

Relationship between marital satisfaction and fertility quality of life among women undergoing *in vitro* fertilization

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Abstract: Infertility is a serious public health concern since the desire for motherhood is high in every society. Infertile women are most concerned about losing their married life; nonetheless, marital contentment is a crucial component of a couple's marriage existence. Hence, the present study aims to explore the relation of marital satisfaction with quality of life among women undergoing *in vitro* fertilization. A case control research design was conducted during 2022-24. A sample of 284 women (142 IVF and 142 natural pregnancy women) recruited through purposive sampling technique snowball sampling method from Telangana and Karnataka region. Self-structured questionnaire to elicit demographic information, Socio-Economic Status (SES) Scale assess socio economic status of participants, Couple satisfaction index to assess the satisfaction in marital relationship and Fertility quality of life (FertiQoL) questionnaire measures a person's overall sense of wellbeing were the tools used in the study. The findings revealed that majority of women were fairly satisfied (54.92% Vs 9.85%) in IVF group compared to women with natural pregnancy. Women in IVF and natural pregnancy had moderate (68.30% Vs. 54.22%) and high (31.69% Vs. 45.77%) quality of life. A significant difference between women with IVF and natural pregnancy by marital satisfaction ($M=116.45$) and fertility quality of life ($M=70.87$). Furthermore, significant association was found between marital satisfaction and quality of life among women in IVF group. Therefore, the study advocates to educate the family members especially the spouse for providing emotional support and strength to the women undergoing IVF.

Key words: *In vitro* fertilization, Natural pregnancy, Marital satisfaction, Quality of life

Introduction

The World Health Organization (WHO, 2023) defines infertility as a "disease of the male or female reproductive system defined by the failure to achieve a pregnancy after 12 months or more of regular unprotected sexual intercourse". It can be classed as primary or secondary infertility. Primary infertility refers to women who have not previously conceived. Secondary infertility is characterized by at least one conception that does not repeat. Infertility affects around 80 million people worldwide (WHO, 2023). WHO, 2023 it is widely known that infertility rates are incorrectly estimated. The reasons could include inaccurate assessment methods and unknown types of infertility caused by cultural biases (Hazlina *et al.*, 2022).

Infertility can be caused by a variety of factors in either the male or female reproductive systems, or by a combination of the two, known as mixed causes. However, it is not always able to explain the causes of infertility that were previously classified as unknown. The most common female infertility causes were tubal disorders such as blocked fallopian tubes, uterine disorders such as endometriosis, ovarian disorders such as polycystic ovarian syndrome and endocrine system problems resulting in reproductive hormone imbalance. Male factor-related infertility causes include obstructions in the ejaculatory ducts and seminal vesicles, which can be caused by injuries or infections, hormonal imbalance, varicoceles, morphological difficulties (abnormal shape), and poor sperm motility, all of which have a detrimental impact on fertility. As a result, fertility care includes the prevention, diagnosis, and treatment of infertility through assisted reproductive technologies (WHO, 2023).

In India, where parenthood is highly valued, important, and urgent, being unable to conceive ultimately results in stigma, banishment, and social hardship. Both partners face strong family and societal pressure to start a family (Banerjee and Mary, 2020). Patients undergoing ART, particularly IVF treatment, may experience psychological and emotional distress. Patients may experience discomfort, sadness, or worry prior to, during, or following IVF treatment. Aside from the concern of not becoming pregnant, IVF treatment produces stress for women due to treatment costs, daily injections, mandatory procedures, and the possibility of failure at any stage of the treatment (Wu *et al.*, 2020). Furthermore, adapting to daily life and ordinary activities appeared to be challenging for both partners.

The fear of losing their married life is the primary concern for infertile women; yet, marital contentment is an important aspect of a couple's marital life (Roudsari and Bidgoli, 2017). The degree to which sex partners' expectations of one another are met is known as marital satisfaction, and a low level can have a negative influence on both the couple's minds and bodies. In a partnership, sexuality and sexual activity are important methods to express feelings of intimacy and connection. Marital disagreement may result from the delightful sensation of sexual proximity being negatively influenced by infertility therapies (Repokari *et al.*, 2007). As a result, there is a dearth of research on marital happiness and partner support among women undergoing IVF treatment.

