A Cry for Help: Exploring the Relationship between Perceived Social Support and Quality of Life in Infertile Women of South India

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Abstract

Introduction
Studies conducted on women who are infertile examined some features such as depression, anxiety and social support. However, there has been no study examining the relationship between perceived social support and quality of life in infertile women. Considering this deficiency, the study was conducted to determine the relationship between perceived social support and quality of life in infertile women. Materials and Methods: This hospital based descriptive cross sectional study was conducted with appropriately 275 individuals selected through purposive sampling method. Data were collected by using a structured questionnaire which consists of socio-demographic details, FertiQoL scale and MSPSS scale. Result: In our study based on the scores the quality of life of 62.92% women is low and a 37.08% woman is high. The mean scores for the perceived social support...
from family, friends and significant others were moderate and high, and only few infertile women had low perceived social support scores. There was strong positive correlation between the quality of life and social support of infertile women. **Conclusion:** Our result propose that the fertility quality of life increases when social support perceived also increases.

**Keywords:** perceived social support, infertility, quality of life, cross sectional study


**Introduction**

The World Health Organisation (WHO) defines “infertility” as the failure of getting pregnant in spite of the couple having unprotected regular sexual intercourse for at least one year.\(^1\) The worldwide infertility rate is between 8 and 12% and it is around 20% in Tamilnadu;\(^2\) however, this rate has increased in recent years.

Infertility has a great impact on the patient’s fertility quality of life (QoL) by affecting their physical, psychological and societal well-being. QoL is defined by the World Health Organisation (WHO) as individual’s perceptions of their position in life in the context of culture and the value systems where they live.\(^3\) Similarly, fertility quality of life defines the status of life of infertile patients during their period of infertility in a broad sense. A large number of studies revealed that compared with the fertile counterparts, infertile women experienced poorer QoL during the period of infertility.\(^4\)\(^5\)\(^6\) In addition, infertile women with lesser quality of life were shown to be negatively related to treatment compliance and could cause latent economic burdens on their families. However, by identifying the factors influencing the fertility quality of life makes it possible to conduct specific interventions and care activities in such a way to improve that the fertility quality of life of the women.

Social support is considered to be any kind of help provided by people (friends, family, or that special one) around the individual who is under stress while dealing with this difficult state of affairs.\(^7\) Related studies have revealed that women experience more adjustment problems than men who undergo ART. Although most of them adapt to
the situation, according to follow up a significant proportion of these women suffer from relationship problems.\cite{8}

For this reason, when a treatment fails infertile women require the support of their families, friends, and health-care professionals. Social support is a beneficial coping method that contributes to love, affection, confidence, self-expression, self-knowledge and sense of belonging. Social support enables individuals to be more optimistic by decreasing their levels of anxiety even if it cannot eliminate stressful situation.\cite{9}

As stated earlier, many studies attempted to bring about the poor quality of life and social support perception issues distinctly.\cite{10} Nevertheless, it failed to explore the affiliation between the both, which is vital at this hour. Therefore, with this contextual, our study aimed to explore the relationship between perceived social support and fertility quality of life among infertility patients seeking treatment in tertiary care fertility center.

**Materials and Methods**

This hospital based descriptive cross sectional study was conducted in tertiary care fertility hospital in northern Tamilnadu for a period of 3 months between January to March 2020. This study area was preferred for the reason that, it is one of the largest unit rendering services to women from numerous adjoining places and with diverse socio-cultural features. The study participants comprised of representative sample of women failed to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse

The sample size was calculated considering the prevalence of good fertility quality of life in the group to be 36\% with absolute precision of 6\% and at 95\% confidence interval(CI) level using the formula \( n = \frac{z^2pq}{l^2} \) where \( P=36, q=(1-p) = 64, \) and \( l=6 \).\cite{11} The required sample size was 256. To facilitate the subgroup analysis and to account for refusal to participate, it was decided to include approximately 275 individuals in the final study.

