Psychological Aspects in Infertility: A Comparative Study

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ABSTRACT: Infertility is defined as the failure to achieve a clinical pregnancy even after one year of regular unprotected sexual intercourse. Epidemiological data suggest that approximately 80 million people worldwide are infertile. The present study was conducted to explore the difference between infertile group and a matched control group in various psycho social variables related to the diagnosis of infertility. The study also attempted to identify the most important predictor variables which determine the quality of life of participants. A sample of 400 participants (100 fertile couples and 100 infertile couples) was included in the study. The data obtained were analysed using t-test and step wise regression. Results revealed that there exist significant difference between the two groups in majority of variables.

Keywords: Infertility, quality of life, predictors of quality of life.

I. INTRODUCTION

Infertility is doubtless a crisis and an event that causes psychological stress (Leiblum& Green field, 1997; Brovich& Fisher, 1998; Burns & Covington, 1999). Its consequences can be seen at various levels, evidenced by high levels of personal suffering and social repercussions. Infertility and its medical aspects are stress inducing conditions, and its consequences can be seen at various levels. Difficulties in tolerating this psychological, physical, and social suffering may lead to treatment dropout (Olivius, Friden, Borg, & Berg, 2004; Rajkhowa, McConnel, & Thomas, 2006; Smeenk, Verhaak, Stolwijk, Kremer, &Braat, 2004). Infertility is increasing at a dramatic rate across all age groups. It is a complex life crisis, psychologically threatening, and emotionally stressful (Menning, 1980). Being labelled as infertile is devastating to the couple. It can upturn the life of affected individuals completely. One's self- esteem, dream for the future, and relationship with others, may all get affected. Childlessness is generally a tragedy and can be a cause of marital upset as well as of personal unhappiness and ill health. A lack of agreement or incongruence between partners over their relationship concerns and the need for parenthood has been reported to be associated with low marital satisfaction and depression (Peterson, Newton, & Rosen, 2003).

Health- related quality of life is a multidimensional concept that includes domains related to physical, mental, emotional and social aspects related to a disease or its specific therapeutic approaches(Colwell, Mathias, Pasts, Henning, &Steege, 1998).It can also be a combination of life crisis, identity crisis and a chronic illness (Diamond, Kezur, Meyers, Scharf&Weinshel, 1999).Infertility can be considered as a chronic illness which has adverse effect on mental, communicational, and relationship difficulties (Andrews, Abbey &Halman, 1992). Infertility and its treatment protocols may have negative effects on quality of life of infertile couples (Fekkes et al., 2003).

The "Infertility epidemic" results in a variety of psychological issues which calls for the attention of health care and mental health professionals. However, at present, most of the attention is focused on the physical aspects of infertility. Here, an attempt is made to explore the impact of the diagnosis of infertility on the life of the couples. For this purpose, it was decided to study in detail the extent of difference between infertile couples and a matched control group in various indices of adjustment as well as overall quality of life.

OBJECTIVES
1 To explore the extent of difference between infertile and a matched control group in various psycho-social variables.
2 To identify the most important predictor variables which determine the quality of life of participants.

HYPOTHESES
The major hypotheses formulated for the study were the following.
I The fertile group would differ significantly from the infertile group in all the dependent variables selected for the study (viz., Marital Adjustment, Sexual Adjustment, Personal Adjustment, Emotional Adjustment, Social Adjustment, Quality of Life, Anxiety Proneness (freedom from), Positive thinking, Rationality, Internal locus of control, Positive beliefs, Resilience, Physical Coping, Social coping, and Emotional Coping).
II There will be significant predictor variables for Quality of life.

SAMPLE
The sample comprised of 100 infertileand 100 fertile couples. Both the fertile and infertile couples were matched with respect to age, education and socioeconomic status. Data for patient group (couples with primary infertility) was collected from the infertility clinic, and the control group was collected from the general population.

