International Journal of Reproduction, Contraception, Obstetrics and Gynecology
*Haider F et al. Int J Reprod Contracept Obstet Gynecol. 2026 Jul;15(7):2628-2634*
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20262114

**Original Research Article**

# Fertility-related quality of life among women attending an infertility clinic in North India: a cross-sectional study

**Falak Haider*, Reema Kumari**

Department of Community Medicine and Public Health, King George's Medical University, Lucknow, Uttar Pradesh, India

**Received:** 13 May 2026
**Accepted:** 11 June 2026

***Correspondence:**
Dr. Falak Haider,
E-mail: falak9936@gmail.com



## ABSTRACT

**Background:** Infertility is a significant reproductive health problem that adversely affects the psychological and social well-being of women. Fertility-related quality of life is increasingly recognized as an important component of infertility care. However, limited data are available from North India regarding the quality of life among women seeking infertility treatment. The present study aimed to assess fertility-related quality of life among women attending an infertility clinic at a tertiary care centre in North India.
**Methods:** A hospital-based cross-sectional study was conducted among 145 women attending infertility clinics at King George's Medical University, Lucknow. Women aged 18–40 years diagnosed with primary infertility were enrolled using convenience sampling. Data were collected using a pre-tested semi-structured questionnaire. Fertility-related quality of life was assessed using the validated fertility quality of life (FertiQoL) scale comprising emotional, mind-body, relational, and social domains. Data were analysed using statistical package for the social sciences (SPSS) version 24. Descriptive and inferential statistical analyses were performed, and $p<0.05$ was considered statistically significant.
**Results:** The majority of participants were aged 26–30 years (50.3%) and had been undergoing infertility treatment for more than three years (55.1%). Poor quality of life was observed among 62.8% participants, while only 3.4% reported good quality of life. The emotional (63.4%), social (62.1%), and mind-body (60.7%) domains were the most adversely affected components of the FertiQoL scale. Poor quality of life was more common among women with prolonged treatment duration, inadequate emotional support, and higher treatment-related stress.
**Conclusion:** Infertility has a substantial negative impact on FertiQoL, particularly in emotional and psychosocial domains. Integration of psychological counselling and supportive interventions within infertility care services may help improve the overall well-being of affected women.

**Keywords:** Infertility, Quality of life, FertiQoL, Women, Psychological well-being, Infertility treatment

## INTRODUCTION

Infertility is an important reproductive health problem affecting millions of couples worldwide. The World Health Organization defines infertility as the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. It may be classified as primary infertility, where conception has never occurred, or secondary infertility, where conception has occurred previously but subsequent pregnancy is not achieved. According to recent estimates, infertility affects nearly one in six individuals globally during their reproductive years, making it a major public health concern.[1]

Apart from its biological implications, infertility has profound psychological, emotional, and social consequences, particularly among women. In many developing countries, including India, childbearing is strongly associated with femininity, marital stability, family expectations, and social acceptance. As a result, women experiencing infertility often face social stigma,

family pressure, emotional distress, and reduced self-esteem. Several studies have reported significantly higher levels of anxiety, depression, stress, and psychological morbidity among infertile women compared to fertile women.[2,3]

Hospital-based evidence from India has further highlighted the psychosocial burden of infertility. Dadhwal et al observed that a considerable proportion of infertile women undergoing treatment experienced symptoms of anxiety and depression.[5] Similarly, Kamboj et al reported higher levels of stress, anxiety, and common mental disorders among infertile women in North India, suggesting that infertility acts as a major life stressor affecting mental health and overall well-being.[4]

Infertility also negatively affects fertility-related quality of life (FertiQoL), particularly emotional, social, relational, and mind-body domains. The FertiQoL questionnaire is a validated tool commonly used to assess infertility-specific quality of life.[7] Previous studies have demonstrated impaired FertiQoL scores among women undergoing infertility treatment, with poorer quality of life being associated with prolonged treatment duration, psychological distress, and inadequate social support.[5,6]

Despite increasing recognition of the psychosocial impact of infertility, limited clinic-based research from tertiary care centres in North India has comprehensively assessed fertility-related quality of life among infertile women. Therefore, the present study was conducted to assess quality of life among women attending an infertility clinic at a tertiary care hospital in Lucknow, North India.

