CHAPTER V

Discussion
DISCUSSION

The present study is aimed at assessing the efficacy of REBT on depression and irrational beliefs among infertile women. For better clarity the results are discussed under the following section.

I. Quantitative Analysis for objective-1 and objective-2

II. Qualitative Analysis

III. Implication of the study

IV. Strength of the study

V. Weakness of the study

VI. Suggestions for future study

I. QUANTITATIVE ANALYSIS

Discussion of results for objective-1 and objective-2 will be done separately for demographic and outcome variables.

Objective-1 is to compare the level of depression and irrational beliefs among fertile and infertile women.

Objective-2 is to study the effect of REBT on depression and irrational beliefs among infertile women.

1- Quantitative analysis (for objective-1)

i. Analysis of Socio- demographic data

ii. Analysis of Outcome variables, To compare the level of depression and irrational beliefs among fertile and infertile women

2- Quantitative analysis (for objective-2)

i. Analysis of Socio- demographic data

ii. Analysis of Outcome variables, To study the effect of REBT on depression and irrational beliefs among infertile women.
3- **Quantitative analysis (for hypotheses):**

Following hypothesis were proposed in the present study and discussed below.

1- Fertile and infertile women differ in the level of depression.

2- Fertile and infertile women differ in the level of irrational beliefs.

3- REBT reduce depression in the infertile women.

4- REBT reduce irrational beliefs in the infertile women.

1- **Quantitative analysis (for objective-1), To assess the level of depression and irrational beliefs among fertile and infertile women**

For objective 1, 50 fertile and 50 infertile women were selected and were administrated BDI-II and SGABS. Discussion of the result on demographic and outcome variables is presented below.

i. **Analysis of Socio- demographic data (for objective-1)**

It was essential to establish the homogeneity of the sample on various variables at the base line so that valid comparison can be made for objective-1. The analysis showed that both fertile and infertile women were comparable on all the demographic characteristics.

There was non significant difference between fertile and infertile women at base line level on mean Age (Table 4-1-1, t=1.39; df=1.98; p<0.17); Educational background (Table 4-1-2, C.C=0.30, p<0.06), Annual income (Table 4-1-3, CC=0.22, p<0.09); Type of marriage (Table 4-1-4; (CC=0.42; p<0.54); Duration of marriage (Table 4-1-
ii. Analysis of Outcome variables (for objective-1)

Comparison of mean scores of the fertile and infertile women on the level of depression revealed a significant difference in the scores on BDI-II. Table 4-2-1 shows Mean score of 27.28 with SD of 14.91 for fertile women, whereas mean score for infertile women was 32.7 with SD of 7.51. Comparison of mean score indicating that infertile women show more depression than fertile women. Further, Analysis of the data using independent sample ‘t’-test shows that there was a significant difference between fertile and infertile women on the level of depression (t= 2.3; df=98; p<0.05).

The other objective was to compare the level of irrational beliefs among fertile and infertile women. Mean irrational beliefs score for fertile women was 66.70 with SD 11.03, whereas for infertile women it was 75.88 with SD of 10.29 (Table 4-2-2). Mean score comparison between fertile and infertile women indicate that infertile women show more irrational beliefs. Obtained data on SGABS between fertile and infertile women was analyzed using independent sample t-test (Table 4-2-2). Obtained t value indicates that there was significant difference between fertile and infertile women on the level of irrational beliefs (t= 4.31; df=98; p<0.01).

The significant difference observed on the level of depression and irrational beliefs between fertile and infertile women indicates that fertile and infertile women differ in the level of depression and irrational beliefs. Infertile women show high depression symptoms and irrational beliefs than fertile woman (objective-1).

Result for higher level of depression in infertile women is discussed with result of first hypothesis.

Nelson et al., (2008) used Center for Epidemiological Studies Depression Scale (CES-D) for depression and found that 19% of infertile women had moderate and 13% had severe depression. Drosdzol et al., (2009) found that 35.4% infertile women scored above the cut-off score for severe symptoms of depression, compared with 19.47% of fertile women. They found female gender, age over 30 years with lower level of
Education and lack of occupational activity are associated with male infertility. Further couple with 3-6 years of infertility period is a risk factor leading to depression and anxiety among infertile couples.