After doing a thorough literature analysis, it was noticed that the QoL was typically examined in infertile women, with very few research studies conducted on women recruited for specialized treatment, such as IVF. There have been less studies on the association between marital satisfaction and quality of life among women undergoing IVF. Hence, the study aims

1. To assess fertility quality of life among women undergoing IVF
2. To study marital satisfaction among women undergoing IVF
3. To the relationship between marital satisfaction and fertility quality of life among women undergoing IVF

Material and methods

Participants

The study comprises 284 women in which 142 women with *in vitro* fertilization treatment and 142 matched sample with natural pregnancy selected from fertility care centres and gynaecological and obstetrics clinics located at Telangana and Karnataka regions recruited through purposive sampling technique snowball sampling method. A case control research design was employed in the study.

Tools used for the study

Self-structured questionnaire: To elicit demographic information of the participants a self-structured questionnaire was designed which includes age of the participant, spouse and at the time of marriage and type of marriage.

Socio-Economic Status (SES) Scale by Aggarwal *et al.* (2005): The scale consists of 22 statements which assess education, occupation, monthly per capital income from all sources, family possessions, number of children, number of earning members in family, education of children, domestic servants in home, possession of agricultural land and non-agricultural land along with animals and social status of the family. The score above 76 regarded as upper high socio-economic status and score <15 regarded as very poor socio-economic status.

Couple satisfaction index (CSI) by Funk and Rogge (2007): The couple satisfaction index was used to assess the satisfaction in marital relationship. It is a self-report measure comprises of 32 items. For positive items scoring ranges from 5 to 0 and for 0 to 5 for negative items. The total raw score ranges from 0-161. Higher scores indicate highly satisfied relationship and lower scores indicates highly unsatisfied relationship. The Guttman split half coefficients and Cronbach's alpha for CSI was 0.750 and 0.84.

Fertility quality of life (FertiQoL) questionnaire by Boivin *et al.* (2008): The Ferti QoL measures a person's overall sense of wellbeing. The instrument contains two modules such as "Core FertiQoL" module assesses personal and interpersonal quality of life with four subscales such as emotional, mind-body, relational and social. "Treatment FertiQoL" module assesses quality of life of individuals during treatment (medical intervention or consultation) which comprises two subscales such as environment and tolerability. The tool consists of total 34 items with additional two items (which were not used in

calculation) classified under two modules. Higher scores indicate better quality of life. The reliability for Ferti QoL was 0.704 obtained through Guttman split half test and 0.85 by Cronbach's alpha.

Statistical analysis

Frequency, percentages, means, standard deviation, chi square, ANOVA and t test were the statistical tools used for data analysis in IBM SPSS statistic 27 software.

Results and discussion

Table 1. elaborates the participants socio demographic characteristics. In the study 38.73 were in the age group of 30-34 years, followed by 35-39 years (33.80%) and 25-29 years (27.46%). Majority of women were under 30-34 years of age (39.43%) with natural pregnancy groups, followed by 35-39 years (30.98%) and 25-29 years (29.57%). With respect to spouse age 44.36 per cent were in 35-39 years age range, 28.87 were in 40-45 years of age and 26.76 were in 30-34 years of age in IVF group. In natural pregnancy group 42.95 per cent were with 35-39 years of age, followed by 40-45 years of age (29.57%) and 30-34 years of age (27.46%). In both IVF and natural pregnancy group, most of the participants reported that their age at the time of marriage was 25-29 years (64.08 and 59.85%), followed by 20-24 (28.87 and 33.80%) and 30-34 years (7.04 and 6.33%). Majority of the participants in IVF and natural pregnancy group reported with non-consanguineous type of marriage (76.76 and 71.12%, respectively) and 23.23 and 28.87 per cent of participants had consanguineous type of marriage in IVF and natural pregnancy group. Almost half of the participants were with

