire, Married couple

Corresponding Author:
Ajay Bhattiprolu, MD Psychiatry
Email: ajayonli4u89@gmail.com
Tel: +91 9704286755

INTRODUCTION

Fertility is an important and crucial event in the life of a married couple. The inability to conceive without contraception after one year of trying is defined as infertility for women under the age of 35 (2). Contributing factors to infertility include age, lifestyle choices, and medical conditions (3). The global prevalence of infertility is concerning, affecting over 48 million couples and 186 million individuals worldwide (4). The World Health Organization (WHO) recognizes infertility as a significant social and health issue, with prevalence rates varying from less than 5% to over 30% across different regions (4). Notably, WHO estimates that more than 10% of women have experienced prolonged infertility, remaining in a stable relationship for five years or more without success (4). The overall burden of infertility is substantial and likely underestimated, with no significant decrease observed over the last 20 years (5).

Regions such as South/Central Asia, Sub-Saharan Africa, North Africa/Middle East, and Central/Eastern Europe experience particularly high rates of infertility (3). Infertility affects men and women equally, with a third of cases attributable to male factors, another third to female factors, and the remaining cases due to combined issues or unidentified causes (3). Infertility is categorized into primary, defined as the inability to conceive a first pregnancy, and secondary, the inability to conceive subsequent pregnancies regardless of the outcome of any previous pregnancies (4).

Beyond the psychological impact, infertility leads to physical, emotional, and financial strain (6). Psychological problems linked to infertility include anxiety, depression, obsessive-compulsive symptoms, psychoticism, and substance abuse, all contributing to the deteriorated mental and social well-being of affected women (7). Anxiety is particularly prevalent among infertile individuals, exacerbated in societies like India where the blame for infertility is often placed solely on women, leading to increased stress levels during therapy (8). The societal expectation of childbearing adds to the stress experienced by infertile individuals, impacting

marital relationships and social interactions (8). Compared to their fertile counterparts, infertile women report lower life satisfaction and marital adjustment, while infertile men express reduced sexual satisfaction due to the timing of intercourse around ovulatory cycles (9). Psychological stress is also recognized as a potential clinical risk factor that could negatively affect male fertility, with research indicating an inverse relationship between stress levels and semen quality (8). This stress may further influence the outcome of infertility treatments (8).

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted in a psychiatry unit over a duration of one year, starting from October 2020. The study was registered with the Institutional Ethical Committee (SMCH-IEC), Saveetha Medical college and Hospital: 066/06/2020/IEC/SMCH. The study population comprised outpatients diagnosed with infertility who were undergoing treatment at the facility and met the predefined inclusion criteria. Eligible participants were identified and recruited from the fertility center's Outpatient Department, following initial assessments and confirmation of their infertility diagnosis by a gynecologist. Data collection was facilitated through a semi-structured survey, which included established and reliable scales to assess socio-demographic variables, general health using the General Health Questionnaire (GHQ-28) (1), and the Quality of Life (QOL) specific to infertile couples. The gathered data underwent both descriptive and analytical statistical analyses to derive insights into the prevalence, intensity of anxiety and depression, and their association with socio-demographic factors, duration, and treatment of infertility.

The interview process was designed to last approximately one hour. In instances where the male partner was unavailable for an in-person interview, efforts were made to conduct the interview over the phone, and the questionnaire was sent via email for data collection. This approach ensured the inclusion of the male partner's perspective by providing an opportunity for telephonic interviews to gather pertinent information for the study, alongside offering clarifications on the questionnaire for those who could not visit the center physically. The inclusion criteria were couples registered at a fertility care center who provided informed consent and were at various stages of infertility treatment. Conversely, the study excluded couples who declined participation, female participants with medical conditions that precluded full involvement, and individuals with pre-existing psychiatric illnesses to ensure the clarity and reliability of the research outcomes.

For this study, the General Health Questionnaire (GHQ-28), created by Goldberg and Hillier (1), was utilized to assess various aspects of mental health. This comprehensive questionnaire comprises 28 items, divided into four subsections that focus on evaluating somatic symptoms, anxiety and insomnia, social dysfunction, and depression. Each of these subsections contains seven items, designed to cover a wide range of public health aspects. The GHQ-28 adopts a Likert scoring method, ranging from zero to three, where a score closer to zero indicates a healthier mental state. The overall scores can vary from a minimum of 0 to a maximum of 84, with the threshold for concern established at a cutoff point of 24.

