

INFERTILITY-RELATED QUALITY OF LIFE AND THE FERTIQOL INSTRUMENT : A NARRATIVE REVIEW

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ABSTRACT

Infertility is a widespread global health condition with consequences that extend far beyond reproductive impairment, affecting emotional well-being, interpersonal relationships, social functioning, and overall quality of life. Conventional biomedical indicators, such as pregnancy and live-birth rates, provide an incomplete representation of treatment success and fail to capture the lived experience of individuals undergoing fertility care. A narrative literature search was conducted in PubMed, Scopus, and Google Scholar for articles published between 2010 and 2025 using keywords including 'FertiQoL', 'fertility quality of life', and 'infertility patient-reported outcomes'. This review was not conducted as a systematic review. This mini review examines the Fertility Quality of Life (FertiQoL) instrument, a standardised, internationally developed patient-reported outcome measure designed to assess the multidimensional impact of infertility. FertiQoL comprises 36 items organised into a Core module (Emotional, Mind-Body, Relational, and social domains) and a Treatment module (Treatment Environment and Treatment Tolerability), enabling distinction between infertility-related burden and treatment-specific effects. Evidence from psychometric validation studies and cross-cultural applications demonstrates good reliability, construct validity, and sensitivity across diverse populations and treatment settings. The reviewed literature highlights the clinical, research, and patient-level utility of FertiQoL, including identification of psychosocial risk, enhancement of clinician-patient communication, evaluation of interventions beyond biological outcomes, and support for patient self-reflection and empowerment. Despite its widespread use, gaps remain in understanding longitudinal changes in quality of life, the impact of partner dynamics, and applicability in diverse healthcare settings. Future research should explore these areas, including longitudinal studies, culturally adapted interventions, and integration of FertiQoL into routine clinical decision-making to further advance patient-centered infertility care.

Keywords:

Infertility, FertiQoL, quality of life, fertility care

INTRODUCTION

Infertility as a Public Health and Quality of Life Challenge

Infertility is a common and increasingly recognized global health condition that affects millions of individuals and couples worldwide. The World Health Organization (WHO) classifies infertility as a disease of the reproductive system, defined clinically as the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse (WHO, 2025). Beyond its biological definition, infertility exerts wide-ranging effects on physical and psychological well-being, with consistently reported associations with stress, anxiety, depressive symptoms, and reduced self-esteem (Sharma & Shrivastava, 2022). Recent epidemiological trends suggest a rising prevalence of infertility, attributed to intersecting factors such as environmental exposures, lifestyle changes, and delayed childbearing, reinforcing its status as a growing public health concern (Legese et al., 2023).

The consequences of infertility extend far beyond the inability to conceive and often constitute a major life crisis. Individuals undergoing fertility evaluation and treatment frequently experience prolonged diagnostic pathways, invasive procedures, and repeated cycles of uncertainty and loss. These demands are commonly accompanied by psychological distress, relationship strain, social withdrawal, and substantial financial burden. Despite this complexity, success in assisted reproductive technology (ART) has traditionally been defined using narrow biomedical outcomes, particularly clinical pregnancy and live birth rates. While essential indicators of technical efficacy, these measures provide a limited and incomplete representation of the patient experience, overlooking the psychosocial costs incurred throughout the fertility journey. This disconnect between clinical success and personal suffering exposes a critical limitation of the conventional biomedical model of infertility care.

Recognition of these limitations has driven a conceptual shift towards patient-centered and biopsychosocial models of healthcare. Within this framework, health outcomes are understood to arise from the dynamic interaction of biological, psychological, and social determinants, rather than biological factors alone. Accordingly, there is a growing need for standardized, validated instruments capable of capturing the multidimensional impact of infertility on quality of life. The Fertility Quality of Life (FertiQoL) instrument was developed in response to this need through rigorous international collaboration between patients and clinicians.

