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Impact of Infertility on the Quality of Life of Women in Douala (Cameroon): Assessment Using the FertiQoL Score

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Abstract

Background: Infertility carries a major psychosocial burden in sub-Saharan Africa, yet women's quality of life (QoL) is rarely assessed with standardized tools. The Fertility Quality of Life questionnaire (FertiQoL) is internationally validated but had not been used in Cameroon prior to this study. **Objective:** To assess the impact of infertility on women's QoL in Douala using FertiQoL and to identify associated determinants. **Methods:** We conducted an analytical cross-sectional study over nine months in four health facilities in Douala. One hundred and seventy-three infertile women aged 25 - 55 years were included. QoL was measured with FertiQoL (emotional, social, relational, and mind–body domains). Associations with impaired QoL were examined using multivariable logistic regression ($p < 0.05$). **Results:** Mean age was 37.2 ± 6.1 years; secondary infertility accounted for 76.9%. Over half reported self-medication (63.6%) or phytotherapy (68.2%). Overall, 55.1% had impaired QoL. The most affected domains were emotional (72.3 %), social (71.7%), and mind–body (68.8%), whereas the relational domain was comparatively preserved. Independent determinants of impaired QoL were single marital status (OR = 1.57; p = 0.001), monthly income < 100,000 FCFA (OR = 1.50; p = 0.019), history of STIs (OR = 3.60; p = 0.001), nulliparity (OR = 1.32; p = 0.001), and infertility duration >20 years (OR = 1.48; p = 0.038). **Conclusion:** This study the first Cameroonian application of FertiQoL shows a substantial negative impact of infertility on women's QoL in Douala, particularly in the emotional and social domains. Findings support a holistic, multidisciplinary approach that includes psychological support and improved access to reproductive care.

Keywords

Infertility, Quality of Life, FertiQoL, Women, Douala (Cameroon)

1. Introduction

Infertility is defined by the World Health Organization (WHO) as the inability for a couple to conceive after 12 months of regular, unprotected sexual intercourse [1]. It is estimated to affect approximately 48 million couples and 186 million individuals worldwide [2]. Its prevalence is relatively stable in industrialized countries (8% - 12%) [3], but much higher in low- and middle-income countries, sometimes reaching 25% - 30% in sub-Saharan Africa [4] [5]. In Cameroon, several recent studies report a prevalence between 20 and 30% [6] [7]. In most cases, it is secondary infertility, often linked to a history of sexually transmitted infections (STIs), induced abortions in precarious conditions, or surgical complications [7] [8]. These observations align with those described in other African countries, where infectious causes are more prevalent compared to genetic or endocrine etiologies more commonly observed in Western countries [4] [9]. Beyond the biomedical aspect, infertility represents a considerable psychosocial suffering. In African societies where motherhood is a key factor of identity and social recognition, the absence of children can expose a woman to stigma, marital tensions, isolation, and even polygamy or divorce [10]-[12]. This emotional burden, long underestimated, is now recognized as a central element of the infertility experience [13]. To incorporate this dimension, the assessment of quality of life (QoL) has become an essential tool. The FertiQoL (Fertility Quality of Life) questionnaire, developed by Boivin *et al*. in 2011 [14], is the international reference tool, validated and widely used in various contexts. It explores four dimensions: emotional, social, relational, and body/mind. However, its use remains rare in Africa, and no study had yet assessed the QoL of infertile women in Cameroon using this instrument. In this context, we conducted a study aimed at evaluating the quality of life of infertile women in Douala using the FertiQoL score. Our objectives were to identify the determinants associated with the alteration of the different dimensions and to evaluate the impact of infertility on the QoL of infertile women in Douala, in order to contribute to a better understanding and management of infertility in the Cameroonian context.

