Research Article

A Descriptive Study of Fertility-Related Quality of Life in Women Receiving Infertility Treatment

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Abstract

Objective: This study aimed to describe fertility-related quality of life among women with infertility who are undergoing fertility treatment at a single tertiary fertility center, based on sociodemographic, clinical, and treatment characteristics.

Methods: The study design was descriptive with a cross-sectional approach, using a consecutive sampling technique. The study sample consisted of infertile women undergoing pregnancy programs at Halim Fertility Center (HFC) RSIA Stella Maris Medan and met the inclusion and exclusion criteria. Data were collected using the FertiQoL (Fertility Quality of Life Tool) questionnaire and were presented as a frequency distribution.

Results: Of the 60 respondents, most were in the 31–35 age group (38.3%) and were overweight (55%), followed by normal weight (41.7%). Most of them experienced primary infertility (83.3%), with infertility lasting 2–5 years (41.7%), and the most common cause was ovulation disorders (31.7%). Based on the type of pregnancy program, In Vitro Fertilization (76.7%) was the most common procedure. FertiQoL assessment revealed a wide range of fertility-related quality-of-life scores across treatment options.

Conclusion: Most women undergoing infertility treatment reported a high fertility-related quality of life (60%), with higher average scores seen in those undergoing in vitro fertilization (58.7%).

Keywords: Infertility, quality of life, pregnancy programs, women

Gambaran Tingkat Kualitas Hidup Wanita dengan Infertilitas yang Sedang Menjalani Program Kehamilan

Abstrak

Tujuan: Penelitian ini bertujuan untuk menggambarkan tingkat kualitas hidup terkait fertilitas pada wanita infertil yang menjalani program kehamilan berdasarkan karakteristik sosiodemografi, klinis, dan jenis terapi.

Metode: Desain penelitian adalah deskriptif dengan pendekatan *cross-sectional* menggunakan teknik *consecutive sampling*. Sampel penelitian adalah wanita infertil yang menjalani program kehamilan di Halim Fertility Center (HFC) RSIA Stella Maris Medan serta memenuhi kriteria inklusi dan eksklusi. Data dikumpulkan menggunakan kuesioner FertiQoL (*Fertility Quality of Life Tool*) dan disajikan dalam bentuk distribusi frekuensi.

Hasil: Dari 60 responden, mayoritas berada pada kelompok usia 31 – 35 tahun (38,3%) dan memiliki status berat badan berlebih (55%) dan diikuti normoweight (41,7%). Sebagian besar responden mengalami infertilitas primer (83,3%) dengan durasi infertilitas 2 – 5 tahun (41,7%), dan penyebab tersering adalah gangguan ovulasi (31,7%). Berdasarkan jenis program kehamilan, Fertilisasi In Vitro (76,7%) merupakan prosedur yang paling banyak dilakukan. Pengukuran menggunakan FertiQoL menunjukkan bahwa responden memiliki kualitas hidup yang bervariasi.

Kesimpulan: Hasil penelitian menunjukkan bahwa sebagian besar wanita infertil yang sedang menjalani program kehamilan memiliki kualitas hidup tinggi (60%), dengan proporsi tertinggi pada kelompok Fertilisasi In Vitro (58,7%).

Kata Kunci: Infertilitas; kualitas hidup; program kehamilan; wanita

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Introduction

Having children is a common hope for married couples. However, many couples have not been able to conceive despite being married for several years. This inability to conceive is known as infertility. Data from the Indonesian Ministry of Health in 2022 reported that approximately 10–15% of the 39.8 million fertile couples in Indonesia experience infertility. This means about 4 to 6 million couples need medical help to conceive.[1] Infertility is not caused only by women. Studies show that men contribute roughly 25–55% of infertility cases, while combined partner factors make up about 10%, and idiopathic causes also account for 10%. These findings confirm that infertility is not solely the woman's responsibility.[2]

According to the World Health Organization (2023), infertility can be categorized into two types: primary and secondary. The causes of infertility are multifactorial, including factors from the woman (such as ovulation disorders, tubal and pelvic issues, uterine problems, cervical issues), male factor disorders which may stem from spermatogenesis problems, a combination of factors from both partners, or idiopathic causes cases.[3] The management often involves various clinical approaches, ranging from lifestyle changes and ovulation induction to intrauterine insemination and in vitro Fertilization.[4]