FertiQoL is a condition-specific, self-report questionnaire designed to assess quality of life among individuals experiencing fertility problems. It provides a structured evaluation of core life domains, including emotional, mind–body, relational, and social functioning, as well as treatment-related dimensions such as treatment environment and tolerability. By moving beyond generic health measures, FertiQoL offers a standardized and sensitive assessment of subjective well-being that directly reflects the lived experience of infertility. This mini review aims to present an overview of the structure and psychometric validation of the FertiQoL instrument and to highlight its practical value in clinical care, research, and patient empowerment, underscoring its central role in advancing more comprehensive and humane approaches to infertility management.

METHODS

A narrative literature search was conducted in PubMed, Scopus, and Google Scholar for articles published between 2010 and 2025. Search terms included “FertiQoL,” “fertility quality of life,” and “infertility patient-reported outcomes.” Studies were selected based on relevance to the development, validation, psychometric evaluation, and application of the FertiQoL instrument. This review was conducted as a narrative, rather than a systematic review; therefore, no formal systematic review protocol, risk-of-bias assessment, or meta-analysis was applied. Key studies were selected to illustrate cross-cultural applicability, gender sensitivity, and treatment-specific insights

RESULTS

Instrument Overview: The FertiQoL Questionnaire

Responding to the growing recognition that infertility exerts complex psychosocial effects inadequately captured by conventional biomedical indicators, the FertiQoL questionnaire was developed as a dedicated, patient-reported outcome measure. FertiQoL is an internationally validated self-administered instrument specifically designed to assess the multidimensional quality of life of individuals experiencing fertility problems. Its primary objective is to systematically translate subjective infertility-related experiences into standardized and clinically interpretable data that can complement biomedical outcomes in both clinical and research settings.

Importantly, FertiQoL is primarily completed at the individual level and captures personal perceptions of fertility-related quality of life, rather than producing a combined couple-level score (Boivin et al., 2011). Although some dyadic or couple-based studies administer the instrument separately to each partner, partner-level comparisons require paired analyses and are interpreted independently for each partner (Sexty et al.,

2018). This distinction is essential for ensuring methodological rigor when examining gender-specific experiences or relational dynamics in infertility research.

The questionnaire consists of 36 items, of which two global items independently assess overall physical health and general life satisfaction. These items provide an overarching contextual framework within which fertility-specific quality-of-life scores may be interpreted. The remaining 34 items are organized into two conceptually distinct yet complementary modules, as shown in Table 1.

Table 1: FertiQoL modules.

Module	Domains Assessed
Core FertiQoL Module (24 items)	<p>The Core module evaluates quality of life domains related to infertility itself, independent of medical treatment. It encompasses four domains: Emotional (e.g., sadness, frustration, jealousy), Mind–Body (e.g., fatigue, physical discomfort, cognitive functioning), Relational (e.g., intimacy, partner communication, relationship strain), Social (e.g., social inclusion, perceived stigma, external pressures).</p> <p>Together, these domains capture the internal and interpersonal consequences of infertility as a life stressor.</p>
Treatment-Related FertiQoL Module (10 items)	<p>This module specifically addresses quality of life concerns arising from fertility treatment. It comprises two domains: Treatment Environment, which reflects perceptions of care quality, accessibility, and clinical support; Treatment Tolerability, which assesses physical side effects, emotional burden, and financial strain associated with treatment.</p> <p>The Treatment module extends beyond individual symptom burden to reflect health-system and service-level performance, capturing patient perceptions of care quality, accessibility, clinical communication, and treatment-related strain. As such, Treatment FertiQoL scores may inform clinic evaluation, service quality assessment, and targeted improvement initiatives aimed at enhancing patient satisfaction and continuity of care.</p>

The modular structure of FertiQoL represents a key methodological strength, as it allows for differentiation between the psychosocial burden attributable to infertility itself and that imposed by its medical management. This distinction enables clinicians and researchers to generate a nuanced profile of patient experience, thereby supporting individualized care planning and more comprehensive evaluation of outcomes.

Psychometric Properties and Validation

The FertiQoL instrument has been extensively adopted worldwide and translated into 20 languages using a standardized process conducted by a single translation team, with each version subsequently reviewed and

validated by local bilingual fertility specialists (Boivin et al., 2011). The clinical and research utility of FertiQoL is underpinned by robust psychometric validation conducted through standardized international procedures. Initial validation studies demonstrated generally good reliability and construct validity, with some cross-cultural variability in domain performance and differential factor structures reported in certain translations (Dura-Ferrandis et al., 2023; Ariffin et al., 2020; Boivin et al., 2011).