Table 1. Distribution of socio-demographic characteristics of women undergoing *in vitro* fertilization and natural pregnancy (n=142)

Socio demographic characteristics	IVF group n=142 n (%)	Natural pregnancy n=142 n (%)
Age of the participant		
25-29	39(27.46)	42(29.57)
30-34	55(38.73)	56(39.43)
35-39	48(33.80)	44(30.98)
Age of the spouse		
30-34	38(26.76)	39(27.46)
35-39	63(44.36)	61(42.95)
40-45	41(28.87)	42(29.57)
Age at marriage		
20-24	41(28.87)	48(33.80)
25-29	91(64.08)	85(59.85)
30-34	10(7.04)	9(6.33)
Type of marriage		
Consanguineous	33(23.23)	41(28.87)
Non consanguineous	109(76.76)	101(71.12)
Socio-economic status (SES)		
Upper High	-	-
High	76(53.52)	51(35.91)
Upper Middle	66(46.48)	91(64.08)
Lower middle	-	-
Poor	-	-
Very poor(Below Poverty Line)	-	-
Figures in parenthesis indicate percentages		

Relationship between marital satisfaction

Table 2. Distribution and comparison of marital satisfaction between women undergoing IVF and natural pregnancy (N=284)

Marital satisfaction	IVF (n=142)	Natural pregnancy (n=142)	t-value
Unsatisfied	-	11 (7.74)	5.062***
Fairly satisfied	78 (54.92)	14 (9.85)	
Satisfied	36 (25.35)	64 (45.07)	
Highly satisfied	28 (19.71)	53 (37.32)	
Total	142 (100.00)	142 (100.00)	
Mean±SD	102.61±21.64	116.45±24.34	

Figures in parenthesis indicate percentages

*** Level of significance at <0.001

high socio-economic status (53.52%) and 46.48 per cent with upper middle socio-economic status. In natural pregnancy group 35.91 percent with high socio-economic status and 64.08 percent with upper middle socio-economic status.

Distribution and comparison of marital satisfaction in women undergoing IVF and natural pregnancy was shown in Table 2. It shows that 54.92 per cent were fairly satisfied, followed by satisfied (25.35%) and highly satisfied (19.71%) with marital relationship. In natural pregnancy group, 45.07 per cent of women had marital satisfaction, 37.32 were highly satisfied, 9.85 percent were fairly satisfied and only 7.74 per cent were unsatisfied. A significant difference ($t=5.062***$) shows between IVF and natural pregnancy group with respect to marital satisfaction, which indicates natural pregnancy group women ($M=116.45$ SD=24.34) had better marital satisfaction compared to women in IVF group ($M=102.61$; SD=21.64).

Females in the IVF group reported a somewhat satisfied connection with their married partner, while being more apprehensive about romantic relationships than women in the control group, which differed considerably. Women's libidos may have been diminished as a result of hormonal injections and distress during IVF, and the treatment itself may have caused discomfort and anguish, which could be a barrier to intimacy. Salcuni *et al.* (2021) also reported on the anxiety of romantic relationships among women undergoing *in vitro* fertilization therapy, which is consistent with the findings of the study.

These findings are consistent with those of Hamzehgardeshi *et al.* (2023), who found that women undergoing IVF experienced trouble with in-law acceptance, infertility-related affection, and reduced marital satisfaction. Masoumi *et al.* (2016) discovered that women in the fertile group reported higher marital satisfaction than women in the infertile group.

Table 3 presents the distribution and comparison of fertility quality of life among women undergoing IVF (fig.1). Majority of women in IVF group had moderate quality of life (68.30%) and 31.69 percent had high quality of life. In natural pregnancy group 54.22 percent had moderate quality of life and 45.77 percent had high quality of life. A significant difference between IVF and natural pregnancy group was observed ($t=14.052**$). On comparison of mean scores women in natural pregnancy group ($M=70.87$; SD=10.17) exhibited higher quality of life than women in IVF group ($M=57.82$; SD=4.33).