TEST MATERIALS/ INSTRUMENTS
The study made use of the following materials:
1. **Inventory on Marital and Sexual Adjustment**(Jisha& Thomas, 2012): Was used to assess the marital and sexual adjustment of the couple.
2. **Psycho Social Adjustment Inventory**(Jisha& Thomas, 2012): Was used to assess the personal, emotional and social adjustment of the couple.
3. **An Inventory on Quality of life**(Jisha& Thomas, 2012):Was used to measure the overall quality of life of couple
4. **An Inventory on Anxiety Proneness (freedom from)**(Jisha& Thomas, 2012): Was used to measure anxiety in couples. Higher scores indicated lack of anxiety.
5. **Inventory on Beliefs**(Jisha& Thomas, 2012):Was used to measure Positive thinking, Rationality, Locus of control, and Positive beliefs.
6. **Resilience scale**(Narayanan, 2008): Was used to assess the resilience of individual participants.
7. **Coping strategies**(Jisha& Thomas, 2012):Was used to assess the specific styles of coping with stress in three different domains, viz., physical, social, and emotional.

Procedure for Test Administration
The researchers obtained permission from the authorities of the infertility clinic. After that the prospective participants were met individually by the researchers and informed consent were obtained from them for their participation. Informed consent were also obtained from the members of the control group before tests were administered to them.

II. STATISTICAL ANALYSIS
To find out the differences between fertile and the infertile group, t-test were conducted in each of the variable under study.
Stepwise regression analysis was found suitable for the present investigation to find out the predictor variables which determine the quality of life of participants.

III. RESULTS
The total sample consisted of 400 (200 fertile and 200 infertile) subjects. Results of t- test for each of the 15 study variable are presented in table1.

The results given in table1show that there exist significant differences between fertile and infertile group in their Marital adjustment, Personal adjustment, Quality of life, Physical and Emotional coping and Rational thinking. And there were no significant difference between fertile and infertile groups in their scores on Sexual adjustment, Emotional adjustment, Social adjustment, Lack of anxiety, Social coping, Positive thinking, Internal locus of control, Positive beliefs and in Resilience.

Details of t-test done on mean scores on different dimensions of adjustment (marital, sexual, personal, emotional and social) showed that, there were significant difference between fertile and infertile groups on marital adjustment and personal adjustment. The mean of marital adjustment score for fertile M= 114.18 with SD 13.7584 was lower than the mean score of infertile group (M=117.78; SD=12.228). The mean of personal adjustment score for fertile M=43.3 with SD 5.4992 was also lower than the mean score of infertile group (M=44.48; SD=5.84). From the result we can conclude that, infertile couples have better marital (t=-2.766; P<0.01) and personal adjustment (t=-2.08; P<.05) than the fertile group.

The mean values of Quality of life, given in table1shows that the infertile group scored significantly lower than the control group. The mean of Quality of life score for fertile group is M=63.255; SD=9.7357 and

the mean for infertile group is M=60.525; SD= 8.966. This indicate that infertile couples have low score for quality of life than fertile (t=2.917 P<.01). The infertile couples reported poor quality of life despite having a better marital adjustment.

Table 1 indicates that the mean values of the fertile and infertile groups in the area of anxiety are M=60.9; SD=7.988 and M=61.675; SD=8.525 respectively and that there is no significant difference between the two group (t=-0.938; P>.05) in this variable. From the literature it is clear that infertile individuals experience greater pressure due to their infertility. The medical aspects may lead them to be more prone to anxiety. And it is also evident from literature that infertile couples did not suffer more from general complaints than the normal population (Visser et al., 1994).

The t- values presented in table1indicate that there is significant difference between fertile and infertile group in two domains of coping. i.e., physical coping and emotional coping. The mean of physical coping score for fertile, M= 29.225 with SD=4.79 was lower than the mean score of infertile group M=30.185; SD=3.974. The mean of emotional coping score for fertile (M=50.775 with SD=6.911) was also lower than the mean score of infertile group (M=54.92; SD=6.89). The results showed that infertile couples engage more in physical (t= -2.181; P<.05), emotional coping (t= -6.013; P<.01). For social coping, (t= -1.867; P>.05), there is no significant difference between fertile and infertile groups.