Infertile women were selected through purposive sampling method with maximum variation, including different causes of infertility, different types of infertility (primary and secondary), a wide range of age, at different stages of infertility treatment and different durations of infertility.\cite{12} The inclusion criteria of the sample group were that
women were married, had been diagnosed with infertility and on treatment in the center for at least 6 months prior to the period of study were included. The exclusion criteria of the sample group was being unmarried, having a seriously ill medical history and not willing to give written consent.

Data were collected by using a structured questionnaire which comprised of three parts. Part I consisted of socio demographic details of the respondents such as age, spouse’s age, sex, duration of marriage, level of education, occupation, income, place of residence etc., It also included infertility related details.

Part II The FertiQoL is a validated tool to measure the quality of life among infertile persons.\cite{13} It is a self-reported questionnaire developed by the researchers and clinicians of European Society of Human Reproduction and the American Society of Reproductive Medicine (ASRM). The structure of FertiQoL scale consists of 34 items which are split in two module: Core FertiQoL and Treatment FertiQoL. Core FertiQoL contains four domains and Treatment FertiQoL contains two domain. Each domain contains 6 items. The domains of Core FertiQoL are emotional, mind/body, relational and social and their Cronbach’s alpha value are 0.90, 0.84, 0.80 and 0.75 respectively. The domains of Treatment FertiQoL are tolerability and environment. The Cronbach’s alpha value of these two are 0.72 and 0.84 respectively.

All items in the FertiQoL tool (both core and optional) are rated from 0 to 4. The scores of all these items are computed and transformed in the range of 0 -100. The higher score on the FertiQoL demonstrates the better quality of life while lower scores are indicators of poor quality of life among infertile population. The FertiQoL tool has been translated into more than 30 languages, including Tamil (available online at www.fertiqol.org) was used.

Part III consisted of MSPSS developed by G. D. Zimet was used to measure the social support as perceived by the individual.\cite{14} It is a twelve-item questionnaire which evaluates social support from family members, friends, and significant others, and measures the gradation to which respondents perceive social support from each of these
sources. MSPSS gives a total score and three subscale scores. The internal reliability of the scale along with its subscales was estimated through Cronbach’s alpha. The value of alpha ranged from 0.84 to 0.87 for different subscales and for overall scale internal consistency is 0.92, indicating thereby it possesses excellent reliability.

The English version of MSPSS was translated into Tamil by bilingual doctors (both Tamil and English) and back translated by another doctor following the back-translation technique. Translated version was pilot tested and revised accordingly by the experts before commencing the study. The participants were asked to indicate their agreement on a 7-point Likert Scale ranging from 1 to 7 (very strongly disagree to very strongly agree) on all the three subscales. The higher score on each subscale indicates the higher level of social support perceived by the respondents.

After obtaining ethical clearance from Institution Ethics Committee, the study was commenced. Informed and written consent in local language was taken from each woman before starting the data collection. Data were collected by face-face interview by the investigator.

Obtained data were entered in MS Excel and analyzed by using IBM SPSS Statistics for Windows, version XXIV (IBM Corp., Armonk, N.Y., USA). Kolmogorov-Smirnov test was used for data normalization. Variables in categorical/dichotomous were presented as frequencies along with their percentages. Quantitative data were presented as mean, standard deviation, median, minimum, and maximum. A Spearman correlation analysis was used to find the direction and magnitude of association between the various dimensions of FertiQoL and MSPSS subscales due to a non-normal distribution. The Kruskal-Wallis test was used for comparisons of FertiQoL subscale scores by the support threshold for the MSPSS (High/Medium/low perceived support) followed by Post Hoc Dunn’s analysis to determine the differences between the groups. The Mann-Whitney U test was used for comparing demographic characteristics with FertiQoL and MSPSS scales to ascertain the associations. Reliability of the FertiQoL scale and MSPSS was assessed with Cronbach’s alpha coefficient.
The p-value of less than 0.05 was considered statistically significant.