Table 3. Distribution and comparison of levels of Total fertility Quality of life between women undergoing IVF and natural pregnancy (N=284)

Quality of life	IVF (n=142)	Natural pregnancy (n=142)	t-value
Low quality of life	-	-	4.052**
Moderate quality of life	97(68.30)	77(54.22)	
High quality of life	45(31.69)	65(45.77)	
Mean±SD	57.82±4.33	70.87±10.17	

Figures in parenthesis indicate percentage

** level of significance at <0.01

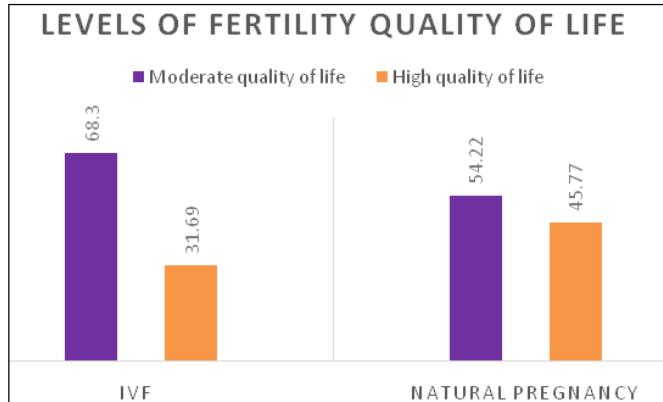


Fig 1. Levels of quality of life of women undergoing IVF and natural pregnancy

Societal burden, misery and pain, monetary crisis, and interpersonal problems were the most intriguing elements influencing their quality of life (Banerjee and Mathews, 2020).

The association between marital satisfaction and fertility quality of life represented in Table 4. The findings reveal that marital satisfaction exhibited a significant association with fertility quality of life ($c^2=16.641***$), where 86.10 percent had better fertility quality of life who were satisfied with marital relationship. The comparison of levels of marital satisfaction with respect to quality of life among women undergoing IVF were given in Table 5. The results reveal that here was no significant difference between levels of marital satisfaction with respect to quality of life. The mean scores reveal that participants who were satisfied with marital relationship had better fertility quality of life ($M=80.00$) compared to highly satisfied ($M=77.53$) and fairly satisfied in marital relationship ($M=77.03$). Women who communicated well with their partners had a higher quality of life, and marital satisfaction was highly and positively connected with it. These findings were consistent with Bai *et al.* (2022).

Table 4. Association of marital satisfaction with fertility quality of life among women undergoing in vitro fertilization (N=142)

Marital satisfaction	FertilityQoL	Total	c^2
	Moderate	Better	
Fairly satisfied	22 (28.90)	54 (71.10)	76 (100)
Satisfied	5 (13.90)	31 (86.10)	36 (100)
Highly satisfied	18 (60.00)	12 (40.00)	30 (100)

***Significant at 0.001 level

Table 5. Comparison between levels of marital satisfaction with regards to quality of life among women undergoing *in vitro* fertilization (N=142)

Marital satisfaction	Mean±SD	F-value
Fairly satisfied	77.03±6.04	2.752 ^{NS}
Satisfied	80.00±5.77	
Highly satisfied	77.53±7.58	

NS indicate non-significant

Conclusion

Infertility is a huge public health concern since everyone wants to be a parent. In societies where parenthood is highly valued, childless couples frequently experience unfavorable

consequences in terms of their social standing, respect, and authority.

The findings reveal that majority of women with IVF were fairly satisfied with marital relationship and they had moderate fertility quality of life compared to women with natural pregnancy with a significant difference. Additionally, the study throws light on significant association between marital satisfaction and quality of life among women with IVF. Hence, the study concludes that women with IVF were in need of partner support which improves their fertility quality of life. Furthermore, the study advocates to educate the family members especially the spouse for providing emotional support and strength to the women undergoing IVF.

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