The complicated process involved in infertility has emotional and affective dimensions for the individuals. The stressful condition of the infertile period, the type of treatments, defense mechanisms of individuals use for coping with the problem, emotional, psychological and social supports, the stressful condition created by the high cost of modern treatment procedures called Assisted Reproductive Technology (ART), continual visits of physicians, continual references to infertility clinics which are sometimes situated in other places requiring long journeys, doing costly tests, wasting time, explaining personal life details to the physician, planning a definite sexual intercourse timetable as by advised physician, frustration caused by the inefficiency of treatment procedures and thinking of not having a child, the pressures of family and society to have a baby as soon as they could embrace to explain the problem to everybody, continual comparison with fertile couples, maladjustments and possibility of separation or divorce, not having a complete knowledge about the causes of infertility, having the feeling of being a victim, not having a sufficient knowledge of the new treatment methods and not accepting the new methods such as having a child from other person’s uterus or sperm or using a rented uterus are considered as cases which cause stresses and conflicting emotions and in many cases they lead to anxiety, depression and disturbed marriage relations among couples.

2- Quantitative analysis (for objective-2), To study the effect of REBT on depression and irrational beliefs among infertile women.

For objective-2, 50 infertile women who fulfilled the cut of score criteria are used in the present study (In the present study score of 20 and above on the total score of BDI-II and, 60th percent and above on the SGAB was used as cut of score criteria for selecting infertile women). Out of 50 infertile women 40 infertile women were selected randomly and assigned them into experimental (N=20) and control (N=20) groups. The experimental group infertile women received 24 sessions of Rational Emotive Behavior Therapy (REBT) intervention. The control group did not receive
any intervention but they were undergoing medical treatment for infertility. Result of the pre-assessment analysis is discussed below.

i. Analysis of Socio-demographic data (for objective-2)

In any intervention/treatment related studies it is necessary to match the groups for homogeneity on relevant variables. This will help the researcher to make valid comparison between pre and post assessment results. Any change observed in post assessment score is due to treatment/intervention only. In this section discussion on matching randomization of samples at pre assessment level is presented below.

Analysis of demographic data show non significant difference between experimental and control groups at base line on mean Age (Table 4-3-1, t’=0.64, df =38, p<0.52); Educational background(Table 4-3-2, CC=0.18, p<0.72); Annual income(Table 4-3-3, CC=0.21, p<0.15); Type of marriage(Table 4-3-4, CC=0.05, p<0.74); Food habit (Table 4-3-5, CC=0.00, p<1.00); Cigarette smoking (Table 4-3-6, CC=0.14, p<0.38); Sexual satisfaction (Table 4-3-7, CC=0.15, p<0.33); Duration of marriage (Table 4-3-8, ‘t’=0.659, df =38, p<0.51); Years of attempt to conceive(Table 4-3-9, t’=-0.17, df =38, p<0.87); Years of infertility treatment (Table 4-3-10;’t’=-0.56, df =38, p<0.58) and Cause of infertility(Table 4-3-11, CC=0.2, p<0.42) indicating homogeneity of groups at pretreatment level.

ii. Analysis of Outcome variables (for objective-2)

Comparison of the pre-assessment (baseline) scores for the experimental and control groups on outcome variables (depression and irrational beliefs) revealed non significant difference in pre-assessment scores. Mean score for experimental group was 32.85 with SD of 7.06 ,whereas mean score on BDI-II for control group was 34.85 with SD of 7.26 (4-4-1).Analysis of the data using independent sample ‘t’-test shows that there was a non significant difference between experimental and control groups on level of depression (t=0.88, df=38, p<0.38).

Further Mean irrational beliefs score for experimental group was 79.85 with SD 7.07, whereas for control group it was 79.30 with SD of 6.57(Table 4-4-2). Obtained data on SGABS between experimental and control groups was analyzed using independent sample t- test (Table 4-4-2). Obtained t value (t= 0.25; df=38, p<0.80) indicates that
there was no significant difference between experimental and control groups on the level of irrational beliefs. Both groups were comparable and matched for homogeneity. The non significant difference observed on the outcome variables at the pre-assessment indicate that experimental and control groups were matched in the level of depression and irrational beliefs.

Results of different studies about relationship of age and education with depression were not similar. According to Beutelet al., (1999) study age and education level have no significant relationship with depression. Another study showed that there was positive correlation between them (Domar, Broome, Zuttermeister, Seibel, & Friedman, 1992).

Facchinetti, Volpe, Matteo, Genazzani, & Artini (1997) found that having a job may reduce stress from In Vitro fertilization (IVF) and they found depression was more in homemakers than women who are having a job but the difference was not significant. It seems that being working infertile women decreases psychological stress.

The risk of depressive symptoms is lower when a woman thinks that the problem is a male factor. This type of cultural view has been observed in countries with family-based societies such as India culture. Based on previous researches, Wright et al., (1991) and (Tarlatzis et al., 1993) infertile women showed higher rates of psychiatric symptoms than their partners, especially when the infertility factors are related to the female or for unexplained factors.