Results

A total of 266 women with infertility were included in the study. Demographic and background variables like Age (Mean= 30.19 years±5.37), Spouse’s age (Mean=35.6 years±6.14), duration of marriage (Mean=7.2±4.88). As per education, only 40.82% women were graduates compared to their counterparts (53.26%). A proportion of 84.64% were housewives, whereas most spouses had skilled occupation (82.02%). Most of them (46.06%) were in upper class and none of them in lower class according to BJ Prasad’s classification of socio-economic status. Primary infertility was recognized as the major cause for unable to reproduce (68.13%) rest had children already. With regards to cause of infertility, Unknown cause (44.56%) followed by female, male and both with 26.96, 9.36 and 19.1% respectively. The average attempted conception duration was 5.3 years±4.08. The most frequent methods of treatment were Intra uterine insemination (46.12%) followed by IVF (31.13%) and rest by medical methods.

A graphical representation of subscale scores of FertiQoL has been depicted in Figure 1. This box-plot represents median, percentile, minimum and maximum score values. In our study based on the scores the quality of life of 62.92% women is low and 37.08% women is high. Figure 2 characterizes MSPSS subscale scores with support threshold proportions. Baseline characteristics and correlations between FertiQoL subscales and MSPSS subscales are shown in Table 1. There was a strong, positive correlation between most of the subscales of FertiQoL with subscales of MSPSS, which was statistically significant.

Comparisons of FertiQoL subscales with support threshold of MSPSS (High/Medium/low perceived support) with Post Hoc Dunn’s test analysis were illustrated in Table 2. While comparing the scores of two scales, many significant differences were gained except for treatment and environment subscales. Post hoc analysis revealed that there is a hierarchical increase in score in the attainment of good infertility quality of life score with an increase in scores of social support perceived. The test statistics are summarized in Table 2.
Finally, the association of independent variables like age, age at marriage, occupation, education and duration and type of infertility with FertiQoL and MSPSS subscale scores was shown in Table 3. Age and age at marriage did not have statistically significant associations with total FertiQoL scores and MSPSS, whereas most other variables had significant associations.

**DISCUSSION**

This study scrutinized the relationship between the fertility quality of life and the social support perceived from three different social sources (special someone, family, and friends) among women with fertility problems. We hypothesized that the quality of life (QoL) of infertile patients would decrease when the social support perceived is decreased.

The average age of women who were involved in our study is 30.19±5.37 years. Whereas the average age of women in other studies were 35 years.\(^1\)\(^{16}\)\(^{17}\) Most of the women in our study obtained a minimum education of more than 11 years of schooling (65.55%). In some studies conducted in different parts of the world were comparable with this proportions.\(^{11}\)\(^{16}\)\(^{18}\)\(^{19}\) In this study most of the women suffers from primary infertility (68.16%) compared to secondary infertility (31.83%). In identical studies also primary infertility (78.7%) were more than secondary infertility (21.3%).\(^{18}\) The average duration of infertility in our is study is 5.3±4.08 years whereas in related study the average duration is 6.5 years, 4.52±4.01 years and 6.25±4.36 years.\(^{16}\)\(^{17}\)\(^{18}\) The study conducted on Iranian women by Maroufizadeh S et.al. Portrayed that the cause of infertility is likely to be due to male factor, whereas in our study it was mostly due to female cause(46.81%).\(^{18}\) In our study most of the women were housewives (84.64%). In two similar studies done in turkey their results were very alike.\(^{1}\)\(^{20}\)

The FertiQoL mean score in our study is found to be 55.46±11.06. In other comparable studies done in India the mean FertiQoL score was 66.1±13.0.\(^{21}\) Similarly the mean FertiQoL scores of other studies done in China and Turkey are 64.54±16.90 and 66.0±14.5 respectively.\(^{22}\)\(^{23}\) In our study the mean score of Core FertiQoL
(54.92±11.93) and Treatment FertiQoL (56.56±11.89) were similar to that of a study conducted on Taiwanese infertile women where the Core FertiQoL score was 55.12±13.72 and the Treatment FertiQoL score was 56.40±10.96.\(^\text{[24]}\) In a related study conducted on Iranian infertile women the Core FertiQoL score (62.6±16.9) and the Treatment FertiQoL score (58.4±12.9) were slightly higher than our scores.\(^\text{[18]}\) In the FertiQoL scale high scores of the infertile women indicates high quality of life. Examining the results of our study it reveals that the quality of life of 62.92% women is low and 37.08% women is high. In a similar study done in China the infertile women had relatively low FertiQoL scores.\(^\text{[22]}\)