## METHODS

This hospital-based observational cross-sectional study was conducted among women attending infertility clinics in the Department of Obstetrics and Gynaecology at King George's Medical University. The study aimed to assess the quality of life among women seeking treatment for primary infertility. Women aged 18–40 years diagnosed with primary infertility and attending the infertility clinic for evaluation or treatment were included in the study. Women with secondary infertility, previously diagnosed psychiatric illness, severe chronic medical illness affecting mental health, and those unwilling to participate were excluded.

The sample size was calculated using the prevalence of depression among infertile women reported in previous Indian studies, applying the formula, with p=21%, q=79%, Z=1.96 at 95% confidence interval, and allowable error of 7%, yielding a final sample size of 145 participants.

$$n = (Z^2pq)/d^2$$

Eligible participants were recruited using convenience sampling during the study period.

Data were collected using a pre-tested semi-structured questionnaire comprising sociodemographic and clinical variables. Fertility-related quality of life was assessed using the validated FertiQoL questionnaire, which evaluates emotional, mind-body, relational, and social domains. Information regarding duration of infertility, treatment history, educational status, occupation, socioeconomic status, and family support was also obtained. After obtaining written informed consent, participants were interviewed individually in a private setting to ensure confidentiality and minimise response bias. Women experiencing significant emotional distress during the interview were counselled and referred for psychological support when required.

The collected data were entered into Microsoft Excel and analysed using statistical package for the social sciences (SPSS) version 24. Descriptive statistics including mean, standard deviation, frequency, and percentage were used to summarise the data. A $p<0.05$ was considered statistically significant. Ethical approval for the study was obtained from the Institutional Ethics Committee of King George's Medical University, and confidentiality and anonymity of participants were strictly maintained throughout the study.

## RESULTS

Table 1 shows that most participants were aged 26–30 years, married early, and belonged to Hindu religion. The majority were educated up to graduate level, unemployed, urban residents, and lived in nuclear families. Most participants belonged to upper and upper-middle socio-economic classes according to modified B.G. Prasad classification.

Table 2 shows that most participants had prolonged infertility treatment, commonly using oral medications, with many reporting family histories of infertility. The majority self-financed treatment and travelled considerable distances for care, indicating substantial treatment burden and financial stress among infertile women.

Table 3 demonstrates that the majority of participants experienced poor quality of life in the emotional, social, and mind-body domains of the FertiQoL scale, indicating the substantial psychosocial burden associated with infertility. The emotional domain assesses feelings such as sadness, anxiety, frustration, and emotional distress related to infertility. The mind-body domain evaluates the impact of infertility on physical health, cognitive functioning, daily activities, and overall energy levels, while the social domain explores social interactions, societal pressure, stigma, and participation in family and community life. In contrast, the relational domain, which assesses marital relationship, communication, emotional support, and sexual relationship with the partner, showed comparatively better scores, suggesting supportive spousal

relationships among many participants despite infertility-related stress.

Table 4 presents the distribution of participants according to their overall quality of life scores measured using the FertiQoL scale. The findings revealed that the majority of participants (62.8%) had poor quality of life, whereas 33.8% reported moderate quality of life, and only 3.4% demonstrated good quality of life. These results indicate that infertility and its treatment have a considerable negative impact on the overall well-being of women attending infertility clinics. The predominance of poor quality-of-life scores reflects the significant emotional, psychological, and social challenges experienced by infertile women and underscores the importance of integrating psychosocial support and counselling services into infertility care.

