

PSYCHOLOGICAL ISSUES OF FEMALES RELATED TO INFERTILITY

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Abstract: Infertility is a deeply distressing condition that affects millions of women worldwide, often accompanied by profound psychological and emotional challenges. This review explores the psychological impact of infertility on women, including the prevalence of anxiety, depression, and social isolation. Studies show that up to 50% of women undergoing infertility treatments experience clinical levels of anxiety, and 25% meet the criteria for major depression. The social stigma, marital strain, and cultural pressures surrounding motherhood exacerbate these feelings, leaving women to grapple with guilt, inadequacy, and failure. The review also investigates the role of psychological stress as both a consequence and potential contributor to infertility, examining the concept of psychogenic infertility and its related factors. Moreover, the paper highlights the psychosomatic manifestations of stress, such as sleep disturbances and chronic pain, which further compound the condition. The integration of psychological therapies, such as cognitive-behavioural therapy (CBT) and mindfulness-based stress reduction (MBSR), alongside medical treatments, is identified as crucial for addressing these psychological burdens. This holistic approach to infertility treatment can improve both psychological well-being and fertility outcomes.

Keywords: female infertility, psychological consequences, social expectation, psychological stress.

Introduction

Infertility is a deeply distressing condition that affects a significant portion of the global population, especially women. The inability to conceive, whether temporarily or permanently, can result in profound emotional and psychological stress. Psychological distress is often heightened due to cultural, social, and personal expectations surrounding motherhood. Given the growing prevalence of infertility and its widespread psychological impact, it is essential to explore and understand the psychological repercussions associated with infertility and the role of mental health in both its causes and consequences.

As per the World Health Organization (WHO, 2023), infertility has emerged as a global health issue, affecting approximately 10-15% of reproductive-aged couples globally.

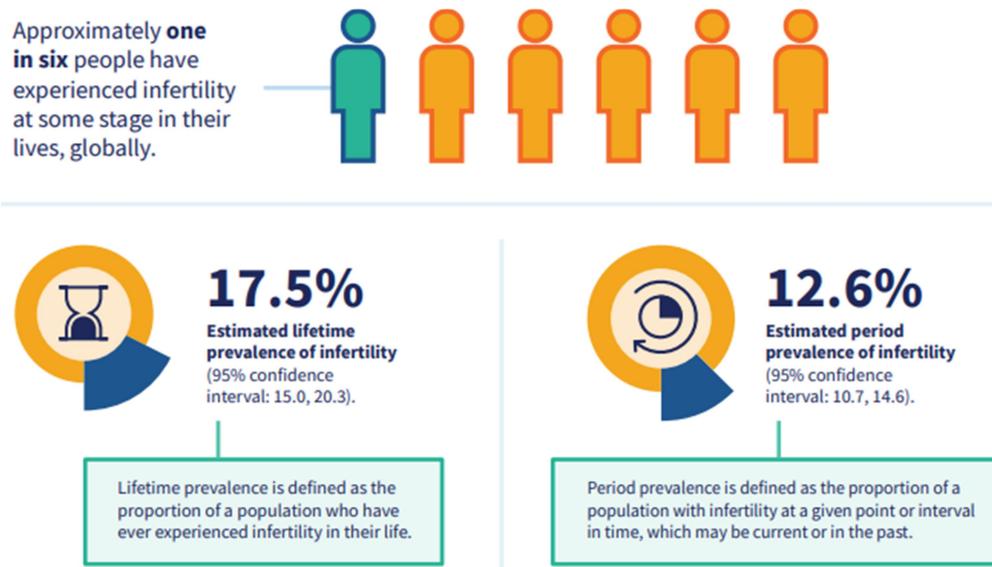


Figure 1 Infographics of WHO on infertility

Source: *Infertility prevalence estimates, 1990–2021. World Health Organization (2023)*

While the medical aspects of infertility are widely researched, its psychological dimensions require more comprehensive attention. This review will discuss both the psychological consequences of infertility on females and examine if psychological stress may also serve as a causative factor for infertility. It will also highlight potential therapeutic avenues aimed at addressing these interconnected issues.

Infertility: Definitions and Global Data

Infertility is clinically defined as the inability to conceive after 12 months or more of regular unprotected intercourse (Obeagu et al., 2023). It can be categorized into two forms: primary infertility (the inability to achieve a pregnancy) and secondary infertility (the inability to conceive after a previous pregnancy).