Quality of life refers to the positive and negative conditions an individual experiences at a specific time, including physical, emotional, social, and interpersonal aspects aspects.[5] In healthcare, the goal of treatment is not only to eliminate the disease or its symptoms, but also to enhance the patient's overall well-being and their ability to function and interact in everyday life.[6]

Couples undergoing infertility tests and treatments typically face various physical and emotional challenges. However, women tend to experience a greater decline in quality of life than their partners, especially in communities with strong social values where infertility is often seen as the woman's responsibility.[7]

The FertiQoL instrument was developed by ESHRE and ASRM as a specific tool to measure quality of life in individuals experiencing infertility. This questionnaire includes 34 questions divided into two parts: a core section that evaluates emotional, mind/body, relationship, and social aspects, and a treatment section that assesses therapy tolerability and the service environment. Both parts help describe the impact of infertility and its treatment process on the patient's overall well-being.8 Therefore, this study aimed to describe fertility-related quality of life among women with infertility undergoing treatment at a fertility center in Medan.

Method

This is a descriptive research method with a cross-sectional approach using consecutive sampling techniques. Data collection is conducted through the FertiQoL (Fertility Quality of Life Tool) questionnaire distributed to all women with infertility conditions who are participating in a pregnancy program at the Halim Fertility Center (HFC) Clinic, Stella Maris Hospital, Medan, from July to October 2025. The data are collected and then processed with a computer program called SPSS (Statistical Package for the Social Sciences), ensuring that respondents meet the inclusion and exclusion criteria. The minimum sample size is 50, determined using the Lemeshow formula as follows:

$$n = \frac{z^2 \times P \times (1 - P)}{d^2}$$

$$n = \frac{1{,}96^2 \times 0{,}155 \times (1 - 0{,}155)^2}{0{,}1^2}$$

$$n = 50$$

n = minimum sample size
z = alpha standard deviation, based on the researcher's confidence level (95% = 1.96)
P = Estimated proportion of events in the population, taken from a prior study, with p = 0.155 for this sample calculation
d = Margin of error, representing the allowable error relative to the population (10% or 0.1)

The FertiQoL questionnaire employs a 5-point Likert scale, with scores ranging from 0 to 4.

$$\text{Final Score} = \frac{Total\ Score}{34 \times 4} \times 100\% = \frac{Total\ Score}{136} \times 100\%$$

The higher the score, the better the quality of life; the lower the score, the more it is impaired.

The respondents' raw scores are converted into Z-scores, then into T-scores, and interpreted as follows:
a. T 50 = High Score
b. T 50 = Low Score

There is no universally accepted cutoff value for FertiQoL scores. In this study, Z-score and T-score transformations were used solely for descriptive categorization to help interpret the score distribution within the study population and were not meant as diagnostic thresholds.

This research was conducted after the researcher received ethical approval from the Health Research Ethics Committee at the Faculty of Medicine, University of North Sumatra, fulfilling one of the requirements for submitting a research permit application.

Results

Table 1 Distribution of Respondent Characteristics of Female Infertility Patients

	n (%)
Age	
20-25 years	2 (3.3)
26-30 years	14 (23.3)
31-35 years	23 (38.3)
36-40 years	16 (26.7)
41-45 years	2 (3.3)
>45 years	3 (5)
IMT	
Underweight	2 (3.3)
Normoweight	25 (41.7)
Overweight	21 (35)
Class I obesity	10 (16.7)
Class II obesity	2 (3.3)
Duration of Infertility	
<2 years	3 (5)
2-5 years	25 (41.7)
6-8 years	22 (36.7)
>8 years	10 (16.7)
Types of Infertility	
Primary Infertility	50 (83.3)
Secondary Infertility	10 (16.7)
Causes of infertility	
Ovulation Disorders	19 (31.7)
Tubal and Pelvic Disorders	7 (11.7)
Uterine Disorders	12 (20)
Cervical Disorders	1 (1.7)
Male-Factor Disorders	18 (30)
Idiopathic	3 (5)
Pregnancy Program	
Natural (Ovulation Induction)	10 (16.7)
Intrauterine Insemination	4 (6.7)
In Vitro Fertilization	46 (76.7)

Based on the inclusion and exclusion criteria, 60 subjects were enrolled in this study, and their characteristics are detailed in Table 1 above. The majority of participants were in the 31–35 year age group (38.3%), with the smallest proportions in the 20–25

and 41–45 year age groups (3.3% each). Most respondents were overweight or obese (55%). The duration of infertility was most commonly between 2 and 5 years (41.7%). Primary infertility was the most common type (83.3%). Ovulation disorders were the leading cause of infertility (31.7%). Most respondents underwent an in vitro fertilization program (76.7%), while only a small percentage (6.7%) underwent intrauterine insemination.