**Table 1: Socio-demographic characteristics of participants (n=145).**

| Variables | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| **Age (years)** | 18-25 | 27 | 18.6 |
| | 26-30 | 73 | 50.3 |
| | >30 | 43 | 31.1 |
| **Age at marriage (years)** | 18-25 | 111 | 76.6 |
| | 26-30 | 30 | 20.7 |
| | >30 | 4 | 2.8 |
| **Religion** | Hindu | 85 | 58.6 |
| | Muslim | 45 | 31.1 |
| | Others | 15 | 10.3 |
| **Education** | Illiterate | 12 | 8.3 |
| | Primary school | 8 | 5.5 |
| | Middle school | 6 | 4.1 |
| | High school | 26 | 17.9 |
| | Intermediate | 42 | 29.0 |
| | Graduate and above | 51 | 35.1 |
| **Employment status** | Employed | 34 | 23.4 |
| | Self-employed | 15 | 10.3 |
| | Unemployed | 96 | 66.2 |
| **Place of residence** | Urban | 85 | 58.6 |
| | Rural | 60 | 41.4 |
| **Family type** | Nuclear | 90 | 62.1 |
| | Joint | 55 | 37.9 |
| **Socio-economic status (modified B. G. Prasad classification 2025)** | Upper | 73 | 50.3 |
| | Upper middle | 39 | 26.9 |
| | Middle | 17 | 11.7 |
| | Lower middle | 11 | 7.6 |
| | Lower | 5 | 3.4 |

**Table 2: Personal and treatment history of participants (n=145).**

| Variables | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| **Any current co-morbidity in participants** | None | 72 | 49.7 |
| | Hypertension | 20 | 13.8 |
| | Diabetes | 11 | 7.6 |
| | Thyroid disorder | 42 | 28.9 |
| **Substance use in participants** | None | 132 | 91.1 |
| | Smoking | 4 | 2.7 |
| | Tobacco chewing | 9 | 6.2 |
| **Family history of infertility of the participant** | Yes | 104 | 71.7 |
| | No | 41 | 28.3 |
| **Duration of treatment taken till now (years)** | <1 | 31 | 21.4 |
| | 1-3 | 34 | 23.4 |
| | 3-5 | 46 | 31.7 |
| | >5 | 34 | 23.4 |

Continued.

| Variables | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| **Type of treatment currently on** | Medical (oral medicines) | 91 | 62.8 |
| | IUI | 37 | 25.5 |
| | IVF | 17 | 11.7 |
| **Number of medical treatment cycle attempts (n=91)** | ≤ 1 | 13 | 14.4 |
| | 2-3 | 54 | 59.3 |
| | >4 | 24 | 26.3 |
| **Number of interventional treatment cycle attempts (n=54)** | 1 | 28 | 51.8 |
| | 2-3 | 21 | 38.8 |
| | >4 | 5 | 9.4 |
| **Time taken to reach the current hospital** | <1 | 31 | 21.3 |
| | 1-3 | 55 | 37.9 |
| | 4-6 | 33 | 22.7 |
| | >7 | 27 | 18.6 |
| **Means of financing treatment** | Self | 96 | 66.2 |
| | Family/relative (other than spouse) | 33 | 22.7 |
| | Loan | 12 | 8.9 |
| | Others | 3 | 2.1 |

**Table 3: Domain-wise categorisation of quality of life (FertiQoL scale) (n=145).**

| Domain | Poor, N (%) (<60) | Moderate, N (%) (60–79) | Good, N (%) (80–100) |
|---|---|---|---|
| **Emotional** | 92 (63.4) | 43 (29.7) | 10 (6.9) |
| **Mind-body** | 88 (60.7) | 45 (31.0) | 12 (8.3) |
| **Relational** | 61 (42.1) | 67 (46.2) | 17 (11.7) |
| **Social** | 90 (62.1) | 41 (28.3) | 14 (9.6) |