The MSPSS total mean score in our study is 56.02±11.03 which is slightly higher than the total mean score of a study conducted in Turkey (52.89±21.75) with 238 infertile women and lower than another study conducted in Turkey(61.98±16.05) with 456 infertile women.\(^\text{[1]}\),\(^\text{[25]}\) The mean scores of the friends, family and significant other subscale were also more or less similar to that of both studies conducted in Turkey.\(^\text{[1]}\),\(^\text{[25]}\) The mean scores for the perceived social support from family, friends and significant others were markedly moderate and high, and only few infertile women had low perceived social support scores. The social support from family and friends were higher than significant others in our study. While in a study involving 100 pregnant women conceived through ART the family and special person were the most form of perceived social support.\(^\text{[27]}\)

Independent variables like duration of marriage, educational status, occupation, family type, type and duration of infertility were statistically significant (p<0.01) with the FertiQoL subscale scores. In an akin study the educational status, income level, infertility factors were statistically significant and affected the quality of life (p<0.05) of Turkish women.\(^\text{[26]}\) Also with MPSS scores, age at marriage of the infertile women were statistically significant with the score of friends subscale, the occupation of spouse, family type and type of infertility were statistically significant with the family subscale score and the educational status and occupation of spouse were statistically significant with the significant other subscale(p<0.05). Studies conducted in Turkish infertile women...
reveals that the duration of marriage was significant with all the three subscales and working condition of women was significant with family subscale score.[1]

Although few studies have examined the relationship between social support on infertility-related coping, anxiety and stress, only the current study demonstrates that perceived social support from friends, family and significant others can have a powerful impact on quality of life, both directly and indirectly. In our analysis shown in Table 1, we reported strong positive correlations between the subscale scores of both FertiQoL and MSPSS scales. This shows that the FertiQoL subscales scores increase while MSPSS scores also increase. Table 2 revealed the statistically significant hierarchical relationship between the perceived social support thresholds with FertiQoL subscale scores. The FertiQoL scale distinguishes the true impact of infertility quality of life which cannot be achieved by traditional or generic QOL instruments available.[23] The perceptions of patients of social support by friends, family and significant other were at low pace. This shows that it is important to assess social support as perceived by the infertile women as the perceptions of this environment of a patient often predict poor quality of life.

There were a few limitations in our study. First, our results are confined to south Indian population so generalization cannot be done owing to cultural differences. Second, only female partner was included, hence it may not be representative sample because male partner problems were not investigated. Third, the data were obtained solely from the women seeking treatment from one particular infertility setup, which may have inherent bias.

**Conclusion**

Our outcomes propose that the fertility quality of life increases when social support perceived also increases. FertiQoL scores were directly related to the MSPSS scores. Scores were negatively associated with the prolonged duration of infertility and primary type of infertility. Therefore, evaluation of infertile women needs to be
all-inclusive of her assessment on QoL status, social support background and ability to tolerate the process. This way, fertility care can be tailored more specifically to the individual patient in a comprehensive and holistic way.

**Fund & Conflict of interest- nil**

**References**

2. Tasci KD, Ozkan S. UNIVERSITY SCHOOL FOR HEALTH SCIENCES STUDENTS OPINIONS ABOUT INFERTILITY.

Tables & figures:

![Figure 1: Graphical representation of FertiQoL subscale scores – Descriptive Statistics](http://doi.org/10.36295/ASRO.2020.2323123)
Table 1: Baseline characteristics and correlations of FertiQoL and MSPSS subscale scores