Table 2 Distribution of Quality of Life levels with FertiQoL

	n (%)
High score (T≥50)	36 (60)
Low score (T<50)	24 (40)

Table 2 shows that most respondents are in the high-quality-of-life category (60%), while the rest are in the low-quality-of-life category (40%).

Table 3 Distribution of Mean FertiQoL Subscales

Subscale	Mean ± SD
Emotional	57.5 ± 22.6
Mind/Body	59.7 ± 21.0
Relational	52.5 ± 25.2
Social	52.4 ± 24.9
Environment	93.6 ± 11.6
Tolerability	85.8 ± 28.8
Core FertiQoL	63.4 ± 12.3
Treatment FertiQoL	65.2 ± 11.4
Total FertiQoL	63.9 ± 10.1

Table 3 shows that the average scores across FertiQoL domains were above the mid-scale level, with the highest scores in the treatment environment domain, indicating a good quality of life in women with infertility undergoing pregnancy programs at Stella Maris Medan Hospital.

The standard deviation values describe the variability in respondents' scores, where the environmental domain exhibits a more consistent distribution of scores (SD 11.6), while the tolerability and relational domains show greater variability (SD 28.8 and 25.2), reflecting differences in individual experiences.

Table 4 Quality of Life Levels by Pregnancy Program Type

Types of Pregnancy Programs	High score (T≥50)	Low score (T<50)	Total
	n(%)	n(%)	
Natural (Ovulation Induction)	5 (50)	5 (50)	10
Intrauterine Insemination	4 (100)	0	4
In Vitro Fertility	27 (58.7)	19 (41.3)	46

According to Table 4, most respondents underwent in vitro fertilization, with 58.7% scoring high on quality of life and 41.3% falling into the low category. In contrast, all respondents in the non-dominant group, specifically the insemination group, exhibited high quality of life scores.

Table 5 indicates that the intrauterine insemination group had the highest average Core FertiQoL score, while the natural program (ovulation induction) had the lowest. A similar trend was observed in the Treatment FertiQoL domain, with the highest score in intrauterine insemination and the lowest in the natural program. All program types exhibited very high environmental domain scores (≥93), with minimal differences among the groups.

Table 5 Average FertiQoL Subscales Based on Type of Pregnancy Program

Types of Pregnancy Programs	n	Subscale							
		Emotional	Mind/ Body	Relational	Social	Environment	Tolerability	Core Total	Treatment Total
Natural (Ovulation Induction)	10	64.58	62.08	55.42	60.42	94.58	85.62	61.15	52.08
Intrauterine Insemination	4	61.46	60.42	53.12	50	95.83	98.44	71.61	58.33
In Vitro Fertility	46	55.62	59.15	51.81	50.91	93.21	84.78	63.20	54.48

Discussion

This study shows that most women with infertility are in the 31–35 year age group, consistent with the literature stating that increased age in women is linked to decreased oocyte quality and a higher risk of chromosomal abnormalities, which can lower reproductive success chances.9 This finding aligns with previous research results indicating that the lowest prevalence of infertility occurs in the 15–29 year age group, with a tendency to increase as age advances.[10] Based on body mass index data, most respondents were overweight or obese. This aligns with scientific sources that state that excess weight can disrupt hormonal balance, as increased adipose tissue leads to greater estrogen production, which affects the regularity of ovulation.[11]

The high rate of overweight and obese women, along with the prevalence of ovulation disorders, suggests a possible role of metabolic and endocrine conditions like polycystic ovary syndrome (PCOS), which is known to be closely linked to obesity and anovulation. PCOS not only impacts reproductive function but is also associated with psychological distress, body image concerns, and lower self-esteem, all of which can negatively affect quality of life.