2. Methods

2.1. Type and Setting of the Study

We conducted an analytical cross-sectional study with prospective data collection over a duration of 7 months, from January to July 2025, in four reference healthcare facilities in the city of Douala, the economic capital of Cameroon. These establishments included public and private hospitals with gynecology-obstetrics services

and specialized infertility consultations.

2.2. Study Population

The study included women aged 25 to 55 years, consulting for primary or secondary infertility.

2.3. Inclusion Criteria

- Women diagnosed as infertile by a gynecologist,
- Women aged 25 and older,
- Women who provided informed consent.

2.4. Exclusion Criteria

- Women with severe chronic comorbidities (diabetes, cancer, kidney failure) that could affect quality of life independently of infertility,
- Incomplete or unusable records,
- Any refusal to participate in the study.

2.5. Sampling and Sample Size

We conducted an exhaustive sampling of all infertile women meeting the criteria at the four sites during the study period. The final sample size was 173 participants.

2.6. Data Collection

Data were collected using a structured questionnaire administered face-to-face by trained interviewers. Infertility-specific quality of life was assessed using the FertiQoL (Fertility Quality of Life) questionnaire, developed and validated by Boivin *et al.* [14]. This tool consists of two parts :

- A "core" module with 24 items covering four dimensions (emotional, social, relational, body/mind),
- An optional "treatment" module on the experience of care.

The optional *Treatment* module of the FertiQoL questionnaire, which explores patient satisfaction with medical care and staff interactions, was not administered in this study. Responses are scored on a 5-point Likert scale. Scores for each domain are transformed to a 0-100 scale, with higher scores indicating a better quality of life. Consistent with prior validation studies of the FertiQoL instrument, impaired quality of life was defined as a total score < 50 on a 0-100 scale.

2.7. Statistical Analyses

Data were entered and analyzed using SPSS version 26.0. Quantitative variables were presented as mean ± standard deviation, and qualitative variables as frequencies and percentages. Associations between independent variables and quality of life were explored using the Chi-square test and Student's test. Significant factors in univariate analysis were entered into a multivariable logistic regression to iden-

tify independent determinants. Statistical significance was set at $p < 0.05$.

2.8. Ethical Considerations

Each participant provided written informed consent. The anonymity and confidentiality of the data were maintained throughout the study.

3. Results (Figure 1)

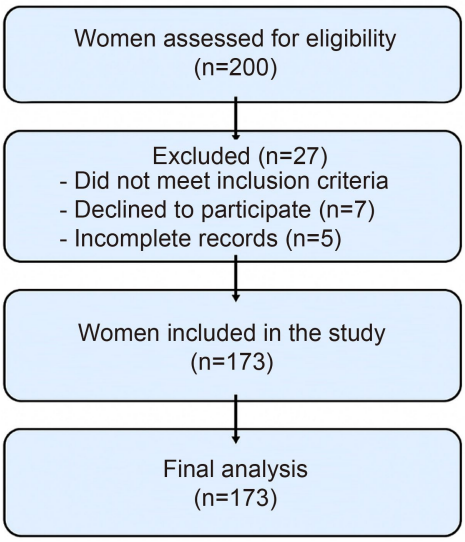

Figure 1. Flow diagram.

3.1. Sociodemographic and Clinical Characteristics

A total of 173 infertile women were included in the study. The average age was 37.2 ± 6.1 years (25 - 55 years). The majority of participants were in a common-law union (55.5%), 30% were single, and 14.5% were formally married. Nearly half (46.2%) had a monthly income of less than 100,000 FCFA. Secondary infertility was predominant (76.9%). More than half of the women reported a history of STIs (53.7%) or abortion (52.6%). Nulliparity affected about 60% of the sample (Table 1).

Table 1. Sociodemographic and clinical characteristics of participants.