According to the WHO, between 48 million couples and 186 million individuals live with infertility worldwide (WHO, 2023). The prevalence of infertility varies regionally, influenced by factors such as healthcare access, cultural practices, and environmental exposure. In high-income countries, infertility treatments like in vitro fertilization (IVF) are more accessible, while in low-income regions, infertility often remains untreated, exacerbating its psychological toll.

Total fertility rate (TFR) depicts the average number of children who would be born alive to a woman during her lifetime, if the age-specific fertility rates of a given year remained constant during her childbearing years (Figure 1). It is computed as the sum of fertility rates by age across all childbearing ages in a given year. It has to be noted that infertility disproportionately affects women, especially in societies where female identity is closely tied to motherhood (Hynie & Burns, 2006). Social stigma, marital strain, and cultural pressures contribute to the heightened psychological distress experienced by women facing infertility.

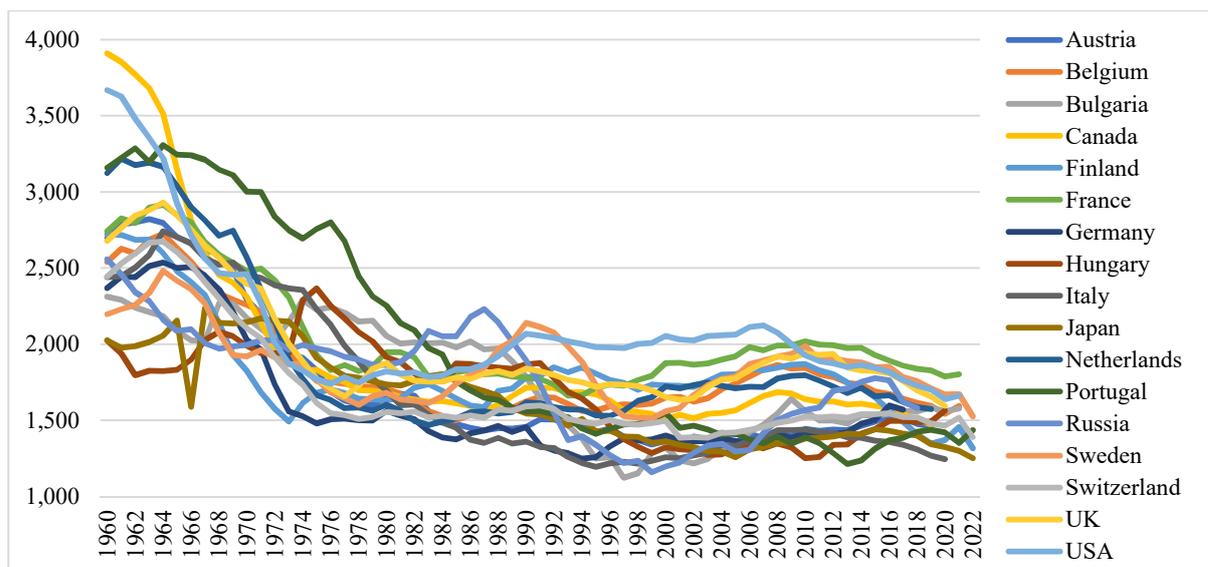


Figure 2 Total fertility rate in the past 60 years by countries

Source: Human Fertility Database Max Planck Institute for Demographic Research and Vienna Institute of Demography (2023)

Psychological Effects of Infertility

Infertility can cause a cascade of psychological issues in women, ranging from stress, anxiety, and depression to psychosomatic manifestations. Research highlights that up to 50% of women undergoing infertility treatment experience clinical levels of anxiety, and nearly 25% meet the criteria for major depression (Szkodziak et al., 2020).

Women often experience overwhelming feelings of inadequacy, guilt, and failure as they navigate infertility. These feelings may stem from societal and cultural pressures or a personal desire for motherhood (Simionescu et al., 2021). A study conducted in the UK found that 42% of women with infertility showed moderate to severe symptoms of depression, while 30% reported clinically significant anxiety (Kiani et al., 2021). This mental burden may be exacerbated by repetitive cycles of treatment failure, further amplifying stress levels. Infertility not only affects women psychologically but also impacts social relationships. In many cultures, women bear the brunt of blame for infertility, leading to stigmatization and social isolation (Bala et al., 2021). Marital relationships are also strained, as infertility introduces significant emotional and financial stress. Research indicates that couples experiencing infertility are three times more likely to divorce (Tabassum, 2023).