One of the characteristics of infertile couples is that women are habitually more affected by infertility than men (Franco et al., 2002). Depression increases with duration of infertility and there was a trend of increasing psychological stress with lengthening of infertility time. Patients who had infertility for an intermediate to a long time showed less symptoms than those who are in their first stage of their problem (Seok Kee, Jung, & Lee, 2000).

But other studies showed that psychological distress in infertile women increases with time (Berg & Wilson, 1991) and depression peaks between the second and third year of infertility and does not return to normal range until after 6 years of infertility (Domar et al., 1992). Women with 2-3 years of infertility suffered from more
depression compared with those who experienced less than one year of infertility (Domar et al., 1992).

In a study (Khademi, Alleyassin, Aghahosseini, Ramezanzadeh, & Abhari, 2005) there was a positive relationship between infertility duration and depression scores. It suggested that at an early stage of infertility, if the woman is hopeful about the results of medical intervention and who are receiving less positive support from the physicians and those who experience social and family stresses indicated low mental stress and depression during the first year of infertility. A long period of infertility and repeated referral to the physicians, the infertility would gradually change to a chronic problem: Thus confronted with this problem the infertile women would experience monthly cycles with hope and hopelessness, (Dhaliwal, Gupta, Gopalan, & Kulhara, 2004) they observed that severity of stress and depression would decrease but would never disappear. It was report that in the first three years (1–3) depression is in its lowest limit and after 4 years it becomes worse. The results show that having a child is very important for Indian people, therefore infertile women showed high level of depression compare to fertile women.

3- Quantitative analysis (for hypothesis):

In the present study as mentioned earlier there are two objectives. Objective-1 had two hypotheses and objective-2 had two hypotheses.

1- First hypothesis of the study-Fertile and infertile women differ in the level of depression.

Table 4-2-1 showed mean score for fertile women on BDI-II was 27.28 with SD of 14.91, whereas mean score for infertile women was 32.7 with SD of 7.51. Comparison mean difference between fertile and infertile women on level of depression revealed significant difference on level of depression. Analysis of the data using independent sample ‘t’-test shows that there was a significant difference between fertile and infertile women on level of depression (t= 2.3; df=98; p<0.05). The significant differences of 5.42 in the mean values on the level of depression between fertile and infertile women indicate that infertile women experience more depression symptoms than fertile women. Findings of the present study are consistent with previous studies such as Al Homaidan and Turki (2012); (Ashkani, Akbari, &
Heydari, 2006); (Chen, Chang, Tsai, & Juang, 2004); (Drosdzol & Skrzypulec, 2009); The first hypothesis of the study i.e. fertile and infertile women differ in level of depression is accepted.

In fact, infertility creates a critical situation that threatens the emotional and psychological life of the individual. The question that arises in this regard is as follows: Does the emotional and psychological problems lead to infertility? Or does the infertility lead to emotional and psychological problems? In both cases, it is obvious that infertility is a crisis that leads to a psychological imbalance, especially when a possible and quick solution is not found for it (Saki, Saki, Jenani, & Asti, 2005). The psychological reactions of the infertile women are investigated by the researchers and studies revealed of despair, sadness, denial (Hemati Gorgani, 2001); sense of guilt (Hemati Gorgani, 2001; Saki et al., 2005), Depression (GarmazNejad, 2001; Hemati Gorgani, 2001); anxiety (GarmazNejad, 2001; Rayka, 2001); disappointment and hopelessness (Sadri Sayar, 2005; Saki et al., 2005; Seif, 2001); reduction of self esteem (Dehghanpour, 2001; Mirzamani, 2001); changes in the individual’s mental picture and feeling a change in the self identity when compared with fertile women (Younesi, Akbari Zardkhane, & Behjati ardekani, 2005); loosing life control (Dehghanpour, 2001; Nilforooshan, Ahmadi, Abedi, & Ahmadi, 2005); change in sexual identity (Khooshabi, 2001); marriage maladjustment (Dehghanpour, 2001; Mirzamani, 2001); sense of disqualification (GarmazNejad, 2001); life dissatisfaction (Seif, 2001); suicide (Dehghanpour, 2001) and suspicion (Mirzamani, 2001).

Depression is regarded as general consequences of infertility and has a significant association with infertility. Studies show that around 40.8% and 86.8% of infertile women show depression and anxiety respectively (Ramezanzadeh et al., 2004).

