



Emotional Distress, Anxiety, and Resilience in Patients Undergoing IVF Treatment: A Psychological Perspective

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Abstract

Background: Infertility is not solely a reproductive or medical concern; it can become a significant psychological and social stressor affecting identity, interpersonal relationships, emotional well-being, and quality of life. In vitro fertilisation (IVF) provides an important treatment option for individuals experiencing infertility, but the treatment process may itself involve considerable psychological challenges. Repeated treatment cycles, uncertainty regarding outcomes, hormonal changes, financial demands, treatment failure, and the waiting period for pregnancy results may contribute to emotional distress and anxiety. Within the Indian cultural context, these experiences may be further influenced by social expectations surrounding parenthood, stigma, family pressure, and gendered perceptions of infertility.

Objective: The present study aims to examine emotional distress, anxiety, and resilience among patients undergoing IVF treatment and to investigate the relationships among these psychological variables. Particular emphasis is placed on the potential protective role of resilience in reducing emotional distress and anxiety.

Method: A quantitative, correlational research design is proposed. The study plans to recruit approximately 80–120 individuals undergoing IVF treatment using purposive sampling. Participants will be adults between 22 and 45 years of age who are currently undergoing IVF treatment and provide informed consent. Emotional distress will be assessed using the Kessler Psychological Distress Scale (K10), anxiety using the Beck Anxiety Inventory (BAI) or State-Trait Anxiety Inventory (STAI), and resilience using the Connor-Davidson Resilience Scale (CD-RISC). Demographic and treatment-related information will also be collected.

Expected contribution: It is anticipated that emotional distress and anxiety will demonstrate a positive association, whereas resilience will demonstrate negative associations with both outcomes. The study further proposes to examine whether resilience predicts lower levels of emotional distress and anxiety. The findings may contribute to a more psychologically integrated approach to fertility care and highlight the importance of psychological screening, coping support, and resilience-focused interventions within IVF services.

Keywords: infertility, IVF, emotional distress, anxiety, resilience, psychological well-being, fertility treatment, India, coping, psychological intervention

1. Introduction

Infertility is a complex experience that extends beyond its biological dimensions. For many individuals, difficulties in achieving pregnancy can influence emotional well-being, interpersonal relationships, self-perception, and participation in social and family life. The psychological experience of infertility can be particularly complex in cultures where parenthood is strongly associated with adulthood, marital fulfilment, family identity, and social expectations.

In India, reproductive expectations may create an additional psychological burden for individuals and couples experiencing infertility. Social stigma, family pressure, questions regarding parenthood, and gendered attribution of responsibility may contribute to feelings of guilt, shame, helplessness, and isolation. The uploaded research specifically identifies stigma, family interference, and cultural expectations as potentially important contextual factors in understanding infertility-related distress.

The development of assisted reproductive technologies has provided individuals experiencing infertility with additional possibilities for conception. In vitro fertilisation is one such treatment, involving a series of medical procedures that may extend over multiple stages and treatment cycles. Although IVF can provide hope, the process can also create a cycle of anticipation and uncertainty. Hormonal treatment, medical procedures, financial expenditure, repeated appointments, treatment failure, and waiting for pregnancy results may become significant sources of psychological stress.

The psychological experience of IVF is therefore not necessarily confined to a single moment. Patients may experience different emotional reactions during ovarian stimulation, egg retrieval, embryo transfer, the waiting period, and following the treatment outcome. The original research identifies these different phases as important areas for investigation, particularly because distress and anxiety may fluctuate throughout the treatment process.

At the same time, individuals do not respond identically to stressful experiences. Some patients may experience substantial psychological difficulties, whereas others may demonstrate an ability to adapt to adversity and maintain emotional stability. This capacity is commonly conceptualised as **resilience**.

Resilience is particularly relevant to fertility psychology because it shifts the focus from psychological vulnerability alone toward the psychological resources that may help individuals cope with adversity. Rather than assuming that IVF inevitably produces psychological difficulties, examining resilience allows researchers to investigate why individuals exposed to similar treatment-related stressors may experience different psychological outcomes.

The present study therefore focuses on three interconnected psychological constructs: emotional distress, anxiety, and resilience. The central assumption is that emotional distress and anxiety may be positively associated, while resilience may function as a protective psychological resource.

2. Rationale and Research Gap

Previous research identified in the present study indicates that infertility may be associated with substantial psychological distress. Women undergoing IVF have been reported to experience anxiety and depressive symptoms, particularly during periods of uncertainty such as waiting for pregnancy results. Treatment failure may further intensify emotional distress and feelings of hopelessness. The literature reviewed in the research also identifies social support and adaptive coping as potentially beneficial factors.