The t- value presented in table1 show that there exist significant difference between fertile and infertile groups in rationality, which is considered as one dimension in the variable belief. The other dimensions such as positive thinking (t=0.535; P>.05), Internal locus of control (t=-1.11; P>.05) and positive beliefs (t=-0.457; P>.05), have no significant difference between fertile and infertile group. The mean score for rational thinking for fertile group M=4.77 with SD 1.455 and for infertile group M=5.075 withSD1.490. This indicate that there is significant difference (t= -2.071; P<.05) between the two groups in rational thinking. The results clearly indicate that infertile groups showed high rationality than the fertile group.

As indicated in table1 the mean resilience score of the fertile group is 107.08 (SD=17.54) and that of the infertile group is 108.25 (SD= 17.751). This indicated that there is no significant difference (t= -0.663; P>.05) between the two groups in resilience. If infertile couples can accept and give positive meaning to their barrenness and engage in active alternatives and above all if they do not cut themselves off from social engagements, they can cope up the situation easily (Lechner et al. 2007).

The results given in Table 2 shows that the variables, namely, Positive thinking, Marital adjustment, Lack of anxiety proneness, fertility status (fertile/infertile), Social adjustment, physical coping and Resilience were the best predictors of QOL.

Positive thinking was the first variable entered into the regression equation, which alone contributed 44 percent of variance in QOL. The multiple correlation was 0.663 and R^2 was 0.44. The beta value obtained for positive thinking was 0.186. The obtained beta value was positive and it indicated the fact that high score in positive thinking was associated with high score in QOL.

Marital Adjustment was the second variable entered into the equation. The beta value obtained for marital adjustment was 0.288 which indicate a positive relationship between marital adjustment and QOL. The regression analysis also showed that marital adjustment contributed an additional 10.6 percent of variance in QOL along with the 44 percent variance made of positive thinking. The multiple correlation (R) was 0.739 and R^2 was 0.546. The R^2 showed that positive thinking and marital adjustment together contributed 54.6 percent of variance in QOL.

The third variable entered into the regression equation was Lack of Anxiety Proneness. The beta value in the case of Lack of Anxiety Proneness was 0.223. The positive beta value ensured that high QOL was associated with Lack of anxiety proneness. The obtained multiple correlations (R) were 0.783 and R^2 was 0.613. The R^2 showed that the variables positive thinking, marital adjustment and lack of anxiety together contributed 61.3 percent of variance in QOL. It means that Lack of Anxiety contributed an additional 6.7 percent of variance in QOL.

Fertility status was the next variable entered into the regression equation. The multiple regression (R) was 0.808 and R^2 was 0.654. The R^2 showed that positive thinking, marital adjustment, lack of anxiety and fertility status together contributed 65.4 percent of variance in QOL. This showed that fertility status contributed an additional 4.1 percent of variance in QOL.

The beta value obtained for fertility status was -0.208. It is clear from the result that, fertility status affects quality of life. Social adjustment was the fifth variable entered into the regression equation. The multiple regressions (R) were 0.824 and R^2 was 0.678. The R^2 showed that positive thinking, marital adjustment, Lack of Anxiety, fertility status, and social adjustment together contributed 67.8 percent of variance in QOL. This showed that social adjustment contributed an additional 2.4 percent of variance in QOL. The beta value obtained for social adjustment was 0.158. The positive beta value showed that high score in QOL was associated with high score in social adjustment.

The sixth variable included in the regression equation was coping physical. The beta value obtained in the case of physical coping was 0.106. The positive value showed that both coping physical and QOL were in the same direction. That is, high physical coping was associated with high QOL. The multiple correlation (R) was 0.832 and the R^2 was 0.692. The obtained R^2 showed that 69.2 percent of variance in QOL was jointly contributed by positive thinking, marital adjustment, freedom from anxiety, fertility status, social adjustment and physical coping. That is physical coping, contributed 1.4 percent of addition variance in QOL.

The final variable entered into the regression equation was Resilience. The beta value for resilience was 0.133. The positive value indicated the positive relationship between QOL and resilience. Resilience contributed an additional 0.8 percent of variance in QOL. That is., resilience raised the R^2 from 0.692 to 0.7. The multiple correlation (R) was 0.837. The final R^2 showed that the variables positive thinking, marital adjustment, lack of anxiety proneness, fertility status, social adjustment, coping physical and resilience together contributed 70 percent of variance in QOL.