Recent studies suggest that the psychological impact of infertility is underestimated (Hanson et al., 2017). A meta-analysis conducted in 2022 estimated that around 60% of women undergoing IVF treatments report high levels of stress and anxiety (Gabnay-Nagy et al., 2020). This growing body of research emphasizes the need for integrated psychological support in infertility treatment protocols.

While it is already proved by many theorists that infertility has a heavy impact on psychological wellbeing, there is still no consensus on what factors to assess in regard to

the issue at hand. As depicted by Table 1, various authors explore the phenomenon from various angles.

Author	Description	Country	Cases
Musa et al. (2014)	Wives experienced significantly higher levels of depression, stress, and anxiety compared to their husbands.	Malaysia	246
Belevska (2015)	Psycho-education helped reduce anxiety and stress, though no significant differences in depression scores were observed between groups.	Macedonia	64
Dashti et al. (2016)	Women with anxiety and depression were more likely to experience sexual dysfunction, including orgasm issues, especially when stress was present.	Malaysia	16
Chi et al. (2016)	Infertile women showed significantly higher scores for anxiety, depression, and stress compared to fertile women.	Korea	206
Aslzaker et al. (2016)	Predictors like anxiety, depression, and stress, along with quality of life and infertility stress, accounted for 25% of the success in IVF/ICSI outcomes.	Iran	79
Yusuf (2016)	Infertile women exhibited significantly higher levels of depression, stress, and anxiety compared to the control group.	Pakistan	200
Naz et al. (2020)	A significant inverse relationship was found between stress, depression, anxiety, and each dimension of the DASS scale.	Iran	120
Rahimi et al. (2021)	Post-intervention therapy significantly reduced depression and stress compared to the control group.	Iran	60
Koumparou et al. (2021)	Stress levels showed significant reductions between intervention and control groups in all measured scales.	Greece	144
Lee et al. (2022)	Infertile women undergoing group therapy reported lower depression and anxiety, with higher IVF success rates in those with pre-treatment counselling.	South Korea	170
Martínez et al. (2022)	Stress-related infertility treatments using cognitive behavioural therapy (CBT significantly improved fertility outcomes over 6 months).	Spain	112
Huang et al. (2022)	Psychological stress negatively impacted IVF outcomes, with stress and anxiety scores significantly correlated with IVF failure rates.	China	300
Singh et al. (2023)	Women with polycystic ovary syndrome (PCOS showed higher anxiety and depression levels, which worsened fertility outcomes.	India	150
Smith et al. (2023)	Anxiety and depression in women undergoing ART treatment were associated with lower success rates, with early interventions proving beneficial.	USA	180

Table 1 Psychological effects of infertility among females

Source: Own compilation

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Psychological stress related to infertility can also manifest physically, as indicated in Table 2. Psychosomatic symptoms such as headaches, digestive issues, sleep disturbances, and chronic pain are commonly reported by women dealing with infertility (Kemeter, 1988). Additionally, the chronic stress associated with infertility may compromise immune function, potentially hindering the effectiveness of infertility treatments (Miller et al., 2017).

Study	Study-specific population	Findings in female subjects	Country	Cases
Reigstad et al. (2015)	8037 women with breast cancer / 138 (1.7%) had previous Assisted Reproductive Technology (ART)	Women exposed to ART had an elevated risk of breast cancer	Norway	8037
Lundberg et al. (2016)	Patient self-reported history of infertility	Infertile women had 1.53 cm ³ higher absolute dense volume of breasts (95% CI 0.7–2.35)	Sweden	8963
Luke et al. (2022)	Women undergoing ART	ART induced no increase in breast cancer rates but highlighted other somatic concerns like weight gain and hormone dysregulation.	USA	113,226
Smith et al. (2023)	Women with infertility, especially those with Polycystic Ovary Syndrome (PCOS)	Women with infertility showed higher rates of somatic symptoms, including joint pain and gastrointestinal discomfort, potentially linked to chronic inflammation.	USA	1,254

Table 2 International literature on somatic consequences of infertility

Source: Own compilation

Infertility Caused by Psychological and Stress-Related Issues

There is emerging evidence to suggest that psychological stress is not only a result but can also contribute to infertility. Psychologically conditioned infertility, also known as functional or psychogenic infertility, is caused by psychological factors and affects between 5% and 50% of couples undergoing fertility treatments, according to Skrzypczak et al. (1997). Various elements influence this type of infertility, including personality traits, family relationships, and sexual disorders. For instance, issues such as frigidity, pain during intercourse, and lack of orgasm can impact a couple's ability to conceive. However, it is important to note that lack of orgasm is not a direct cause of infertility, though it can contribute to changes in sexual behaviour (Semm, 1994)

Specific psychological causes of infertility include feelings of guilt, intense pressure to have a child, and fears related to labour. Vaginismus, a condition triggered by traumatic sexual experiences or impotence of the partner, also plays a role (Podolska & Bidzan 2011). Misconceptions about sex and childbirth can create psychological and physical stress, further complicating fertility issues. Additionally, an excessive need for a child can lead to significant psychological stress, while deeply held neuroses and beliefs about sex and childbirth can further impact fertility (Seibel & Taymor, 1982).