For example, a Malaysian validation study found that several Core items loaded onto different domains, and some items exhibited low factor loadings, potentially due to language or cultural influences, indicating variability in how domains performed in that context (Ariffin et al., 2020). Additionally, research on the Spanish version reported the elimination of several items due to low factor loadings in confirmatory factor analysis, suggesting that the original factor structure may not hold equally across all translations (Dura-Ferrandis et al., 2020). These findings confirm the instrument's capacity to measure fertility-specific quality of life while highlighting nuances in cross-cultural adaptation. Cronbach's alpha coefficients for the Core and Treatment modules and their subscales ranged from 0.72 to 0.92, reflecting good internal consistency across domains in many studies (Boivin et al., 2011). These properties have been replicated across diverse populations, supporting its suitability for both cross-sectional and longitudinal use.

Evidence from Empirical Applications

Western and European Validation Studies

To illustrate the empirical robustness and cross-cultural applicability of FertiQoL, a non-systematic review of key studies was undertaken. Selected studies highlight the instrument's performance across varied sociocultural contexts, treatment modalities, and demographic groups.

Early validation work by Aarts et al. (2011) among Dutch infertility patients provided foundational evidence of FertiQoL's convergent validity in a Western European setting. The study demonstrated a strong negative correlation between FertiQoL scores and measures of emotional distress, confirming that lower fertility-related quality of life is closely associated with heightened psychological burden.

East Asian and Cross-Cultural Applications

Extending validation into East Asian populations, Song et al. (2021) conducted a large cross-sectional study involving 1,062 women undergoing frozen embryo transfer in Beijing, China. Beyond confirming elevated treatment-related stress and reduced quality of life, the authors employed regression analyses using FertiQoL data to identify predictors of diminished quality of life, including social concern, trait anxiety, and prolonged

treatment duration. This study underscored the instrument's analytical utility in identifying psychosocial risk profiles.

Further evidence of cross-cultural variability was provided by Hao and He (2024), who conducted a comparative analysis that revealed distinct patterns of quality-of-life impairment between Chinese and non-Chinese infertility populations. Chinese patients demonstrated greater impairment in the treatment-related module, whereas foreign patients exhibited more pronounced deficits in core quality-of-life domains, highlighting the influence of sociocultural and healthcare-system factors on patient experience.

Gender and Relationship Contexts

Gender-specific sensitivity of FertiQoL was demonstrated in a cross-sectional study by Celda-Belinchón et al. (2025). The findings indicated that women reported significantly lower overall quality of life than men, particularly within emotional and social domains. The study further elucidated differential pathways through which anxiety and depression affected male and female patients and confirmed a negative association between quality of life and both infertility duration and number of treatment cycles.

In treatment-specific populations, a systematic review and meta-analysis by Kurdi and Ali (2025) examined FertiQoL outcomes among women undergoing in vitro fertilization (IVF). The authors reported moderate overall quality of life scores and identified younger age (e.g., under 35 years) as a potential determinant of better FertiQoL outcomes, reinforcing the relevance of demographic stratification in outcome assessment.

Finally, the influence of social context was explored by Bokek-Cohen (2024), who investigated the role of relationship status in IVF patients. Married individuals exhibited significantly higher total, Core, and Treatment FertiQoL scores compared to single patients. Notably, while emotional and social domain scores did not differ significantly, single patients reported markedly poorer outcomes in the Mind–Body and Treatment Tolerability domains. These findings suggest that the absence of partner support may intensify physical strain and psychological vulnerability during treatment.

Collectively, this body of evidence demonstrates that FertiQoL is a psychometrically sound, culturally adaptable, and clinically meaningful instrument. Its capacity to capture nuanced variations in fertility-related quality of life across populations, treatment contexts, and social circumstances reinforces its value as a core outcome measure in both reproductive health research and patient-centered clinical practice.