Statistical analysis was performed using IBM SPSS Statistics software, version 21 (IBM Corp., Armonk, NY, USA) (10), following initial data organization in Microsoft Excel. Continuous variables, such as age, were expressed as mean $\pm$ standard deviation (SD), median, and mode to provide a comprehensive descriptive profile of the cohort. To examine the relationships between the various subcomponents of the General Health Questionnaire (GHQ-28) and the total scores, Pearson correlation coefficients were utilized. For all analyses, a p-value of less than 0.05 was considered statistically significant.

RESULTS

The age distribution of the study subjects revealed that males averaged 31.5 ± 4.9 years while the female partners averaged 27.1 ± 4.9 years. The age disparity between male and female study participants was found to be statistically significant, with a p-value of less than 0.05 according to the Independent t-test. In terms of education, 41.5% of male partners attained secondary education, making it the most common educational level, followed by high school completion at 31.7%. A smaller fraction, 7.3%, were illiterate, and only 2.4% had attained a graduate degree. For female partners, 39% completed high school, and an equal percentage (31.7%) finished secondary education, while the proportion of illiterates and graduates was minimal, each accounting for 2.4%.

Regarding occupational status, 9.8% of male partners were unemployed, with the majority employed in skilled (36.6%) and semi-skilled (22.0%) professions. Among women, 14.6% were employed, whereas a significant majority, 85.4%, were homemakers. The socio-economic status analysis revealed that the middle and lower classes represented 90.2% of the study population, with the upper class constituting only 9.8%. The distribution of infertility within the study group showed that 43.9% of cases were diagnosed solely among female partners, in contrast to 34.1% among male partners. Cases involving both partners accounted for 22% of the population, highlighting the varying prevalence of infertility across gender groups and the complexities involved in its diagnosis and attribution.

The average age at which males were diagnosed to be infertile was 28.4 ± 4.5 years,(figure 1) while the average age at which females were diagnosed to be infertile was 24.8 ± 4.2 years (Table I). The observed difference in age between the male and female participants was determined to be statistically significant, with a p-value of less than 0.05, according to the Independent t-test. When examining the average duration of infertility, it was found to be similar between the partners, though males exhibited a marginally longer duration of infertility, averaging 4.2 years, compared to their female counterparts, who averaged 3.4 years (Table II).

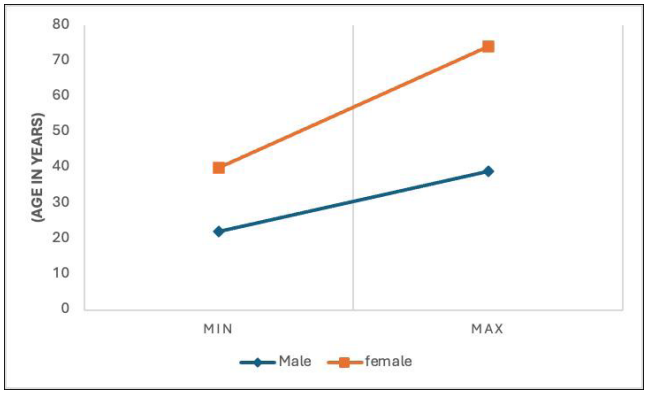

Figure 1: Distribution of Age at Diagnosis of Infertility in Study Participants

Table I : Age at diagnosis of infertility (in years)

Age @ diagnosis	Min	Max	Mean	SD	Median	IQR	p-value
Male	22	39	28.4	4.5	27	26, 31	0.007
Female	18	35	24.8	4.2	23	22, 27	

Independent t-test used;
p-value <0.05 is significant;

Table II: Duration of infertility (in years)

Duration	Min	Max	Mean	SD	Median	IQR	p-value
Male (n=23)	1	11.5	4.2	3.1	3.5	2, 5.5	0.27
Female (n=27)	1	8	3.4	1.9	3.0	2, 5.5	

Independent t-test used;
p-value <0.05 is significant;

The data revealed that a majority (61%) of the couples had previously undergone one treatment cycle, followed by 26.8% who had completed two cycles. Notably, approximately 4.9% of the participants had undergone six cycles, marking the highest number of attempts among the group. The prevalence of medical co-morbidities among female spouses was found to be around 31.7%. This data, along with the differences in the distribution of these co-morbidities, was analyzed using Pearson's Chi-square test, which did not reveal any statistically significant differences ($p > 0.05$). These findings are discussed directly within the results text, as no separate table is provided for these details.