Noorbala et al., (2007) used Beck's depression questionnaire to study the prevalence of depression in a group of infertile couples (319 couples). The Findings showed that 48% of women suffer from mild to severe degree of depression (30% suffered from mild, 12.5% from moderate, and 5.3% from severe depression).
The first hypothesis was fertile and infertile women differ in the level of depression. Based on the findings, infertile women show high degree of depression than fertile women. In Indian culture, family status especially childbearing is very important and valuable. Having a child stabilizes family and increases marital satisfaction. In many culture including Indian culture and society, negative attitude to infertility is highly prevalent. Absence of children may cause marital problems such as divorce or even second marriage. Intervention of relatives especially husband's family, negative attitude and behavior of neighbors (family, friends, neighbors, etc.) causes psychological problems for infertile women leading to experience of depression.

2- Second hypothesis of the study-Fertile and infertile women differ in the level of irrational beliefs.

The second hypothesis of the study was, fertile and infertile women differ in the level of irrational beliefs. Obtained data on SGABS between fertile and infertile women was analyzed using independent sample t-test (Table 4-2-2). Mean irrational beliefs score for fertile women was 66.70 with SD of 11.03, whereas for infertile women it was 75.88 with SD of 10.29. A mean difference of 9.18 score between fertile and infertile women indicate that infertile women show more irrational beliefs than fertile women. Comparison of the mean scores for the fertile and infertile women on level of irrational beliefs (Table 4-2-2) revealed significant difference in irrational beliefs ($t=4.31; df=98; p<0.001$). The significant difference observed on this outcome variable indicates that fertile and infertile women differ in the level of irrational beliefs.

Katiraei et al., (2010) studies irrational beliefs between fertile and infertile women. Those who were refer to Reproductive Health Research Center. Using Jones irrational beliefs, the investigation showed that there was significant difference between fertile and infertile women on the subtests of Jones irrational belief namely: Demand for Approval, High self Expectation, Blame proneness, Frustration Reactive, Emotional Irresponsibility, Anxious over concern, Problems avoiding and no difference was observed in other subtests which includes: Dependency, Hopelessness, Perfectionism. In this study obtained results showed that infertile women use more irrational beliefs than fertile women (Katiraei, Haghighat, Bazmi, & Bazmi, 2010).
Irrational beliefs are defined as a combination of psychological process and thought content. Irrational beliefs are believed to consist of four categories of cognitive processes: (1) demandingness; (2) awfulizing/catastrophizing; (3) frustration intolerance; and (4) global evaluation/self-downing (GE/SD). Each category covers various content areas for e.g., achievement, affiliation, comfort (Walen, DiGiuseppe, & Dryden, 1992). The counterparts of irrational beliefs are rational beliefs, which cover the same content areas, but involve different cognitive processes; that is, (1) preferences rather than demandingness; (2) the appropriate evaluation of the negative aspects of a situation rather than awfulizing; (3) statements of frustration tolerance rather than frustration intolerance; and (4) evaluation of specific actions and acceptance of fallibility (non GE/SD) rather than global evaluation of human worth and self-downing (David, Lynn, & Ellis, 2010). For centuries, philosophers and scientists have recognized the relationship between psychological factors and physical health. Both cognitive (e.g., response expectancies) and emotional (e.g., depression, anxiety) variables have been shown to contribute to physical sensations, symptoms, and suffering (Kirsch, 1990; Trief, Grant, & Fredrickson, 2000).

REBT holds that it is not the activating events (infertility) infertile women experience that cause the suffering, but rather infertile women is beliefs about those events (infertility) that causes stress. For example two infertile women can experience the same activating event (infertility), and yet respond completely differently due to the discrepant beliefs they hold.

Proposed hypothesis of the present study was justifies the application of REBT theory to understanding the effect of REBT on depression and irrational beliefs among infertile women, where the activating event (e.g., being diagnosed with an infertility) may be impossible to control. For example, consider two infertile women that have been diagnosed with infertility, and are scheduled to receive medical for infertility treatment. Person A might irrationally think in response to this event, ‘‘This is AWFUL! Infertility will ruin my life! I can’t stand it,’’ whereas Person B might rationally think, ‘‘I wish I didn’t have to deal with this treatment, but it is only a part of my life. It will not dominate 100% of my life. And even though I don’t like having to go through this, I will be able to stand it’’. Based on their varying beliefs, these two infertile women (Persons A and B) might experience very different emotional, behavioral, and physical responses to infertility and its medical treatment. Person A,
who holds irrational beliefs, may well experience dysfunctional negative emotions (e.g., rage, depression), engage in unhelpful health-related behaviors (e.g., refuse or delay treatment), and suffer from various stress-related physical complaints (e.g., nausea, fatigue, headaches). On the other hand, as a result of holding more rational beliefs, Person B might fair considerably better than Person A emotionally (e.g., annoyance, mild sadness), behaviorally (e.g., maintain treatment compliance), and physically (e.g., reduced physical complaints).