Variables	Number (N)	Percentage (%)
Average Age (± SD)	37.2 ± 6.1	-
Single	52	30.0
Common-Law Union	96	55.5
Formally Married	25	14.5
Higher Education Level	77	44.7
Income < 100,000 FCFA	80	46.2
Secondary Infertility	133	76.9

Continued

Nulliparity	104	60.1
History of STIs	93	53.7
History of Abortion	91	52.6

3.2. Evaluation of Quality of Life (FertiQoL)

Overall Quality of Life

The FertiQoL is an objective measure not only of overall quality of life (QoL) but also of the different sub-domains of this QoL. On a scale from 0 to 100, we found that 55.1% of patients had impaired overall quality of life, while 44.9% of women had a significantly satisfactory quality of life.

3.3. Dimensions of the FertiQoL Quality of Life Score

Among the 173 infertile patients included, the evaluation of quality of life according to the different sub-scales highlights a marked overall impact. Similarly, the body/mind dimension (68.8%), the social dimension (71.7%), and the emotional dimension (72.3%) were predominantly compromised. However, the relational dimension stood out, remaining relatively preserved: two-thirds of the women (66.5%) reported satisfactory relational quality, compared to only 33.5% who evaluated it as impaired. These results highlight that while infertility profoundly affects perceived health, emotional and social well-being, as well as overall satisfaction, couple relationships seem to better withstand this burden, representing an important resilience factor in this context (Table 2).

Table 2. Distribution of FertiQoL domain scores among infertile women in Douala, Cameroon (n = 173).

Quality of Life Sub-scales	Satisfactory n (%)	Impaired n (%)
Body/Mind	54 (31.2)	119 (68.8)
Social	49 (28.3)	124 (71.7)
Relational	115 (66.5)	58 (33.5)
Emotional	48 (27.7)	125 (72.3)

3.4. Factors Associated with Impairment of Quality of Life

The analysis highlights several significant determinants of impaired quality of life related to infertility. From a sociodemographic perspective, being single is associated with a notable decrease in the FertiQoL score (OR = 1.57; 95% CI: 1.26 - 2.22; p = 0.001), reflecting the impact of marital status on the perception of suffering related to infertility. Similarly, a monthly income of less than 100,000 FCFA is correlated with impaired quality of life (OR = 1.50; 95% CI: 1.16 - 1.87; p = 0.019), suggesting that economic constraints exacerbate the psychosocial vulnerability of infertile women. Medical factors play a predominant role: a history of sexually transmitted infections emerges as the most powerful determinant (OR = 3.60; 95%

CI: 1.74 - 7.60; p = 0.001), confirming their impact on the psychological and social consequences of infertility. Nulliparity is also significantly associated with a lower FertiQoL score (OR = 1.32; 95% CI: 1.14 - 1.65; p = 0.001), highlighting how the absence of motherhood remains a source of suffering in this cultural context. Finally, an infertility duration of more than 20 years exacerbates the deterioration of quality of life (OR = 1.48; 95% CI: 1.16 - 1.62; p = 0.038), illustrating the cumulative effect of time and the chronic nature of the psychological burden (Table 3).

Table 3. Determinants of impaired quality of life (multivariate logistic regression).

Factors	OR (IC 95 %)	p-value
Being Single	1.57 (1.26 - 2.22)	**0.001**
Income < 100,000 FCFA	1.50 (1.16 - 1.87)	**0.019**
History of STIs (Sexually Transmitted Infections)	3.60 (1.74 - 7.60)	**0.001**
Nulliparity	1.32 (1.14 - 1.65)	**0.001**
Infertility >20 years	1.48 (1.16 - 1.62)	**0.038**

4. Discussion

In our study population, infertility is associated with a measurable deterioration in quality of life (QoL) as evaluated by FertiQoL, with notable independent determinants: history of STIs (OR = 3.6), being single (OR = 1.6), income < 100,000 FCFA (OR = 1.5), nulliparity (OR = 1.3), and infertility duration >20 years (OR = 1.5). These associations align with regional and global data: in East Africa (Zanzibar), FertiQoL decreases with the duration of infertility and certain clinical factors; in Ethiopia, infertile women exhibit significantly lower QoL scores than fertile controls, and a history of STIs is linked to lower QoL; in Nigeria, recent comparisons confirm marked deficits in psychological and social domains among infertile women compared to controls [15]-[17].