Additionally, substance use was identified in 17.1% of male partners, in contrast to 9.8% among female partners, highlighting a disparity in substance use prevalence between genders. However, this difference was not found to be statistically significant as given by Pearson's Chi-square test ($\chi^2 = 3.9$, p-value = 0.04).

The General Health Questionnaire-28 (GHQ-28) encompasses four subscales aimed at evaluating somatic symptoms, anxiety or insomnia, social dysfunction, and severe depression. These mental health-related conditions were analyzed and compared between male and female partners (table III). While the scores for GHQ-1 were similar for both groups, the scores for GHQ-2 (anxiety or insomnia), GHQ-3 (social dysfunction), and GHQ-4 (severe depression) were significantly higher in females compared to males, indicating a greater prevalence of these issues among female partners ($p < 0.05$). The Independent t-test was utilized to determine these statistical significances.

Table III : Distribution of scores of General Health Questionnaire:

	Min	Max	Mean	SD	Median	IQR	p-value
GHQ 1							
Male	2	21	12.8	3.9	12	10, 15	0.12
Female	7	21	14.3	4.4	13	10, 19	
GHQ 2							
Male	7	20	11.6	3.3	11	9, 13	0.004
Female	8	21	14.2	4.3	13	10.5, 18.5	
GHQ 3							
Male	7	20	11.6	3.4	12	8.5, 14	0.005
Female	7	21	14.2	4.6	14	10, 19	
GHQ 4							
Male	5	19	11.3	3.2	11	9, 13	0.001
Female	5	29	14.7	5.2	13	10.5, 19.5	

Independent t -test was used; p-value <0.05 is significant;

Table IV shows the relationship between age at diagnosis of infertility and duration of infertility with their respective GHQ scores among both male and female partners. It was observed that the duration of infertility was found to be correlated with worsening of the quality of life of both male and female partners. Spearman's correlation test was used (Table V). No relationship was observed between age at diagnosis and the GHQ scores.

Table IV : Correlation with General Health Questionnaire in males with infertility

MALES WITH INFERTILITY		AGE AT DIAGNOSIS OF INFERTILITY	DURATION OF INFERTILITY
GHQ1	Correlation Coefficient	.353	-.724**
	Sig. (2-tailed)	.099	<0.001
	N	23	23
GHQ2	Correlation Coefficient	.297	-.687**
	Sig. (2-tailed)	.169	<0.001
	N	23	23
GHQ3	Correlation Coefficient	.273	-.538**
	Sig. (2-tailed)	.208	0.008
	N	23	23
GHQ4	Correlation Coefficient	.181	-.574**
	Sig. (2-tailed)	.409	0.004
	N	23	23

Spearman's Correlation coefficient used;
p-value <0.05 is significant;
* p-value <0.05 is significant; ** p-value <0.01 is highly significant.

Table V : Correlation with General Health Questionnaire in females with infertility

FEMALES WITH INFERTILITY		AGE AT DIAGNOSIS OF INFERTILITY	DURATION OF INFERTILITY
GHQ1	Correlation Coefficient	-.109	-.546**
	Sig. (2-tailed)	.589	0.003
	N	27	27
GHQ2	Correlation Coefficient	.024	-.552**
	Sig. (2-tailed)	.906	0.003
	N	27	27
GHQ3	Correlation Coefficient	-.119	-.289
	Sig. (2-tailed)	.553	.144
	N	27	27
GHQ4	Correlation Coefficient	-.371	-.406*
	Sig. (2-tailed)	.057	0.036
	N	27	27

Spearman's Correlation coefficient used;
p-value <0.05 is significant;
* p-value <0.05 is significant; ** p-value <0.01 is highly significant.