<table>
<thead>
<tr>
<th>Tool</th>
<th>Subscale</th>
<th>No of Items</th>
<th>Mean score (Mean±SD)</th>
<th>Spearman’s rho (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Family</td>
</tr>
<tr>
<td>FertiQoL</td>
<td>Total</td>
<td>34</td>
<td>55.46±11.06</td>
<td>0.541**</td>
</tr>
<tr>
<td></td>
<td>Core</td>
<td>24</td>
<td>54.92±11.93</td>
<td>0.667**</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>6</td>
<td>51.37±17.57</td>
<td>0.328**</td>
</tr>
<tr>
<td></td>
<td>Mind-body</td>
<td>6</td>
<td>55.91±20.03</td>
<td>0.244**</td>
</tr>
<tr>
<td></td>
<td>Relational</td>
<td>6</td>
<td>55.48±13.86</td>
<td>-0.071</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>6</td>
<td>56.90±16.32</td>
<td>0.591**</td>
</tr>
<tr>
<td></td>
<td>Treatment</td>
<td>10</td>
<td>56.56±11.89</td>
<td>0.422*</td>
</tr>
<tr>
<td></td>
<td>Environment</td>
<td>6</td>
<td>57.33±16.40</td>
<td>0.98*</td>
</tr>
<tr>
<td></td>
<td>Tolerability</td>
<td>4</td>
<td>55.74±19.41</td>
<td>0.655*</td>
</tr>
<tr>
<td>MSPSS</td>
<td>Total</td>
<td>12</td>
<td>56.024±11</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Friends</td>
<td>4</td>
<td>19.53±4.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Family</td>
<td>4</td>
<td>19.49±5.3</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Significant others</td>
<td>4</td>
<td>17.00±6.8</td>
<td>-</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 2: Relationship of FertiQoL subscale scores with perceived support threshold of MSPSS scores (High/Medium/ Low)

<table>
<thead>
<tr>
<th>Tool</th>
<th>MSPSS (Total social support score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FertiQoL</td>
<td>High (H)</td>
</tr>
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</table>

http://doi.org/10.36295/ASRO.2020.2323123
<table>
<thead>
<tr>
<th>Scales</th>
<th>FertiQoL (Mean ranks)</th>
<th>MSPSS (Mean ranks)</th>
<th>(Significance)</th>
<th>Dunn’s</th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>83.14</td>
<td>132.2</td>
<td>147</td>
<td>11.53</td>
</tr>
<tr>
<td>Core</td>
<td>80.43</td>
<td>131.17</td>
<td>151.73</td>
<td>14.778</td>
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<td>Emotional</td>
<td>71.29</td>
<td>129.84</td>
<td>156.71</td>
<td>21.717</td>
</tr>
<tr>
<td>Mind-body</td>
<td>93.43</td>
<td>129.10</td>
<td>152.52</td>
<td>11.318</td>
</tr>
<tr>
<td>Relational</td>
<td>160.14</td>
<td>139.60</td>
<td>114.55</td>
<td>8.632</td>
</tr>
<tr>
<td>Social</td>
<td>79.43</td>
<td>131.28</td>
<td>151.77</td>
<td>15.32</td>
</tr>
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<td>Treatment</td>
<td>109.2</td>
<td>139.97</td>
<td>126.85</td>
<td>3.87</td>
</tr>
<tr>
<td>Environment</td>
<td>138.21</td>
<td>136.76</td>
<td>125.8</td>
<td>1.20</td>
</tr>
<tr>
<td>Tolerability</td>
<td>94.21</td>
<td>138.14</td>
<td>134.34</td>
<td>6.158</td>
</tr>
</tbody>
</table>

<sup>*<sup>a</sup>p value obtained from Chi-square tests or Kruskal-Wallis</sup>

<sup>*<sup>b<sup>When three group tests were significant, results were followed up with paired comparisons, adjusted p statistically significant value obtained</sup></sup>

Table 3: Association of Independent variables with FertiQoL and MSPSS scores
Siddarth et al. (2020): Relationship between perceived social support and QOL among Indian infertile women

<table>
<thead>
<tr>
<th>of spouse</th>
<th>skilled</th>
</tr>
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<tbody>
<tr>
<td>Family type</td>
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</tr>
<tr>
<td>Nuclear</td>
<td>6046**</td>
</tr>
<tr>
<td>Joint</td>
<td></td>
</tr>
<tr>
<td>Type of infertility</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>10710**</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Duration of infertility</td>
<td></td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>5417.5**</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td></td>
</tr>
</tbody>
</table>

*p value significant less than 0.05 using Mann-Whitney U Test

**p value significant less than 0.01 using Mann-Whitney U Test