In the following third and fourth hypothesis of this study shows the results of the effect REBT on depression and irrational beliefs among infertile women.

**3- Third hypothesis of the study, REBT reduce depression in the infertile women.**

Table 4-5-1 shows mean score on pre treatment, post treatment and follow up sessions for experimental (Pre=33.40; Post=27.05; Follow=26.45) and control(Pre=33.63; Post=33.36; Follow=33.47) groups on depression among infertile women. Repeated measure ANOVA (Table 4-5-2) was applied to find out the effectiveness of intervention (REBT) on depression. Results of within group comparison between pre and post mean scores showed significant decrease in depression (p<0.001). Further, within group (time × group) interaction on depression shows that there was a significant change across the time (pre-to post assessment) in depression (p<0.001). The observed F-value and substantial decrease in the post mean in depression support the proposed hypothesis that REBT is effective in decreasing depression.

Between the subject effects comparison showed a significant reduction in total depression (p<0.001).

BDI-II has two subscales: the Affective component and the Somatic component. Repeated measure ANOVA for affective factor subscale of depression showed significant decrease in affective symptoms (Table 4-5-4, F (2, 76) = 21.45, p< 0.001). Similarly in somatic factor subscale of depression Repeated measure ANOVA showed decrease in somatic symptoms of depression (Table 4-5-6, F (2, 76) = 12.01, p< 0.001).
Further, the comparison of time*group showed a significant effect in decreasing depression on Affective factor $F(2, 76) = 20.93, p< 0.001$ (Table 4-5-4) and Somatic factor $F(2, 76) = 29.98, p< 0.001$ (Table 4-5-6) indicating that the amount of change (decrease) observed from pre to post assessment and follow up was similar.

Table 4-5-7 shows effect size calculation (Cohen’s $d$) for depression and it’s subscale. Results shows medium effect size for experimental group for Affective factor 0.50 and for Somatic factor 0.47. Medium effect size for between groups was obtained for Affective and Somatic subscale of depression.

Results indicate Medium effect size for the effect of REBT on total depression (0.63) and for between the groups it was (0.52). In other words, 63 percent of change (Reduction in the level of depression) in total depression is attributed to the effect of REBT interventions only. In control group effect size calculated to the effect of REBT on total depression was (0.003) indicating a weak effect size. In other words improvement in control group no change occurred was negligible and very weak.

The aim of third hypothesis was REBT reduce depression in the infertile women. For this purpose therapist applied behavioral techniques (Slow-Breathing Technique, Relaxation, Activity Scheduling/Planning and Social Skills training) and cognitive technique brought change in level of depression and it’s subscales (Affective and Somatic component).

Behavior techniques involve learning practical techniques that helped infertile women to cope in demanding or stressful situations, such as depression and/or loss. Behavioral strategies include: (a) Slow-Breathing Technique, The slow breathing technique helps to calm infertile women down so that they can think more clearly and apply the straight thinking strategies. It can also be useful strategy to shift focus away from anxious concerns; (b) Relaxation, when infertile women have been under treatment for long periods of time, they may maintain high levels of muscle tension. Slow breathing and muscular relaxation are psychological techniques to manage anxiety, particularly muscle tension experienced by infertile women. Being in a relax state they may respond and think clearly about their irrational beliefs which lead to depression. Training infertile women in slow breathing and muscular relaxation with pronde stons base to administer REBT. Through which irrational beliefs /thinking can be catch change into rational beliefs in an effective way.
Combination REBT, slow breathing and relaxation may be more effective at relieving infertility reflected tension. Therapist believe that these relaxation therapies reduce depression by distracting the mind from negative thoughts, improving mental focus, promoting a sense of mastery and self-control, and by decreasing sympathetic nervous system activity (responsible for increasing heart rate and metabolism) among infertile women. (c) Activity Scheduling/Planning. Infertile women feel overwhelmed by negative thoughts about their infertility when they are undergoing medical and REBT treatment. Training in activity Schedule probably helped infertile women plan their daily and weekly schedule during the course of their REBT treatment. Meticulously planning daily and weekly schedules many have helped infertile women manage their daily activities, by decreasing their preoccupied negative thoughts, control their level of sad feeling, and overall, help them feel less depressed and more in control of their life. (d) Social Skills training, the process involved teaching infertile women to identify particular social skills deficits or communication-related behaviors that they would like to change. Social skill training may have improved the infertile women’s functioning in social and interpersonal, which in turn word have helped them in reining of a positive response from others, which in turn lead to other positive consequences such as feeling less, sad, depression and unhappy.