DISCUSSION

Infertility, as commonly defined by medical professionals, refers to the incapacity to achieve pregnancy following a year of regular, unprotected sexual intercourse (2). Beyond the immediate psychological impact, infertility imposes significant physical, emotional, and financial burdens on affected couples, markedly deteriorating their quality of life. This reproductive challenge not only strains marital relationships but may also escalate the likelihood of divorce. Particularly in developing countries, societal norms often unfairly attribute the blame for infertility to women, despite evidence showing that only one-third of infertility cases are due to female factors (2, 6). This disparity highlights the need for increased awareness and a more balanced understanding of infertility's multifaceted causes, underscoring the importance of addressing both the medical and societal dimensions of infertility to mitigate its wide-ranging effects on couples.

In our study, the males averaged 31.5 ± 4.9 years, while the female partners averaged 27.1 ± 4.9 years. This clearly shows that the majority of patients belong to the age group between 25-35 years. In a similar study conducted by Tilahun et al. (11), the age of study participants is between 20 to 65 years with a mean age of 30.2 ± 8.1 years, which is similar to our study. In a study conducted by Patel A et al. (12), participants ranged in age from 24 to 54 years, with a median age of 35. The duration of marriages varied from 8 months to 20 years, with a median of 2 years, and the duration of infertility ranged from 0 to 12 years, with a median of 1 year. In contrast, our study observed that the distribution of infertility issues was 34.1% among male partners and 43.9% among female partners, with both partners being involved in 22% of cases. This is in comparison to a study by Rashidi B et al. (13), where male factors

accounted for 56.8% of infertility cases, female factors for 23.7%, involvement of both partners in 8.4%, and unexplained factors in 13.2%. Notably, male factors contributing to infertility were more prevalent in Rashidi B et al.'s study than in ours.

The General Health Questionnaire-28, which assesses somatic symptoms, anxiety or insomnia, social dysfunction, and severe depression, was used to evaluate mental health conditions among the study participants. While somatic symptoms were similar between male and female partners, females were significantly more affected by anxiety/insomnia, social dysfunction, and severe depression compared to males. This finding aligns with a study by Moghadam M et al. (14), which reported that the average total general health score of women was higher than that of men, indicating poorer general health among females. These studies collectively highlight the nuanced impacts of infertility on mental health and the gender differences in the experience and effects of infertility.

The mean grade scores of GHQ for males was 17.5 ± 9.97 and for females 22.92 ± 13. Moghadam M et al. (14) further elucidated that the relationship between gender and the General Health Questionnaire (GHQ) scores, both overall and across all sub-scales, was significantly different, indicating a notable disparity in mental health impacts between males and females. Interestingly, they found no correlation between the duration of infertility and the mean grade scores of the GHQ sub-scales or the total GHQ score. Contrary to this, their findings suggested that the mean grade scores of the GHQ were directly proportional to the duration of infertility, underscoring the compounding effect of prolonged infertility on mental health.

Alizadegan et al. (15) reported a prevalence of depression among infertile women and men at 48% and 23.8%, respectively, with severe depression affecting 5.3% of women and 2.5% of men. This highlights the greater psychological burden borne by women in the context of infertility.

Verma et al. (6), utilizing the Hospital Anxiety and Depression Inventory, identified six risk factors, with an average score of 12.16 among infertile females, indicating that 68.6% of them were experiencing both anxiety and depression. Further, upon administering Beck's Depression Inventory to the same demographic, 56.4% of females were found to be suffering from depression. Our study corroborates these findings, demonstrating that infertility significantly impacts the mental health of both genders, with females particularly more susceptible to anxiety, insomnia, social isolation, and severe depression compared to males. Infertility detrimentally affects the quality of life for all affected individuals, regardless of gender. We noted a marked decline in the quality of life among both male and female partners dealing with infertility. Thus, it is imperative that couples undergoing infertility treatment receive comprehensive counseling and support to mitigate anxiety and depression symptoms, potentially enhancing pregnancy success rates. This holistic approach to infertility treatment underscores the importance of addressing the psychological well-being of couples alongside medical interventions.