The multiple regression analysis showed that, in the linear combination made by the seven significant predictor variables of QOL, the most significant unique contribution was made by Marital adjustment, followed by Freedom from anxiety and Fertility status. It is true, because a good marital adjustment results in good QOL.

IV. DISCUSSION

The present result supports the findings of Weaver et al. (1997), Hammarberg et al. (2001) Sundby et al. (2007) and Wischmann et al. (2012). A probable reason for high marital and personal adjustment in infertile couples may be infertility may function as a cohesion factor for couples. Facing up jointly to the needs of infertility treatment and other aspects of life appears to 'weld' the couple together (Repokari et al., 2007).

The t- values presented in table 1 indicate that there is no significant difference between fertile and infertile groups in three variables, which comes under the dimensions of adjustment. Contrary to what is expected, there is no significant difference between fertile and infertile groups on sexual adjustment (t= 0.675; P>.05), emotional adjustment (t=-1.543; P>0.5) and social adjustment (t= -0.305; P>.05). Findings of Galhardo et al. 2011 and Wischmann et al. (2012) have also proved stable sexual relationship in infertile couples.The present result is also consistent with the findings of Lopes and Leal (2014) and Verhaak et al. (2007), who have found that infertile couples are emotionally well adjusted. This may be developing new life goal strategies rather than persisting in attempts to get pregnant. From literature it is evident that having a good personality disposition, a high level of self-esteem, who are satisfied with their job and relationship with their partner dealt effectively with infertility condition and its treatment.

The results obtained in the present study are consistent with the findings of several previous studies which had shown that infertility has a negative impact on couple's life. Dillu, Sheoran and Sarin (2013); El-Messidi et al. (2004); Fekkes et al. (2003); Abbey et al. (1994). Children help to relieve the tedium of everyday life of parents by providing a feeling that something new and different is happening every day. They are also capable of bringing profound meaning and purpose into people's lives (Groat et al., 1997). Achieving parenthood allows one to achieve adult status, social identity, fulfil gender-role and to complete the marriage. Thus, parenthood is encouraged and celebrated and the inability to fulfil these societal expectations can be devastating. Across the ages, people struggling with infertility have reported experiencing stigma as well as a myriad of negative feelings surrounding their inability to procreate (Miall, 1986). Desai, Shrinivasan, andHazra (1992) have reported that infertility is a life crisis with invisible losses. These stresses and strain may account for the deterioration in the quality of life of infertile couples.

People use different methods to cope with stress. Gender, personality, people's life experiences and circumstances influence the mode of coping (Ghosh, 2015). Infertile couples use different types of coping strategies to cope with the demands of treatment. Literature has shown that problem focused and emotion focused coping are useful in distress. Berghuis and Stanton, (2002) have reported that coping strategies employing positive reinterpretation, emotional processing, & emotional expression are linked with lower depressive symptoms. Emotional regulation and expression seem to be important in reducing infertility- related stress (Austenfield& Stanton, 2004). Problem oriented coping in this particular context we can say physical coping, motivates individuals to seek more information about their problems and do something active to alleviate their circumstances (Nikrahan et al., 2011). By using physical coping, women are less likely to blame themselves and experience more positive self- perception. So using coping strategies helps couples to handle the distress.

A lower score in using coping strategies in fertile group may be long hours of employment and different family roles curtail time for exercise. Parenting and stress often go together. But there are options available for every parent to effectively reduce and manage their stress.

Rational thinking in this context can be considered as a source of buffer against distress. Rational actions, meaning and meaning making, wishful meaning, faith, self-adaptation are helpful in the context of stressful life events. Infertility is such a condition which needs constant attention and decision makings. When

to start treatment, to whom should be consulted, how and when to start the procedures, making the treatment process sink with the daily hassles etc. In such a way it is not surprising that infertile group scored better in rational thinking.