**Table 4: Overall quality of life according to the FertiQoL scale (n=145).**

| Quality of life category | Frequency (N) | Percentage (%) |
|---|---|---|
| **Poor QoL** | 91 | 62.8 |
| **Moderate QoL** | 49 | 33.8 |
| **Good QoL** | 5 | 3.4 |
| **Total** | 145 | 100 |

## DISCUSSION

The present study assessed fertility-related quality of life among women attending an infertility clinic at a tertiary care hospital in North India. The findings demonstrated that infertility had a substantial negative impact on the quality of life of participants, particularly in the emotional, social, and mind-body domains of the FertiQoL scale. The study also highlighted the role of prolonged treatment duration, psychosocial stress, and inadequate emotional support in adversely affecting the overall well-being of infertile women.

In the present study, the majority of participants belonged to the 26–30 years age group. Similar observations have been reported in previous Indian and international studies where women in their late twenties and early thirties constituted the largest proportion of infertility clinic attendees.[7] This age group is generally considered the socially expected period for childbearing in Indian society, and failure to conceive during these years may lead to increased emotional stress, family pressure, and fear regarding future fertility. Women in this age group may therefore experience heightened anxiety and psychological distress while undergoing infertility treatment.

The present study further observed that a large proportion of participants were unemployed and predominantly from urban areas. Although urban residence improves accessibility to infertility clinics and assisted reproductive technologies, infertility-related emotional burden remains considerable despite access to healthcare services. Financial dependency, unemployment, and social expectations regarding motherhood may further contribute to feelings of helplessness and reduced self-worth among infertile women. Similar findings were reported by Hasan et al and Dadhwal et al, who noted that psychosocial stress and emotional disturbances were common among infertile women irrespective of treatment availability.[8,9]

A considerable proportion of women in the present study had been undergoing infertility treatment for prolonged periods, with many receiving treatment for more than three years. Long duration of infertility treatment may lead to

emotional exhaustion, frustration, hopelessness, treatment fatigue, and financial burden. Repeated investigations, uncertainty regarding treatment outcomes, and unsuccessful treatment cycles may further intensify psychological distress. Rashidi et al similarly reported that prolonged infertility treatment was associated with poorer health-related quality of life and greater emotional distress among infertile couples undergoing IVF or ICSI treatment. These findings suggest that duration of infertility treatment is an important factor influencing psychological well-being and fertility-related quality of life.[10]

Among the various FertiQoL domains assessed in the present study, the emotional domain was the most adversely affected. A majority of participants reported poor emotional quality of life, indicating that infertility significantly affects emotional well-being and may result in feelings of sadness, frustration, guilt, anxiety, and emotional exhaustion. In many women, inability to conceive may also create feelings of inadequacy and fear of social judgement. Comparable findings were observed by Chi et al, who reported significantly impaired emotional functioning and higher psychological distress among infertile women compared to fertile controls.[11] Similarly, recent studies have demonstrated that infertility-related stress is strongly associated with depressive symptoms, anxiety, and poor emotional adjustment among women undergoing infertility treatment.[12]

The social domain of quality of life was also markedly impaired in the present study. In the Indian sociocultural context, parenthood is often regarded as an essential component of womanhood, marital fulfilment, and social acceptance. Consequently, women experiencing infertility may face stigma, family pressure, insensitive comments, and reduced participation in social gatherings.

Many women may avoid social interactions because of fear of criticism or repeated questioning regarding childbearing. Greil et al also highlighted that infertility frequently leads to social isolation, emotional suffering, and reduced self-esteem because of strong societal expectations regarding motherhood. These findings emphasise the profound social burden associated with infertility in developing countries such as India.[13]

The present study also demonstrated poor scores in the mind-body domain, suggesting that infertility adversely affects both physical and psychological health perception. Persistent stress related to infertility and repeated treatment procedures may manifest as fatigue, sleep disturbances, reduced concentration, irritability, somatic complaints, and anxiety regarding treatment outcomes.