From a psychoanalytical perspective, infertility is sometimes linked to subconscious defence mechanisms and repressed conflicts (Harrison, 1986). In men, psychoanalysts like Freud have suggested that sexual dysfunctions, such as impotence, are often related to neurotic tendencies and unresolved childhood issues (Kainz, 2001). The latest reports, including those by Weiss et al., highlight that higher degrees of neuroticism and traits such as passive-aggressive personality, compulsivity, and psychosomatic symptoms are observed in infertile men (Weis et al., 2004).

Meller et al. indicated that many women with depression who are treated for infertility had experienced depression prior to their infertility treatment (Meller et al., 2002). While it is challenging to determine whether depression is a primary cause of infertility, it can lead to conditions like hyperprolactinemia, which may hinder pregnancy (Demyttenaere, 1989). Therefore, early intervention with psychotherapy and pharmacological treatments is crucial for managing depression in individuals undergoing infertility treatment.

Chronic stress has been shown to interfere with reproductive hormones such as gonadotropin-releasing hormone (GnRH), which can disrupt ovulation and menstrual cycles (Aimagambetova et al., 2020). Cortisol, a stress hormone, also has an adverse effect on the hypothalamic-pituitary-adrenal axis, potentially leading to anovulation and other fertility problems (Toufexis et al., 2014). A longitudinal study in 2021 found that women with high levels of stress biomarkers (e.g., cortisol) were 29% less likely to conceive (Ramiya et al., 2023). Furthermore, women who reported higher levels of perceived stress showed a higher risk of ovulatory infertility (Szkodziak et al., 2020). These findings underscore the potential link between stress, psychological well-being, and reproductive function (Swanson & Braverman, 2021).

Treatment for Infertility and Infertility-Related Psychological Issues

Medical treatments for infertility primarily involve assisted reproductive technologies (ART) such as IVF, intrauterine insemination (IUI), and hormonal therapy (Milazzo et al., 2016). These treatments are often physically and emotionally demanding, requiring robust psychological support systems for patients to cope with the associated stress and uncertainty.

Psychological interventions for women dealing with infertility are gaining recognition as a vital component of care. Cognitive-behavioural therapy (CBT), mindfulness-based stress reduction (MBSR), and supportive counselling are commonly used approaches aimed at alleviating anxiety, depression, and emotional distress (Marashi

et al., 2021). Studies show that CBT and MBSR significantly improve psychological outcomes for women undergoing fertility treatments (Hosseini et al., 2020).

Incorporating mind-body interventions such as yoga and acupuncture has also proven beneficial for reducing infertility-related stress (Gaitsch et al.2020). have demonstrated that women who participated in mind-body programs reported significantly lower levels of psychological distress and higher pregnancy success rates compared to control groups.

Given the interaction between psychological and physical symptoms, psychosomatic therapies (e.g., biofeedback, relaxation techniques) have also been explored as adjunct treatments. These therapies aim to reduce stress levels and improve overall well-being, potentially enhancing fertility outcomes (Rudolf, 2018).

Summary and Conclusions

Infertility is a multifaceted issue with profound psychological consequences for women. The inability to conceive often leads to anxiety, depression, and social isolation, and these psychological challenges are further exacerbated by the medical and financial pressures of infertility treatments. Emerging research underscores the prevalence of these psychological burdens, with stress even playing a role in causing or exacerbating infertility.

Interventions targeting both the medical and psychological dimensions of infertility are critical for improving patient outcomes. Psychological therapies, including CBT, mindfulness, and mind-body interventions, are essential tools to help women cope with infertility-related distress.

In conclusion, infertility is not solely a medical condition but also a psychological one, requiring holistic treatment approaches that integrate mental health care. Expanding research into the psychological aspects of infertility and offering comprehensive psychological support can improve the well-being of women facing this challenge.

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