Further after behavior techniques therapist explained the rationale of REBT, the ADCDE model and the goals of REBT to the infertile women. The overall REBT treatment was focused on the irrational beliefs mediating depressive symptoms such as demandingness (DEM), self-downing (SD), awfulizing (AWF) and low frustration tolerance (LFT). Cognitive and behavioral techniques were used to change the targeted irrational beliefs related to depression symptoms among infertile women.

It was the irrational beliefs and cognitive errors which cause depression. Changing irrational to rational beliefs through D-disputing may have reduced the symptoms of depression among infertile women leading to the enhancement of feeling of self worth much needed confidence and self esteem.

REBT strategies focused on: (1) reducing infertile women’s problems about self, future and the world and life experiences in the past and present. (2) Promoting unconditional self-acceptance, have stressed on focusing on the identification and
modification of demandingness (DEM) as the irrational belief is mainly involved in depression.

Therapist helped infertile women to Dispute Negative Beliefs, irrational beliefs and cognitive errors through REBT. Changed irrational beliefs into rational beliefs through D-disputing may have reduced the symptoms of depression among infertile women, which many have resulted in enhancement of feeling of self worth and much needed confidence and self steam of the infertile women.

Presence of demand (DEM) was tested by asking infertile women about it directly and helping infertile women to change DEM into preference and changing awfulizing into Anti-awfulising would have reduced their preoccupation of not having child and feel more positive, happier,…

The results of all infertile women disputes by changing their negative beliefs into more helpful ones, after REBT intervention infertile women reported that they feel more positive (happier, calmer, more relaxed), or less strongly negative (e.g., disappointed/sad vs. depressed, annoyed vs. furious).

Khalatbari, Ghorbanshirodi, Akhshabi, Hamzehpour, & Esmaeilpour (2011) studied the effectiveness of the behavioral-cognitive therapy on the reduction of the level of the depression and anxiety of the infertile women. The findings indicated that the behavioral cognitive therapy has positive influence over depression in the intervention group significantly compared to the control group. Thus, the behavioral cognitive therapy has been effective on the reduction and elimination of the depression and anxiety in the infertile women.

Rabizadeh, Karam Nuri and Taeibzadeh (2002) found that the cognitive therapeutic method is the best method of the treatment in the depressed and anxious among infertile women.

Gharaie, Mazaheri, Sahebi, Peivandi, & Agha Hossinei (2004) surveyed the effect of behavioral-cognitive education on reduction of anxiety and depression in women with primary infertility that undergo Gamete intra fallo pian transfer (GIFT) and Zygote intra fallopian transfer (ZIFT). The results showed that behavior cognitive educations are effective in reduction of anxiety and depression in primary infertility cases who
are undergoing Assisted reproductive technology (ART) treatment. Besides, in women who showed anxiety and depression reduction following psychological intervention, the rate of successful medical treatment was significantly higher compared with the control group.

Ramzanzadeh et al., (2008) expressed that the CBT/REBT is useful to reduce the depression of the infertile couples before receiving the medical treatment for infertility.

Studies have shown the beneficial effects of Cognitive Behavior therapy not only in adapting to unsuccessful treatments but also in reducing depression and bringing about successful pregnancy. Same time after unsuccessful medical treatment for infertility cognitive therapy offers infertile women in trying their best for having children or in adapting to the condition of being childless (Ramazanzadeh, Noorbala, Abedinia, & Naghizadeh, 2009). Research show that knowledge before treatment for distress and acceptance of the probability of being left childless are factors which determine the emotional response which occurs in response to infertility treatment failure (Ramazanzadeh et al., 2009). Psychologist can help to improve the process of acceptance of such situation by discussing the problems of infertility with couples so that they can handle the condition in a better way such as the opportunities that exist in case of treatment failure.

Psychologist through REBT helps and prepares couples in becoming emotionally ready for facing and accepting unsuccessful treatment in case it occurs. Psycho-cognitive teachings such as CBT/REBT can probably help them in overcoming and controlling the natural depression and emotional distress brought about by treatment failure (Bunting & Boivin, 2007). Preparing for pregnancy Damer et al., (2000); Noorbala et al., (2007) and Newton et al., (1999) and the effectiveness of cognitive behavior therapy and the rate of success of pregnancy among infertile couples, Further it had lower anxiety and depression and higher pregnancy chance and improve marital satisfaction rates. Other reports show that psycho-cognitive therapy (behavioral, cognition and psychotherapy) during the process of diagnosis and treatment, especially prior to IVF therapy and pregnancy testing, can result in higher rates of pregnancy and the use of cognitive-behavioral treatment can increase the
chance of pregnancy even after six months follow-up (Boivin, Griffiths, & Venetis, 2011; Damer et al., 2000).