Our findings on marital status fit within pro-natalist contexts where marriage remains a key source of material and emotional support. The stigma of infertility documented in Ghana and summarized in a systematic review degrades QoL through social isolation and avoidance coping strategies; being single may amplify this risk by reducing access to marital and family support [6] [9]. This sheds light on the independent contribution of single status to the observed low QoL.

Economic precarity (income < 100,000 FCFA) as a predictor of low QoL is consistent with the financial burden of fertility treatments: the WHO notes that 1 in 6 people will face infertility during their lifetime, and costs, often paid out-of-pocket, expose households to catastrophic expenditures, particularly in low- or middle-income countries. In such contexts, financial constraints can exacerbate anxiety, delay treatment, and ultimately lower QoL [18].

Regarding the type/duration of infertility, our data (nulliparity and duration > 20 years associated with lower QoL) align with African and international work showing: (i) differences in QoL between primary and secondary infertility (with

sometimes less impaired QoL in women who have already given birth), (ii) a gradual decrease in FertiQoL with repeated treatment cycles and prolonged therapeutic journeys [3] [7] [10]. These heterogeneities (e.g., Zanzibar vs. Nigeria) highlight the influence of local social norms and past maternity experiences on the perception of QoL.

Instrumentally and culturally, the use of FertiQoL remains relevant (an internationally validated tool), but recent work in North Africa emphasizes the importance of a culturally sensitive interpretation of scores: some social dimensions poorly capture the specific social pressure in collectivist societies, suggesting needs for contextual adaptations and interpretive support [2] [19].

5. Clinical and Public Health Implications

1. Integrate systematic psychosocial screening (FertiQoL + anxiety-depression screening) into infertility consultations, with referral to psychological support and peer groups to counteract stigma and isolation [13] [20].

2. Reduce financial barriers: advocate for partial public/insurance funding of care (imaging, surgery, medical assisted reproduction) in line with WHO calls to limit catastrophic expenditures [18].

3. Proactively prevent and treat STIs (standardized screening/treatment) given their strong association with degraded QoL [6].

4. Couple/family-centered approach: interventions considering marital status and duration of infertility; therapeutic education on realistic expectations and non-avoidant coping strategies [6] [7] [9].

5. Cultural adaptation of FertiQoL: train teams to interpret local social domains and consider complementary modules (e.g., financial burden), as suggested by Sudanese experience [1] [19].

6. Strengths and Limitations

This study adds local evidence on modifiable levers (STIs, financial constraints, isolation), but its cross-sectional design limits causal inference; a longitudinal cohort and trials of psycho-educational/financial interventions will allow testing the improvement of FertiQoL and its domains. The socio-cultural nuances also call for ongoing contextual validation of FertiQoL.

7. Conclusion

This study, the first of its kind in Cameroon using the FertiQoL score, highlights the considerable impact of infertility on the quality of life of women in Douala. More than one in two participants had impaired quality of life, with predominant effects on the emotional, social, and body/mind dimensions, while the relational dimension seemed relatively preserved. The main determinants of diminished quality of life were being single, low income, history of sexually transmitted infections, nulliparity, and prolonged duration of infertility. These factors reflect the particular vulnerability of exposed women, where the absence of children repre-

sents not only a medical suffering but also a social and identity-related impact. Beyond the epidemiological findings, this study advocates for a holistic and multidisciplinary approach to infertility care in Cameroon, including: the prevention of genital infections and risky abortions; improvement of financial and geographical accessibility to reproductive care; and, most importantly, systematic psychological support for patients, in order to reduce the associated emotional and social distress.

Author Contributions

All authors contributed to the development of this work.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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