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Original Research Article

Psychological impact of infertility: A study on depression levels among women in treatment

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Abstract

Background: Infertility is a distressing medical condition that not only impairs reproductive potential but also adversely impacts psychological well-being. Women undergoing fertility treatment are particularly vulnerable to emotional disturbances, with depression being one of the most common mental health issues they face. Understanding the prevalence and correlates of depression in this population is essential for improving patient care.

Aim and Objective: The aim of this study was to assess the level of depression among women visiting infertility clinics and to determine its association with selected socio-demographic variables.

Materials and Methods: A descriptive research design with a quantitative approach was adopted. The study was conducted among 100 infertile women attending selected infertility clinics in Vadodara, Gujarat. Data were collected using a structured questionnaire comprising socio-demographic variables and the Modified Hamilton Depression Rating Scale (HDRS). Descriptive and inferential statistics were used for data analysis.

Results: Findings revealed that 76% of the participants experienced varying levels of depression. Of these, 34.21% were found to have severe depression, while 25% had very severe depression. Depression levels were significantly associated with socio-demographic variables such as age, type of family, monthly income, age at marriage, and years since marriage.

Conclusion: A high prevalence of depression was observed among women undergoing infertility treatment, with many experiencing severe psychological distress. These results highlight the pressing need to integrate mental health screening and psychological support into infertility care services to enhance overall treatment outcomes and emotional well-being.

Keywords: Depression, Psychological distress, Hamilton depression rating scale, Mental health, Infertility.

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1. Introduction

Infertility is widely recognized as a global health issue, affecting millions of individuals and couples across diverse populations. According to the World Health Organization, infertility impacts nearly 17.5% of the adult population worldwide. In the Indian context, about 8.8% of married women face infertility issues, a situation often exacerbated by socio-cultural pressures that link a woman's identity with her ability to bear children.[1] For many women, infertility is not just a medical issue but an emotional and psychological crisis.[2] Women undergoing fertility treatment frequently report feeling isolated, ashamed, and hopeless. They may experience strained relationships, both with partners and extended family members, and in extreme cases, face domestic abuse or social ostracism. Depression, anxiety, and sleep disorders are commonly reported in such populations.[1] The psychological burden of infertility is compounded by socio-demographic factors such as age, education level, family income, lifestyle habits, and marital history. Women over the age of 30 or those with long-standing infertility tend to show higher levels of psychological distress.[3] Additionally, low socioeconomic status has been linked with more severe depression symptoms due to limited access to treatment and social support. Despite the prevalence of mental health issues among infertile women, psychological

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screening and counselling remain inadequately addressed in most infertility clinics in India. Existing research has emphasized the importance of including psychosocial evaluations in infertility treatment protocols.[4] However, empirical data on this issue remain sparse, especially in tier-two cities like Vadodara. This study aims to assess the level of depression among women visiting infertility clinics in Vadodara and to identify socio-demographic factors associated with depression. Understanding the prevalence and associated factors can help healthcare providers implement mental health interventions, thereby improving the overall well-being and treatment outcomes for these women.

2. Objectives

These objectives were designed to address a gap in the current healthcare approach, which often overlooks mental health in infertility treatment. By fulfilling these objectives, the study contributes to the existing literature and supports the integration of psychological assessments into reproductive health services.

1. To assess the level of depression among women visiting infertility clinics.
2. To determine the severity of depression among these women using standardized assessment tools.
3. To evaluate the association between depression levels and selected socio-demographic variables such as age, family type, income, educational level, age at marriage, and years since marriage.

3. Materials and Methods

This quantitative study employed a descriptive research design to evaluate the level of depression among infertile women attending selected clinics in Vadodara, Gujarat. The independent variable was infertility, and the dependent variable was the level of depression.

3.1. Setting and sampling

The study was conducted in a private infertility hospital 19.5 km from Parul Institute of Nursing. The sample consisted of 100 infertile women selected through a non-probability convenience sampling technique. This method allowed access to participants who met the inclusion criteria and were available during the study period.

These criteria were essential to ensure that participants could accurately respond to the questionnaire and that the results would be reliable and representative of the targeted population. The age range was selected based on the common reproductive age group most affected by infertility. Women with severe mental disorders were excluded to prevent ethical issues and ensure that the depression observed was primarily linked to infertility and not confounded by other psychological conditions.

3.2. Inclusion criteria

1. Women aged between 23 and 40 years.
2. Diagnosed with infertility and currently attending infertility clinics in Vadodara.
3. Able to understand and respond in English, Hindi, or Gujarati.
4. Willing to participate and provide informed consent.

3.3. Exclusion criteria

1. Women diagnosed with advanced mental illnesses or cognitive impairments.
2. Those unwilling to participate or who withdrew consent during the study.
3. Women with language barriers not covered by the available versions of the research tools.

3.4. Tools for data collection

Data were collected using a structured questionnaire divided into three sections:

1. Section A: Socio-demographic information.
2. Section B: Modified Hamilton Depression Rating Scale (HDRS), which assesses the severity of depression across 17 domains.
3. Section C: Not utilized for this study as the focus was solely on depression (quality of sleep results excluded).