Tuschen-Caffier (1999) evaluated the impact of a 6-month cognitive-behavioral therapy for infertile couples. Seventeen idiopathic infertile couples participated in a therapy program comprised of modules to behaviorally optimize the chance of conception, improve sexual functioning and satisfaction, reduce thoughts of helplessness and, if necessary, improve marital communication skills. Pre- to post treatment changes in the therapy group were compared to changes in control group. Results indicated the therapy group showed an improvement in sperm count, a reduction in thoughts of helplessness and a decrease in marital distress. By the end of therapy participants practiced timed intercourse more reliably and reported unchanged sexual pleasure and satisfaction during the non fertile period of the menstrual cycle. At the 6-month follow-up, problem-focused thoughts had decreased. The live birth rate was higher in the therapy group. Further Preliminary data suggest that cognitive-behavioral treatment may be an effective approach for the treatment of infertility (Tuschen-Caffier, Florin, Krause, & Pook, 1999).

CBT/REBT is the most preferred psychological treatment for depression, which teaches clients to challenge self-defeating, but enduring ways of thinking (cognitions) and change counter-productive behaviors. Research beginning in the mid-1990s suggested that CBT/REBT could perform better than antidepressants in patients with moderate to severe depression (Roth & Fonagy, 2005).

4- **Fourth hypothesis of the study, REBT reduce irrational beliefs in the infertile women.**

The fourth hypothesis of the study was, REBT is effective in decreasing irrational beliefs in infertile women. Table 4-6-1 shows mean score on pre treatment( M=79.85), post (M=71) treatment and follow up (M=69.20) sessions for experimental and for control group mean score on Pre treatment (M=79.30); Post treatment (M=77.15) and Follow up (M=79.25) on irrational beliefs among infertile women. Repeated measure ANOVA (Table 4-6-2) was applied to find out the effects of intervention (REBT) on irrational beliefs. Results of within group comparison between pre and post mean scores showed significant decrease in irrational beliefs (Table 4-6-2; p<0.001). Further, within group (time × group) interaction shows that
there was a significant change observed across the time (pre-to post assessment) in irrational beliefs (p<0.001). The observed F-value and substantial decrease in the post mean in this outcome variable (irrational beliefs) support the proposed hypothesis that is REBT is effective in decreasing irrational beliefs.

Short General Attitude and Belief scale (SGABS) consists of the following subscales namely rationality, self-downing, need for approval, need for achievement, need for comfort, Demand for fairness and other downing. Subscale analysis of irrational beliefs, are present below:

Repeated measure ANOVA on rationality factor showed a significant increase in rationality factor (Table 4-6-4; p<0.001), indicating that the REBT intervention was effective in increasing the rational thinking among infertile women.

Also, analysis of results for other irrational beliefs subscales showed a significant reduction in self-downing (Table 4-6-6; p<0.001); reduced need for approval(Table 4-6-8; p<0.001); reduced need for achievement(Table 4-6-10; p<0.001); reduced need for comfort (Table 4-6-12; p<0.001); reduced need for fairness (Table 4-6-14; p<0.001) and reduced other downing (Table 4-6-16; p<0.001). Further, the observed improvement i.e., reduced irrational beliefs from pre to post intervention were reconfirmed by the medium effect size 0.57 for REBT group (table 4-6-17). The effect size for between groups was medium (0.61), indicating REBT was moderate effective in reducing the irrational beliefs level in infertile women.

REBT aims at identifying for infertile women’s automatic negative thoughts and teat/train them how to dispute them. Further their absolutistic shoulds, oughts, and musts are identified by therapist and teach infertile women as to how to dispute and change them into preferences.

REBT enlighten infertile women that they consciously and unconsciously choose to disturb themselves by escalating their preferences into demands and cravings, and that they can train themselves not to do so and thereby create healthy feelings and emotions

To test the fourth hypothesis was REBT reduce irrational beliefs in the infertile women. For assess this hypothesis therapist applied cognitive and Emotive
Techniques. Cognitive Techniques include: The cognitive conceptualization of the problem, based on the ABC model and Disputing negative beliefs and Emotive Techniques include: Use of Humors. Use of this Technique brought change in level of irrational beliefs and its subscales (rationality, self-downing, need for approval, need for achievement, need for comfort, Demand for fairness and other downing).