However, several gaps remain.

First, there is a need for greater India-specific research examining psychological experiences associated with IVF. Cultural expectations surrounding marriage, parenthood, family involvement, and infertility may influence the way treatment-related stress is experienced and managed.

Second, much of the existing work tends to examine individual psychological variables separately. The present study attempts to bring emotional distress, anxiety, and resilience together within a single conceptual framework.

Third, resilience deserves greater attention. Although resilience has been associated with better psychological adjustment in medical populations, further investigation is needed to understand its relationship with distress and anxiety specifically among IVF patients.

Fourth, the original research identifies methodological limitations in the existing literature, including limited longitudinal research, insufficient mixed-method approaches, inadequate cultural adaptation of measurement

instruments, under-representation of male partners, and limited intervention research within Indian fertility settings.

These gaps provide the rationale for investigating psychological adjustment during IVF from both a vulnerability and protective-factor perspective.

3. Objectives

The study has the following objectives:

1. To assess the level of emotional distress among patients undergoing IVF treatment.
2. To measure anxiety among patients undergoing IVF treatment.
3. To assess resilience among IVF patients.
4. To examine the relationship between emotional distress, anxiety, and resilience.
5. To determine whether resilience predicts lower levels of emotional distress and anxiety.

These objectives are consistent with the original research proposal.

4. Hypotheses

Based on the literature reviewed and the proposed conceptual framework, the following hypotheses are formulated:

H1: Emotional distress will be significantly positively correlated with anxiety among patients undergoing IVF treatment.

H2: Resilience will be significantly negatively correlated with emotional distress among patients undergoing IVF treatment.

H3: Resilience will be significantly negatively correlated with anxiety among patients undergoing IVF treatment.

H4: Resilience will significantly predict emotional distress and anxiety among patients undergoing IVF treatment.

These hypotheses provide a testable framework for examining both psychological vulnerability and psychological protection during IVF treatment.

5. Method

Research Design

The study adopts a **quantitative, correlational research design**. This design is appropriate because the study seeks to examine relationships between emotional distress, anxiety, and resilience rather than manipulate psychological variables experimentally.

Participants and Sampling

The proposed sample consists of approximately **80–120 patients undergoing IVF treatment**. Participants will be selected through purposive sampling.

The proposed inclusion criteria are:

- Individuals currently undergoing IVF treatment.

- Individuals between 22 and 45 years of age.
- Individuals willing to provide informed consent.

Individuals with diagnosed severe psychiatric disorders and individuals undergoing fertility treatments other than IVF alone are proposed to be excluded.

Measures

Three principal psychological domains are proposed for assessment.

Emotional distress: The Kessler Psychological Distress Scale (K10) is proposed to assess general psychological distress.

Anxiety: The Beck Anxiety Inventory (BAI) or State-Trait Anxiety Inventory (STAI) is proposed for assessment of anxiety.

Resilience: The Connor-Davidson Resilience Scale (CD-RISC) is proposed to assess the individual's perceived ability to adapt and cope with adversity.

A demographic information sheet will collect relevant variables such as age, duration of infertility, number of IVF cycles, marital duration, and educational background.

Procedure

Ethical approval will be obtained before data collection. Permission will be sought from relevant fertility clinics, and participants will be informed about the purpose and nature of the research. Written informed consent will be obtained before questionnaire administration.

Participant confidentiality and anonymity will be maintained. Questionnaires will be administered individually, followed by appropriate debriefing. Because infertility and IVF can be emotionally sensitive experiences, participants experiencing significant distress will be directed toward appropriate counselling support where necessary.

Data Analysis

Descriptive statistics will be used to examine the distribution and levels of emotional distress, anxiety, and resilience.

Pearson's correlation analysis will be used to examine the relationships among the major psychological variables. Multiple regression analysis may be used to determine whether resilience predicts emotional distress and anxiety while considering relevant demographic or treatment-related variables.

The statistical analysis should be conducted using the actual collected dataset, and effect sizes, confidence intervals, and significance values should be reported in the final publication.

6. Conceptual Understanding of the Variables

The proposed model places **resilience** in the role of a psychological protective factor and emotional distress and anxiety as psychological outcomes.

IVF treatment may expose patients to several stressors, including treatment uncertainty, repeated procedures, financial concerns, hormonal changes, treatment failure, and social expectations. These stressors may contribute to psychological distress and anxiety.