3.5. Tool validity and reliability

Content validity was ensured by subjecting the tool to review by five experts in psychiatric nursing and clinical psychology. Modifications were made based on expert feedback. A pilot study was conducted with 10 participants to assess the feasibility of the tool, and reliability testing was performed using the split-half method, yielding a reliability coefficient of 0.92.

3.6. Ethical considerations

Ethical clearance was obtained from the Institutional Ethics Committee of Parul University (Approval No: PUIECHR/PIMSR/00/081734/7715). All participants provided informed written consent before participation. Anonymity and confidentiality were maintained throughout the research process.

3.7. Data analysis

Data was analyzed using descriptive statistics such as frequency, percentage, mean, and standard deviation. Inferential statistics including Chi-square tests were used to examine associations between levels of depression and socio-demographic variables. A p-value < 0.05 was considered statistically significant.

4. Result

The present study aimed to assess the level of depression among 100 infertile women attending infertility clinics. The

socio-demographic profile of the study participants revealed diversity in age, marital history, and family background. Most women were in the reproductive age group, with many experiencing prolonged infertility. A higher proportion belonged to joint families, where social expectations regarding childbearing were greater. Family income varied, with a significant proportion from lower-income groups, highlighting financial stress alongside emotional distress. The majority were married at a younger age, and the number of years since marriage was significantly related to psychological outcomes. Educational level, occupation, religion, personal habits, and lifestyle factors did not show significant associations with depression levels.(**Table 1**)

Table 1: Association between socio-demographic variables and depression levels among infertile women

Socio-demographic variable	p-value	Significance
Age	0.006	Significant
Family type	0.020	Significant
Family income	0.040	Significant
Age at marriage	0.027	Significant
Years since marriage	0.0105	Significant
Religion	0.452	Not Significant
Educational level	0.378	Not Significant
Occupational status	0.615	Not Significant
Personal habits	0.723	Not Significant
Lifestyle factors	0.689	Not Significant

The findings revealed that a substantial proportion of participants, 76%, experienced some form of depression, while only 24% exhibited no signs of depressive symptoms. Among those diagnosed with depression, the distribution of severity varied. Specifically, 17 women (22.37%) experienced mild depression, 14 women (18.42%) had moderate depression, 26 women (34.21%) suffered from severe depression, and 19 women (25%) experienced very severe depression.(**Figure 1**) These results highlight the significant psychological burden infertility imposes on women, particularly in societies where motherhood is closely tied to a woman's identity and social status. The statistical analysis of depression scores revealed a mean score of 20 with a standard deviation (SD) of 4.95, and a median score of 19. These metrics indicate a moderate level of depression across the overall sample, suggesting that emotional distress is widespread among women undergoing infertility treatment. The high prevalence and severity of depression underline the urgent need for integrating mental health support services into fertility care protocols. Chi-square tests were conducted to explore the association between depression levels and selected socio-demographic variables. The results indicated that certain factors had a statistically significant association with the severity of depression. Age was one such factor, with a p-value of 0.006, suggesting that older women tended to experience more severe depressive symptoms. Family type also showed a significant relationship with depression levels ($p = 0.02$), indicating that women living in joint families were more likely to suffer from severe forms of depression compared to those in nuclear families. Additionally, family income was found to be a significant factor ($p = 0.04$), where women from lower-income groups reported higher levels of depression. Age at the time of marriage ($p = 0.027$) and the number of years since marriage ($p = 0.0105$) were also significantly associated with depression levels, with older age at marriage and longer duration of infertility correlating with greater psychological distress. Conversely, variables such as religion, educational level, occupational status, personal habits (e.g., smoking or alcohol use), and lifestyle factors did not demonstrate statistically significant associations with depression. These findings suggest that while cultural and behavioral elements may play a role, the primary contributors to depressive symptoms in infertile women are more closely tied to socio-economic and familial contexts.

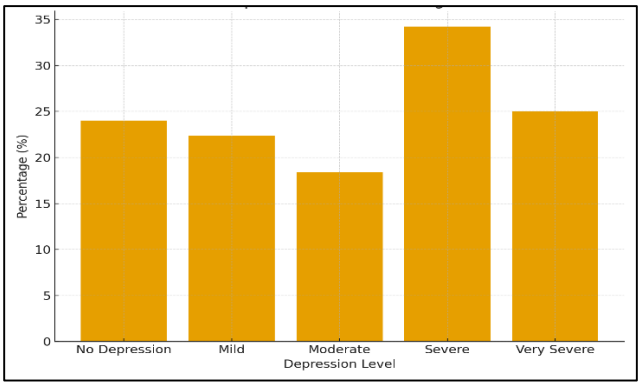

Figure 1: Distribution of depression levels among infertile women

5. Discussion

The present study revealed that a considerable proportion of infertile women (76%) experienced varying degrees of depression, indicating a significant psychological impact associated with infertility. Among these, 34.21% of the participants were found to suffer from severe depression, while 25% exhibited very severe levels of depressive symptoms. These results underscore the profound emotional distress that infertility can cause, particularly in socio-cultural settings where motherhood is deeply intertwined with a woman's identity, self-worth, and social acceptance. The inability to conceive often leads to feelings of inadequacy, guilt, and hopelessness, which are further intensified by societal expectations, stigma, and family pressures.[5] In many cultures, especially in India, a woman's role is traditionally associated with childbearing, and infertility is often perceived as a personal failure rather than a medical condition. Such beliefs can subject women to emotional isolation, marital discord, and social discrimination, thereby exacerbating their psychological