CONCLUSION

The structural validity and internal consistency of the General Health Questionnaire (GHQ), along with its congruence with outcomes from other research, affirm that the GHQ is suitable, comprehensible, and clear for infertile women, presenting no difficulties in its application within the study. Anxiety and depression are prevalent conditions among individuals grappling with infertility, underscoring the necessity for interventions to mitigate these psychological impacts. The GHQ emerges as a highly effective instrument for the screening and identification of psychiatric disorders among infertile couples, highlighting its utility in addressing the mental health challenges associated with infertility.

ACKNOWLEDGEMENTS

We extend our gratitude to the patients and their families for their cooperation and participation in this study. We also acknowledge the support of the staff at Hospital, for their assistance in patient care and data collection. Special thanks to the institutional review board and ethics committee for their guidance and approval of this study. Finally, we are grateful to our colleagues and professors for their insightful feedback and contributions to this research.

REFERENCES

1. Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. Psychol Med. 1979 Feb;9(1):139-45. doi: 10.1017/S0033291700021644.
2. Rooney KL, Domar AD. The relationship between stress and infertility. Dialogues Clin Neurosci. 2018 Mar;20(1):41-47. doi: 10.31887/DCNS.2018.20.1/klrooney.
3. Dar MA, Shah SB, Ahmad SN, et al. Psychiatric morbidity and quality of life in infertile females: a cross-sectional, case-controlled hospital-based study. Middle East Curr Psychiatry. 2022;29:89. doi: 10.1186/s43045-022-00257-2.
4. Almutawa YM, AlGhareeb M, Daraj LR, Karaidi N, Jahrami H. A systematic review and meta-analysis of the psychiatric morbidities and quality of life differences between men and women in infertile couples. Cureus. 2023 Apr 9;15(4). doi: 10.7759/cureus.37327.
5. Sbaragli C, Morgante G, Goracci A, Hofkens T, De

Leo V, Castrogiovanni P. Infertility and psychiatric morbidity. Fertil Steril. 2008;90(6):2107-11. doi: 10.1016/j.fertnstert.2007.10.045.
6. Verma P, Rastogi R, Sachdeva S, Gandhi R, Kapoor R, Sachdeva S. Psychiatric morbidity in infertility patients in a tertiary care setup. J Clin Diagn Res. 2015 Sep;9(9). doi: 10.7860/JCDR/2015/14290.6419.
7. Zain N, Naphade N, Nilesh J, Shetty V, Asmita V, Jagtap A. Assessment of depression and anxiety in couples with infertility. Ann Indian Psychiatry. 2023 Jul-Sep;7(3):207-11. doi: 10.4103/aip.aip_203_22.
8. Sharma A, Shrivastava D. Psychological problems related to infertility. Cureus. 2022 Oct 15;14(10). doi: 10.7759/cureus.30320.
9. Kocelak P, Chudek J, Naworska B, et al. Psychological disturbances and quality of life in obese and infertile women and men. Int J Endocrinol. 2012;2012:236217. doi: 10.1155/2012/236217.
10. IBM Corp. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp; 2012.
11. Tilahun T, Ayele G, Birhanu M, et al. Psychological distress among infertile couples in Ethiopia: a cross-sectional study. Reprod Health. 2020;17(1):86. doi: 10.1186/s12978-020-00938-3.
12. Patel A, Sharma PSVN, Narayan P, Nair BVS, Narayanakurup D, Pai PJ. Distress in infertile males in Manipal - India: A clinic-based study. J Reprod Infertil. 2016 Oct 1;17(4):213.
13. Rashidi B, Ramezanzadeh F, Montazeri A, Shariat M, Abedinia N, Ashrafi M. Health-related quality of life in infertile couples receiving IVF or ICSI treatment. BMC Health Serv Res. 2008;8:186. doi: 10.1186/1472-6963-8-186.
14. Direkvand-Moghadam A, Delpisheh A, Direkvand-Moghadam A. Effect of infertility on the quality of life, a cross-sectional study. J Clin Diagn Res. 2014 Oct 20;8(10). doi: 10.7860/JCDR/2014/8481.5063.
15. Alizadegan S, Ashrafi M. Mental health status of women referring to Royan infertility treatment center. Fertil Steril. 2005. doi: 10.1016/j.fertnstert.2005.07.597.