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Mental health issues in women diagnosed with infertility or multiple failed IVF attempts

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Abstract

This article examines the relationship between infertility and mental health in women, highlighting the bidirectional nature of this interaction. Infertility often leads to psychosocial issues such as depression, anxiety, and sexual dysfunction, significantly reducing the quality of life for patients. This paper also presents a literature review to provide a theoretical foundation on the topic, encompassing controlled randomized trials, population cohort studies, and cross-sectional studies. The research covers data on the prevalence of mental disorders, loss of a sense of control, and sexual dysfunction among women experiencing prolonged infertility, particularly after unsuccessful in vitro fertilization (IVF) cycles. The results indicate that 60% of patients suffer from depression, and 75% experience sexual dysfunction as well as anxiety disorders. Moreover, significant differences in mental disorder levels between groups underscore the need to integrate mental health support into infertility treatment protocols to improve patients' overall well-being. These findings support the necessity of providing psychological support for women suffering from infertility and multiple failed IVF attempts.

Keywords: Infertility; Mental health; Depression; Anxiety; Sexual dysfunction; *In vitro* fertilization; Psychosocial issues; Quality of life; Women's health; Psychotherapy

1. Introduction

Infertility is defined as the inability to conceive after 12 months of regular unprotected intercourse. The complex relationship between infertility and mental health issues is bidirectional. On one hand, prolonged infertility can lead to psychosocial issues, as patients often experience feelings of numbness, marginalization, and social stigma [1]. Such emotional reactions can manifest as increased depression, anxiety, tension, guilt, anger, and/or severe stress, significantly impacting sexual health and overall quality of life. Additionally, the financial burden and side effects associated with infertility treatments can further exacerbate these complex psychosocial issues [7].

From a biological perspective, infertility is considered a chronic stressor, leading to the excessive production of stress mediators such as cortisol and norepinephrine. These substances can activate the fear response system, causing anxiety, while simultaneously diminishing the reward response associated with depression [6]. Conversely, previous studies have shown that mental health problems play a crucial role in the pathogenesis of infertility. Dysregulation of stress hormones and the hypothalamic-pituitary-adrenal (HPA) axis, commonly observed in mental disorders, negatively affects fertility-related hormones (e.g., follicle-stimulating hormone, gonadotropin-releasing hormone, prolactin, luteinizing hormone) and elevates the levels of fertility-suppressing hormones, such as cortisol and endogenous opioids [6].

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Unfortunately, sexual dysfunctions and mental disorders, such as depression and anxiety in women, often go unnoticed during infertility treatment. This oversight is frequently attributed to healthcare providers focusing primarily on conception while neglecting other potentially associated symptoms and disorders.

Previous studies have identified differences in depression and anxiety levels among infertility patients [5]. Various hypotheses have been proposed regarding the factors influencing the prevalence and type of mental disorders in infertile couples. However, the literature on this topic remains limited. This study aims to assess the prevalence of mental disorders and sexual dysfunction among women experiencing prolonged infertility. Additionally, the research seeks to evaluate the impact of failed IVF/ICSI cycles on the severity of mental disorders and sexual function in these women.

2. Material and methods

In preparing this material, various studies and scientific articles on the topic were examined. In the work of D. Clifton and E.D. Domar [1], the definition of infertility was provided along with the development of treatment methods aimed at reducing stress and emotional tension related to infertility. In a controlled randomized study by R. Rahimi and S. Hasanpur [2], it was concluded that group counseling is an effective method for improving the mental health of women with unsuccessful IVF cycles. A research team led by L.M. Stewart [3] conducted a population cohort study, which determined that due to the "cohort effect," women who underwent IVF treatment for infertility were less likely to require inpatient mental health treatment than those treated for infertility without IVF.

S.K. Klok's article [4] emphasizes viewing infertility as a couple's issue rather than solely a woman's, as joint treatment proves to be more effective. In a cross-sectional study by M. Abdalla, A.S. Dawood, R. Amer, M. Baklola, I. Hamdi, R. Elkhalla, and S.B. Elbohoty [5], it was found that the majority of infertile women experience depression (58.47%), anxiety disorders (35.17%), and sexual dysfunction (43.64%). In a systematic review by H.A. Montreal and H. Kobo [6], it was shown that women with fertility issues who used gonadotropin displayed a poorer mood profile compared to a group without gonadotropin stimulation. S. Gameiro's article [7] explored the impact of IVF on psychosocial adaptation, finding that 10% of participants exhibited a delayed or chronic response, which predicted mental disorders 11–17 years post-IVF. In the final systematic review analyzed, conducted by K.M. Verhaak and J.M. Smeenk [8], the authors concluded that although failed IVF attempts increase negative emotions in women, subsequent successful attempts bring the level of negative emotions back to baseline.