Core Application Value of FertiQoL

The principal value of the FertiQoL instrument lies in its capacity to operationalize the inherently complex and multidimensional construct of quality of life into standardized, measurable, and clinically meaningful data. Evidence from cross-cultural, gender-based, and treatment-specific studies demonstrates that FertiQoL plays a central role in shifting infertility care from a predominantly disease-focused model to a genuinely patient-centered approach. This contribution is most evident across three interconnected domains: clinical practice, scientific research, and patient engagement.

Clinical Practice: Advancing Holistic and Precision-Oriented Care

Within clinical settings, FertiQoL functions as more than a descriptive assessment tool; it serves as a structured framework for informed and individualized care. By providing standardized domain scores, clinicians can systematically identify patients at heightened risk of psychological distress, relational strain, or treatment-related burden—factors that may otherwise remain unrecognized in routine consultations focused on biological indicators alone. This enables earlier and more targeted psychosocial interventions, improving overall care quality.

Importantly, FertiQoL facilitates more meaningful clinician–patient communication. Quantitative domain-level results allow discussions to extend beyond technical treatment outcomes toward the patient’s lived experience, such as emotional resilience, partner dynamics, or social pressures. As a result, clinical decision-making increasingly incorporates psychosocial well-being alongside biomedical considerations. In this context, treatment success is no longer defined exclusively by pregnancy or live birth rates but also by the preservation or improvement of quality of life, reflecting a more humane and contemporary vision of reproductive medicine.

Scientific Research: Strengthening Patient-Reported Outcome Evidence

In research, FertiQoL provides a psychometrically robust outcome measure that substantially enhances the scope of infertility studies. Its standardized structure allows researchers to compare the quality-of-life impact of different assisted reproductive technology (ART) protocols, treatment modalities, and clinical pathways, thereby supporting evidence-based optimization of care that balances clinical effectiveness with patient well-being.

Moreover, FertiQoL serves as a critical endpoint for evaluating non-pharmacological interventions, including psychological counseling, educational programs, and psychosocial support initiatives. By quantitatively

capturing changes in patient-reported outcomes, the instrument enables rigorous assessment of the effectiveness of these interventions, which are often undervalued when success is measured solely by biological outcomes.

At the population level, large-scale FertiQoL data contribute to identifying key determinants of fertility-related quality of life, informing the development of targeted clinical strategies and health policies.

Patient Empowerment: Supporting Active Participation in Care

From the patient perspective, FertiQoL promotes self-reflection and active engagement in health management. Completing the questionnaire encourages individuals to systematically evaluate their emotional, physical, relational, and social well-being, often bringing implicit stressors into clearer focus. When patients recognize reduced scores in specific domains—such as emotional functioning or social relationships—they gain greater insight into their own needs and challenges.

This awareness can motivate proactive coping behaviours, such as seeking psychological support, strengthening communication with partners, or requesting additional clinical guidance. Through this process, FertiQoL helps shift patients from a passive role as recipients of treatment to active participants in their care, fostering greater autonomy and resilience throughout the fertility journey.

In contemporary fertility care, social media platforms have emerged as health communication tools that can enhance patient empowerment and improve quality of life (Chen et al., 2023; Smailhodzic et al., 2016). Online fertility communities, educational campaigns, and social support platforms provide accessible opportunities for information sharing, peer interaction, and emotional support, particularly in addressing the emotional and social domains of quality of life. Social media also offers emotional, informational, and network support that has been associated with increased patient empowerment, enabling patients to gain confidence, engage actively in decision-making, and manage their care more effectively (Smailhodzic et al., 2016). The FertiQoL instrument provides a validated framework to evaluate the impact of these digital interventions on patient-reported outcomes, linking modern engagement strategies with measurable improvements in well-being.

CONCLUSION

FertiQoL extends well beyond its function as a measurement instrument. It represents a critical link between clinical outcomes and patient experience in reproductive medicine. By enabling holistic clinical assessment, strengthening patient-reported outcome research, and empowering individuals to engage actively in their care, FertiQoL supports a more comprehensive and compassionate model of infertility management. Its broader

adoption is essential for advancing reproductive healthcare toward a paradigm that values quality of life as highly as biological success.

Conflicts of Interest

The authors declare no conflicts of interest.

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