However, structured fertility treatment and ongoing medical supervision may help reduce these effects, leading to relatively maintained quality-of-life scores in this study population.

The duration of infertility usually ranges from 2 to 5 years, aligning with previous studies that show couples typically seek medical help after several years of trying. Prolonged infertility can have physical and psychological effects and is linked to reduced reproductive capacity in women.[12]

The most common type of infertility identified was primary infertility. This aligns with previous research indicating that primary infertility is the most prevalent form among reproductive-age couples facing infertility, making up 70.9% of cases, while secondary infertility accounts for less than a third (29.1%).[13] This condition is likely linked to a lack of experience with pregnancy or having children, causing women with primary infertility to often have higher anxiety levels, which then affects their quality of life.[14]

Regarding causes of infertility, ovulation disorders are the most common factor, followed by male factors, consistent with previous research which shows that ovulation disorders are the primary cause of infertility in women, accounting for about 40% of cases.[15] The prominence of male factors in this study also confirms that infertility is a multifactorial condition caused by both men and women.

Most respondents underwent the In Vitro Fertilization (IVF) program, which became the preferred choice and was regarded as the most effective treatment for infertile couples. The prominence of IVF in this study reflects the clinical profile of patients treated at a tertiary fertility referral center. IVF is typically chosen for women with longer infertility durations, multiple contributing factors, or previous unsuccessful treatments. Additionally, patients often perceive IVF as offering higher success rates and clearer outcomes, which may foster greater optimism and emotional readiness, potentially leading to higher quality of life scores among women undergoing this treatment. Furthermore, previous studies found that approximately 48.7% of patients chose IVF as their initial therapy without prior intrauterine insemination.[16]

The results of the study showed that most respondents had a relatively high level of quality of life. Interestingly, the relatively high fertility-related quality of life observed in this study may be explained by adaptive lifestyle and coping behaviors among women undergoing infertility treatment. Women

who actively seek fertility care often adopt healthier lifestyles, including improved dietary habits, weight management, regular physical activity, and adherence to medical advice, which may positively influence both physical well-being and psychological resilience.

Engagement in structured fertility programs may also provide a sense of control and purpose, contributing to a better perceived quality of life despite ongoing infertility. This indicates that women with infertility who are undergoing a pregnancy program are able to adapt to the conditions and therapy processes they undergo, as well as control stress and maintain a better quality of life.[17]

In the IVF group, the majority of respondents also reported good quality of life, which is thought to be related to self-resilience, partner support, and hope for the success of therapy, and these factors have an impact on quality of life. The FertiQoL assessment showed that all quality-of-life domains were in the high category. The relatively homogeneous distribution of scores across the environmental domain reflects consistent satisfaction with clinical facilities and services, whereas greater variation in the relational and tolerability domains indicates differences in individual experiences during infertility treatment.

The quality of care and the effectiveness of medical interventions play a significant role in shaping patients' experiences during treatment, which, in turn, affects quality of life.[18]

The relatively positive fertility-related quality of life observed in this study may reflect adaptive coping strategies, strong partner support, and hopeful expectations for treatment outcomes. Previous research has indicated that comprehensive fertility care and supportive clinical environments can help reduce psychological distress associated with infertility.

This study did not assess clinical pregnancy outcomes or treatment success rates, as its main focus was on evaluating fertility-related quality of life rather than therapeutic effectiveness. Quality of life is a subjective and multidimensional construct that may not directly reflect pregnancy results. Women might report positive quality-of-life perceptions even during ongoing treatment or unsuccessful cycles, especially when supported by comprehensive care, counseling, and partner involvement. Future research using longitudinal designs and treatment outcomes is needed to better understand the connection between quality of life and reproductive success.

Conclusion

Most women experiencing infertility at the Halim Fertility Center Clinic are aged 31–35 and are mostly overweight. Primary infertility is the most common type, with durations typically ranging from 2 to 5 years. Ovulation disorders are the main cause of infertility among the respondents. The most common pregnancy program is in vitro fertilization. Assessment with the FertiQoL instrument indicated that most respondents reported a high quality of life related to fertility, although some showed low scores. Differences were observed across treatment types, especially in the group undergoing in vitro fertilization, with some respondents still reporting low quality of life scores.

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