According to surveys, most couples expect pregnancy to occur soon after discontinuing contraception, as they have previously engaged in sexual activity while avoiding pregnancy. In cases of unsuccessful conception attempts, it is essential first to analyze personal behavior, habits, and lifestyle to identify potential reasons for these unsuccessful attempts. In seeking psychological support, people often turn to friends and family for advice, only to receive common yet typically ineffective reassurances. In this context, it becomes evident that couples suffer not only from physical issues but also from social pressures and expectations.

When advice proves ineffective, many individuals experience feelings of guilt and anger, often subconsciously seeking reasons for infertility in their past, which can subsequently lead to the development of mental health disorders. Women, in particular, are inclined to feel responsible for infertility, which may result in a profound sense of guilt and mental health issues, especially if they have a history of abortions, as shown in Table 1 [3].

Table 1 Psychiatric diagnoses in women who did not become pregnant after infertility treatment and IVF [3]

ICD-9 and ICD-10 codes	Description	Number (% of total)
300, 308-309, F41, F43	Anxiety disorders, adjustment disorders, and reactions to severe stress	154 (37%)
296.2-296.3, 311.0, 311.9, F32-F34	Depressive disorders	123 (30%)
291-292, 303-305, F10-F19	Mental and behavioral disorders due to drug or alcohol use	68 (17%)
295.4, 295.6, 296.0, 296.1, 296.4, 296.5, 297.8, 298, F20-F31	Schizophrenia, bipolar disorders, and psychosis	40 (10%)
293.8, 301, 306-307, F03, F05, F06, F40, F44, F45	Other unrelated categories	26 (6%)

Men, though less frequently, may also experience concerns regarding their health and fertility, adding a layer of stress.

When seeking medical assistance, patients often consult physicians with a specific goal—to determine the causes of infertility to alleviate their guilt or attribute responsibility to uncontrollable factors. If infertility is due to medical reasons, this may intensify feelings of guilt, especially for the partner unable to conceive. In some cases, this can even lead to considerations of divorce to allow the partner to continue the family line with someone else, reflecting a deep-seated internal conflict [4].

3. Results

A cross-sectional study was conducted involving 324 individuals from outpatient obstetrics and gynecology clinics, as well as psychiatric departments [5]. Initially, 324 patients were included, with each group consisting of 162 cases, as shown in Figure 1.

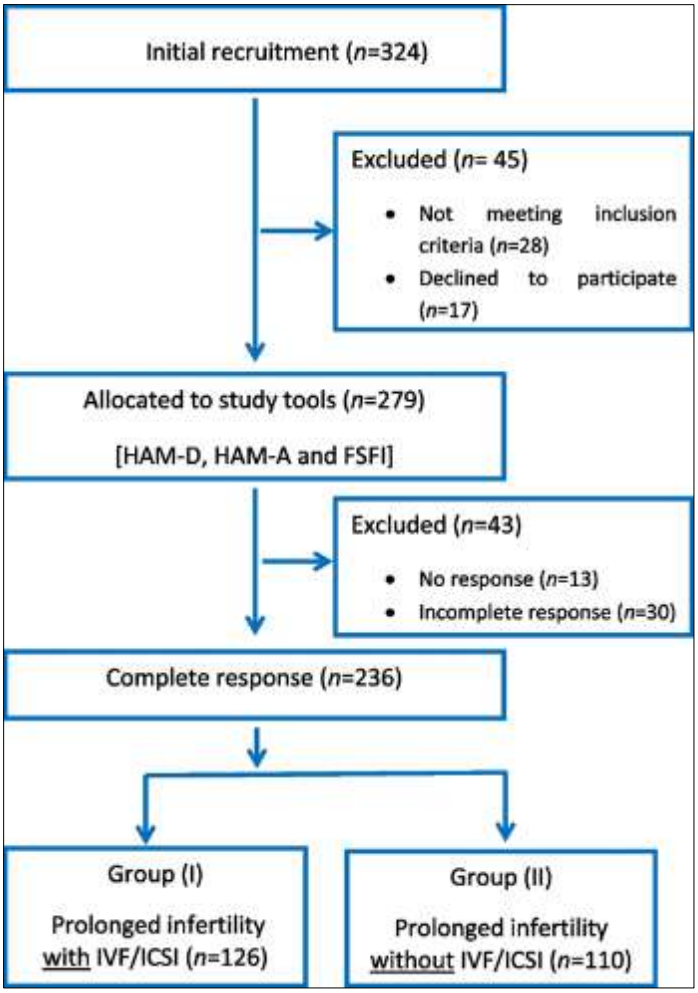

Figure 1 Block diagram of the included study patients [5]

After applying inclusion criteria, some patients were excluded (N = 45) for not meeting inclusion criteria (N = 28) or declining participation (N = 17). The study proceeded with eligible participants (N = 279), with 236 patients ultimately completing the treatment process and being assigned to Group I (N = 126) and Group II (N = 110) [5].