Infertility treatment itself can be physically and emotionally demanding, especially when treatment cycles are prolonged or unsuccessful. Similar findings were reported by Ni et al, who observed significantly lower emotional and mind-body FertiQoL scores among women undergoing repeated infertility treatment cycles due to persistent treatment-related stress and uncertainty.[14]

In contrast to emotional and social domains, the relational domain demonstrated comparatively better quality-of-life scores in the present study. This finding may indicate that supportive marital relationships helped many women cope with infertility-related stress. Emotional support from spouses may reduce feelings of isolation and improve coping ability during infertility treatment. Chachamovich et al similarly observed that although infertility adversely affected emotional and social functioning, supportive partner relationships partially buffered the psychological impact of infertility. This highlights the importance of partner involvement and family support in infertility management.[15]

Overall, the present study demonstrated that nearly two-thirds of participants had poor overall fertility-related quality of life. These findings are consistent with the systematic review conducted by Mousavi et al, which concluded that infertility significantly impairs emotional, social, and relational quality-of-life domains among infertile women and couples. Likewise, a recent Indian study by Pathak et al reported moderate-to-severe impairment in fertility-related quality of life, particularly in emotional and mind-body domains among women experiencing delayed conception. The consistency of findings across different studies suggests that infertility remains a major psychosocial health issue affecting women globally.[5]

The findings of the present study emphasise the importance of integrating psychological counselling and emotional support services into infertility management programs. Infertility care should not be limited solely to medical treatment but should also address psychosocial well-being, coping mechanisms, stress management, and emotional resilience among affected women. Early identification of psychological distress and timely supportive interventions may improve treatment adherence, emotional well-being, and overall quality of life. Counselling services, patient support groups, and partner involvement may help women cope more effectively with infertility-related stress and improve their treatment experience.[16,17]

### *Strengths*

The present study has several strengths that enhance its clinical and public health relevance. It comprehensively evaluated fertility-related quality of life and psychological well-being among women attending infertility clinics, thereby providing important insight into the psychosocial impact of infertility. The use of standardized and validated assessment tools improved the reliability of the findings. Additionally, the study addressed an important yet underexplored aspect of reproductive health in the Indian context, where infertility is often associated with significant emotional and social burden. By generating

context-specific evidence from a tertiary care setting in North India, the study highlights the need for integrating psychological counselling and supportive care into routine infertility management. The findings may also contribute to future research and the development of holistic infertility care strategies.

### *Limitations*

The present study has certain limitations. Being a cross-sectional study, causal relationships between infertility and quality-of-life outcomes could not be established. The study was conducted among women attending selected infertility clinics in Lucknow, which may limit the generalizability of the findings to other settings and populations. In addition, the use of self-reported questionnaires may have introduced response bias due to social desirability and stigma associated with infertility. The study also included only women and did not assess the psychosocial impact on male partners. Furthermore, certain clinical factors related to infertility and treatment characteristics were not explored in detail.

## CONCLUSION

The present study assessed FertiQoL among women seeking infertility treatment at a tertiary care centre in North India and explored the influence of socio-demographic and treatment-related factors on their well-being. The findings revealed that infertility significantly affects emotional, social, and psychological health, with many women experiencing stress, anxiety, low self-esteem, social isolation, and reduced life satisfaction. Poor quality of life was particularly observed in emotional, social, and mind-body domains. Increased psychological distress was associated with poorer quality-of-life scores, highlighting the strong relationship between mental health and infertility. The study emphasises that infertility care should adopt a holistic approach by integrating psychological counselling, emotional support, stress management, and patient-centred care alongside medical treatment to improve overall well-being and coping among infertile women.

*Funding: No funding sources*
*Conflict of interest: None declared*
*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Haider F, Kumari R. Fertility-related quality of life among women attending an infertility clinic in North India: a cross-sectional study. Int J Reprod Contracept Obstet Gynecol 2026;15:2628-34.