However, individual psychological resources may influence the way these stressors are experienced. Resilience may help individuals adapt to difficult circumstances, maintain emotional stability, and employ more effective coping strategies.

Social and cultural factors may also influence this process. The original research identifies perceived social support, stigma, family pressure, coping style, treatment variables, gender, and demographic factors as potentially relevant variables.

This framework is important because it avoids viewing IVF patients solely through a deficit-based psychological model. Instead, it considers both psychological burden and psychological capacity.

7. Expected Findings and Potential Contribution

Because the current research document represents a proposed study, the following are **expected relationships rather than confirmed findings**.

It is anticipated that emotional distress and anxiety will demonstrate a significant positive relationship. Patients experiencing greater psychological distress may also report greater anxiety during IVF treatment.

It is further anticipated that resilience will demonstrate a negative relationship with emotional distress. Patients reporting stronger resilience may experience lower psychological distress in response to treatment-related challenges.

Similarly, resilience is expected to demonstrate a negative relationship with anxiety. Higher resilience may be associated with greater psychological adaptability when facing uncertainty and repeated treatment demands.

Finally, the study anticipates that resilience may emerge as a significant predictor of emotional distress and anxiety. The original research proposes that regression analysis could examine whether resilience remains associated with these psychological outcomes after relevant demographic variables are considered.

If supported by empirical data, these findings could have implications for fertility-care practice. Psychological assessment could become a more visible component of fertility treatment rather than being considered separate from medical care.

8. Clinical and Practical Implications

The psychological implications of IVF extend beyond symptom identification. Fertility treatment is a process involving repeated decision-making, uncertainty, medical procedures, financial considerations, interpersonal relationships, and emotional investment.

A psychologically informed fertility-care model could include routine screening for distress and anxiety, identification of individuals requiring additional psychological support, and referral to appropriately trained mental-health professionals.

Resilience-focused psychological interventions may also be explored. Such interventions could potentially include coping-skills training, stress-management strategies, cognitive-behavioural techniques, emotional regulation skills, and strengthening of appropriate social support.

The cultural context is particularly important. Psychological support provided within Indian fertility settings should consider family expectations, stigma, gender-related blame, and interpersonal dynamics rather than applying a purely individualistic model of psychological care.

The study therefore has potential relevance not only for psychologists but also for fertility specialists, counsellors, nurses, and other professionals involved in assisted reproductive care.

9. Limitations and Future Directions

Several limitations should be acknowledged.

First, the proposed sample of 80–120 participants and purposive sampling approach may limit generalisability. The findings may not represent all individuals undergoing IVF across different regions, socioeconomic groups, or healthcare settings.

Second, reliance on self-report questionnaires may introduce response bias, including social desirability and subjective interpretation.

Third, the proposed correlational design cannot establish causal relationships. Even if resilience is significantly associated with lower distress, such an association would not by itself demonstrate that increasing resilience causes distress to decrease.

Fourth, the current design is primarily cross-sectional and therefore may not capture changes in psychological states across successive IVF phases or treatment cycles.

Fifth, the study recognises the need for greater cultural adaptation and validation of psychological measures in Indian IVF populations.

Future research should therefore consider longitudinal designs that follow patients across stimulation, embryo transfer, waiting, and post-result phases. Research involving both partners could also provide a more complete understanding of the relational nature of infertility. Mixed-method research could further capture experiences that may not be fully represented through standardised questionnaires.

The original research additionally identifies the need for intervention trials examining approaches such as psychological screening, cognitive-behavioural interventions, mindfulness, and resilience training within Indian fertility clinics.

10. Conclusion

IVF treatment represents an important medical pathway for individuals experiencing infertility, but its psychological dimensions require equal consideration. Emotional distress and anxiety may arise from the uncertainty, repeated procedures, treatment demands, and social pressures associated with infertility and IVF.

The present study proposes an examination of emotional distress, anxiety, and resilience within a single psychological framework. Its focus on resilience is particularly relevant because it recognises that individuals exposed to similar treatment-related stressors may demonstrate different patterns of psychological adjustment.

The proposed research may contribute to the growing understanding of infertility as both a medical and psychological experience. In the Indian context, consideration of cultural expectations, stigma, family pressure, and social support is especially important.

Ultimately, integrating psychological assessment and appropriate emotional support into fertility services may help move IVF care toward a more holistic model in which reproductive outcomes and psychological well-being are considered together. The research therefore provides a foundation for further empirical investigation into how resilience and psychological support can be incorporated into fertility care.

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