burden. The findings of this study align with global research indicating that infertile women are at a higher risk of depression compared to the general female population. Factors such as age, type of family, income, age at marriage, and years since marriage were found to significantly influence depression levels, suggesting that both personal and socio-economic conditions contribute to mental health outcomes.[6] These findings highlight the urgent need to integrate psychological assessment and counselling into infertility care services. By incorporating mental health professionals into fertility clinics, early detection and management of depression can be ensured, ultimately improving both emotional well-being and treatment outcomes. Addressing the psychological aspects of infertility through empathetic counselling, support groups, and education can help reduce stigma, enhance coping mechanisms, and foster a more holistic approach to reproductive health care.

Similar to the present findings, a study conducted in Iran reported that 61% of infertile women experienced clinical levels of depression, with the severity of symptoms increasing alongside the duration of infertility and older age at marriage.[7] This suggests that prolonged infertility and advancing maternal age contribute to heightened psychological distress, as women may feel increasing pressure and hopelessness over time. Likewise, an Indian study found that 70% of infertile women suffered from depression, with those living in joint families experiencing higher levels of emotional distress compared to women in nuclear families. This observation aligns closely with the current study's results, which also identified family type as a significant factor influencing depression levels.[8] In joint families, social expectations surrounding fertility and childbearing are often intensified, leading to constant reminders, unsolicited advice, and at times, overt criticism. Such an environment can amplify feelings of inadequacy and guilt among women facing infertility, making them more susceptible to depression. In contrast, women in nuclear families may experience relatively less social pressure and greater emotional autonomy, potentially mitigating some of the psychological burden.[9]

These cross-cultural parallels highlight that infertility is not merely a biological or medical condition but a deeply psychosocial issue shaped by cultural norms, family dynamics, and societal values. Recognizing these factors is essential for designing effective mental health interventions that address the emotional and cultural dimensions of infertility. Incorporating psychosocial support and counseling into fertility care can therefore play a vital role in improving women's overall well-being. In contrast, a Turkish study showed that while 50% of infertile women reported mild to moderate depression, only 15% had severe depression, indicating cultural variations in the psychological response to infertility.[10,11] A study from Nigeria also highlighted that women with lower income and longer duration of marriage had significantly higher depression scores, which is consistent with our findings regarding the role of family income and years since marriage.[12]

A study in Pakistan revealed that 62% of infertile women experienced depression, and socio-demographic factors such as age, education, and family income were strongly correlated with severity.[13] Likewise, research conducted in China reported that depression was strongly associated with infertility-related stigma and socio-economic stressors, further supporting the role of contextual and cultural pressures in exacerbating psychological distress.[14]

Taken together, these findings across different cultural and socio-economic contexts confirm that infertility significantly increases the risk of depression among women. However, the contributing factors vary, with socio-economic, familial, and cultural pressures playing critical roles. The consistent evidence across studies highlights the urgent need for routine mental health screening and integration of psychological support services in infertility clinics.[15]

6. Conclusion

The present study assessed the level of depression among 100 infertile women attending clinics in Vadodara. Using the Modified Hamilton Depression Rating Scale, it was observed that 76% of the women experienced depression. Notably, a considerable percentage of the sample experienced severe (34.21%) and very severe (25%) levels of depression. These findings highlight the high psychological burden faced by infertile women. The analysis further revealed significant associations between depression and several socio-demographic variables. Women from joint families, those with lower income, married at an older age, or married for a longer duration reported higher levels of depression. This suggests that social pressures, financial burdens, and prolonged childlessness may significantly affect mental health. The study underscores the necessity for integrating psychological evaluation and counselling into fertility treatments. Mental health professionals should be made part of the infertility treatment teams, and routine screenings for depression should be mandated for women undergoing fertility care. The findings contribute to a growing body of literature emphasizing the biopsychosocial model in reproductive healthcare. Addressing depression early can potentially enhance fertility outcomes and improve the overall quality of life for affected women.

7. Source of Funding

This research did not receive any financial support.

8. Conflict of Interest

The authors declare no conflicts of interest.

9. Ethical Considerations

This study was conducted following the ethical guidelines for research involving human participants. Prior to data collection, ethical clearance was obtained from the Institutional Ethics Committee of Parul University (Approval No: PUIECHR/PIMSR/00/081734/7715).

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