In this study, approximately 60% of patients were found to suffer from depression. Similarly, another study identified depression in 60% of women undergoing in vitro fertilization (IVF) [2]. This finding aligns with previous research reporting mental health issues among infertility patients. The prevalence of anxiety among infertile patients has been reported to range from 36.4% to 80%. In the present study, anxiety was identified in 45% of women with long-term infertility, indicating a lower prevalence than reported in previous studies. The results of this study are presented in Table 2.

Table 2 Results on mental health and sexual dysfunction [5]

Variable Group	Group I (N = 126)	Group II (N = 110)	P-value
Age (years)	34.4 ± 4.7	32.8 ± 5.2	0.005
Duration of infertility (years)	6.7 ± 1.5	4.5 ± 1.6	0.001
HAM-D score	19.1 ± 5.3	13.6 ± 4.8	<0.001
HAM-A score	23.5 ± 6.2	18.8 ± 5.5	<0.001
Total FSFI score	18.1 ± 5.5	25.3 ± 4.8	<0.001

This information indicates that sexual dysfunction was identified in over 75% of participants, consistent with existing literature reporting a prevalence of sexual dysfunction ranging from 60% to 80%.

4. Discussion

The study presented above highlights the high prevalence of mental health issues and sexual dysfunction among women experiencing prolonged infertility, particularly those who have undergone multiple unsuccessful IVF cycles. Significant differences in HAM-D, HAM-A, and FSFI scores between the two groups emphasize the emotional and psychological impact associated with repeated treatment failures.

The data suggest that women in the first group exhibited higher levels of depression and anxiety, which positively correlated with the number of IVF attempts. Additionally, a negative correlation was found between FSFI scores and HAM-D and HAM-A scores, suggesting that as mental health issues intensify, sexual function deteriorates, potentially compounding the difficulties these women face [8].

This issue is exacerbated by the sense of losing control over one's life, which is especially challenging for individuals who otherwise achieve their goals successfully in other areas. Infertility becomes the first major challenge they encounter. This feeling of lost control can lead to attempts to control the treatment process itself, sometimes serving as a coping mechanism against feelings of helplessness.

Anger is another intense emotional reaction experienced by those facing infertility. Such individuals often feel that life has treated them unfairly, especially when they see others, whom they might view as less deserving, experience uncomplicated pregnancies. Anger may be directed both outwardly and towards medical personnel, sometimes straining relationships and diminishing support from close contacts.

In such cases, due to emotional instability, patients may start to distance themselves from those capable of providing psychological support. This creates a closed cycle, where emotional pain and lack of support deepen their suffering. Studies have shown that about half of women regard infertility as one of the most stressful events in their lives, with many experiencing symptoms of depression and anxiety [4].

Gender differences in coping strategies also highlight differing emotional responses to infertility. Women more often assume responsibility and seek support, while men may avoid expressing emotions and distance themselves.

These findings underscore the importance of integrating mental health support into infertility treatment protocols. Attending to psychological well-being is essential, as emotional stress can negatively impact treatment outcomes and the overall quality of life for women navigating the challenges of infertility [7]. Further research is needed to explore effective measures aimed at alleviating the psychological burden associated with infertility.

5. Conclusion

This study demonstrates a significant prevalence of mental health disorders and sexual dysfunction among women experiencing prolonged infertility, particularly those with multiple unsuccessful IVF attempts. The findings underscore the need for a multidisciplinary approach to infertility treatment that includes psychological support to enhance treatment outcomes and the overall well-being of patients.

The emotional impact of infertility is a complex and multifaceted process, encompassing a wide range of emotions—from surprise and guilt to depression and anger. The losses associated with infertility can profoundly affect self-esteem, relationships, and mental health. Understanding these aspects can help couples better cope with this challenging situation and seek the necessary support, while also serving as a basis for further research and the development of more effective psychological interventions for infertile couples.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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