Predictors of quality of life

An extensive literature documents the relationship between successful marriage and higher levels of subjective well- being (Berschied& Reis, 1998; Diener& Seligman, 2004; Myres, 1999; Myres, 2000; Myers &Diener, 1995; Woods et al., 1989). Human beings have a basic need to belong (Baumeister&Learys, 1995). Marriage is one major vehicle for fulfilment of this basic need. Marriage has the potential to provide companionship, intimacy, love, affection and social support in times of crisis. The role of spouse and parent may also provide opportunities for personal growth and total life satisfaction (Berschied, 2003; Deci& Ryan, 1991). This vital relation helps one for their marital quality and is often used in a sense of subjective happiness and quality of life.

Achieving parenthood is associated with better quality of life. Children provide a sense that something new and different is happening, which may help to relieve the tedium of everyday life. Playing them can give parents the feeling of relieving their own childhoods. In sum, children are capable of bringing profound meaning and purpose into people's lives (Groat et al., 1997).Thus fulfilment of achieving parenthood affects one's quality of life.

Freedom from anxiety as predictor of quality of life is consistent with the findings of several studies which had shown that anxiety has been associated with diminished quality of life (Bourland et al.,2000). Quality of life refers to subjective evaluation of lives. Therefore it encompasses happiness, life satisfaction and lack of negative mental states.

V. CONCLUSION

The study highlighted that infertility has definite negative impact on the quality of life of couples. This understanding may be useful for health professionals in the psychological assessment of infertile couples and to plan more effective interventions to infertile couples.

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Table 1 Details of t-test done on scores obtained by the fertile and infertile groups on different study variables

Variables	Group	N	Mean	Std. Deviation	t-values	Sig.
Marital adjustment	Fertile	200	114.18	13.75842	-2.766	0.006
	Infertile	200	117.78	12.22863		
Sexual adjustment	Fertile	200	54.86	7.25836	0.675	0.5
	Infertile	200	54.37	7.26339		
Personal adjustment	Fertile	200	43.3	5.4992	-2.08	0.038
	Infertile	200	44.48	5.84383		
Emotional adjustment	Fertile	200	45.655	6.34644	-1.543	0.124
	Infertile	200	46.575	5.54963		
Social Adjustment	Fertile	200	60.52	8.59354	-0.305	0.761
	Infertile	200	60.77	7.79557		
QOL	Fertile	200	63.255	9.7357	2.917	0.004
	Infertile	200	60.525	8.96612		
Lack of anxiety proneness	Fertile	200	60.9	7.98806	-0.938	0.349
	Infertile	200	61.675	8.52542		
Coping Physical	Fertile	200	29.225	4.79052	-2.181	0.03
	Infertile	200	30.185	3.97489		
Coping Social	Fertile	200	23.43	6.02216	-1.867	0.063
	Infertile	200	24.49	5.31045		
Coping emotional	Fertile	200	50.775	6.91109	-6.013	0
	Infertile	200	54.925	6.8918		
Positive thinking	Fertile	200	28.4	4.32592	0.535	0.593
	Infertile	200	28.17	4.26639		
Rationality	Fertile	200	4.77	1.45523	-2.071	0.039
	Infertile	200	5.075	1.49013		
Internality	Fertile	200	10.975	1.80573	-1.11	0.268
	Infertile	200	11.175	1.79737		
Positive beliefs	Fertile	200	44.145	5.97263	-0.457	0.648
	Infertile	200	44.42	6.05034		
Resilience	Fertile	200	107.08	17.54	-0.663	0.508
	Infertile	200	108.25	17.751		

Table 2 Predictors of Quality of life

Variable	R	R²	R² change	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)				-8.884	2.766		-3.212	0.001
Positive thinking	0.663	0.44	44	0.408	0.086	0.186	4.759	0
Marital adjustment	0.739	0.546	10.6	0.207	0.025	0.288	8.27	0
Lack of Anxiety proneness	0.783	0.613	6.7	0.255	0.045	0.223	5.628	0
Fertility status	0.808	0.654	4.1	-3.927	0.534	-0.208	-7.358	0
Social adjustment	0.824	0.678	2.4	0.182	0.041	0.158	4.428	0
Coping Physical	0.832	0.692	1.4	0.227	0.069	0.106	3.297	0.001
Resilience	0.837	0.7	0.8	0.071	0.022	0.133	3.293	0.001