*Cognitive techniques* were specific strategies to changed or modified unhelpful and/or negative thoughts concerning a particular event. Cognitive strategies included: (a) *the cognitive conceptualization of the problem, based on the ABC model.* Infertile women were trained the ways of approaching infertility problems and equipped the infertile women to face the infertility issue adequately and effectively. They were taught how to identify and handle cognitive errors, identify those negative or unhelpful beliefs which fall into any of the following categories:

**Demands** – The thoughts contain the words “must,” “should,” or “ought”. For example, infertile women think, “I must become pregnant!” or, infertile women think “Life should be fair.”

**Awfulizing/Catastrophizing** – The thoughts involve words like “awful,” “horrible,” or “terrible.” For example, infertile women think, “I must become pregnant, If I don’t become pregnant that’s AWFUL! I spent a lot of money for treatment.”

**Frustration Intolerance** – The thoughts include “I can’t stand this!” or the word “unbearable.” For example, infertile women think, “I can’t stand being depressed like this!”

**Self-Downing** – Infertile women too critical of herself, or beating up on herself. Also, infertile women basing her self-worth on one or two minor things. For example, infertile women think, “I was too tired to make dinner for my husband today. I’m an insensitive wife and a terrible person.”

**Other-Downing** – Infertile women were being too critical of or beating up on others, or basing infertile women entire judgment of them on one or two minor things. For example, infertile women think, “My husband dose not at talk with me about my depression. He’s totally insensitive and neglects me.”
Life-Downing – Infertile women judging all of them life as bad, just because it’s not perfect. For example, infertile women think “Life is worthless because I feel, I am not a mother.”

(b) Dispute Negative Beliefs,

After recognize negative or unhelpful irrational thoughts, the next step is to Dispute or challenge infertile women’s irrational beliefs. Disputes can be directed at the following targets: demands, awfullising beliefs, low frustration tolerance beliefs and depreciation beliefs (where self, others and life conditions are being deprecated). Here the targets of the dispute are preferences, anti-awfullising beliefs, high frustration tolerance beliefs and acceptance beliefs (where self, others and life conditions are being accepted).

Disputing is done by using the falling disputation method. First, there are empirical disputes which ask infertile women to put forward evidence attesting to the truth or falsity of the belief. Second, there are logical disputes which ask infertile women to consider whether the target belief is logical or not. Third, there are heuristic disputes which ask infertile women to consider the functionality of the target belief. These disputing methods are targeted at both irrational beliefs and newly constructed rational beliefs. Irrational beliefs are inconsistent with reality, illogical and yield dysfunctional result while rational beliefs are consistent with reality, logical and yield functional results.

Emotive techniques are designed to help infertile women to change negative thoughts by emotional means. The use of humorous in an appropriate and unique emotive technique used in REBT to help infertile women treat themselves less seriously and to put things in proper perspective. Further, humorous methods encouraged infertile women to think rationally by not taking themselves too seriously.

The set of research studies investigating diverse psychotherapies for pregnancy promotion took place in a clinical/university clinic setting and consisted of individual/couple and group psychotherapies. Interventions were geared towards counseling for infertile women and couples using either cognitive behavioral, focal, resource or psychoanalytic methods (Emery et al., 2001; Sarrel & DeCherney, 1985). Tuschen-Caffier et al., (1999) offered supportive sexual therapy. Christie and
Morgan (2000) conducted psychoanalytic group therapy. Clark et al., (Clark et al., 1995; 1998) carried out two studies using cognitive behavioral group psychotherapy on the same sample. For this reason, the results were aggregated and counted as one complete study

Intervention. Galletly et al.,(1996b) and Domar et al., (1999) also administered comprehensive group psychotherapy programs to infertile persons.

Irrational beliefs play a central role in cognitive theory and therapy, hence irrational beliefs are the major focus in treatment and, consequently, are a primary intervention target. As noted by Beck et al.,(2001) these irrational beliefs, if they are properly recognized, are the key conceptual theme linking an individual’s dysfunctional responses to the present condition. One of the main pillars of REBT is that irrational and dysfunctional ways and patterns of thinking, feeling and behaving are contributing to most human disturbance of emotional, behavioral and social defeatism. REBT generally teaches that when people turn flexible preferences, desires and wishes into grandiose, absolutistic and fatalistic dictates, this tends to contribute to disturbance.

REBT commonly assumes that at the core of irrational beliefs there often are explicit or implicit rigid demands and commands, and that extreme derivatives like awfulizing, frustration in, people deprecation and over-generalizations are accompanied by these irrational beliefs. According to REBT the core dysfunctional philosophies in a person’s evaluative emotional and behavioral belief system, are also very likely to contribute to unrealistic, arbitrary and crooked inferences and distortions in thinking. REBT therefore first teaches that when people in an insensible and devout way overuse absolutistic, dogmatic and rigid "shoulds", "musts", and "oughts", they tend to disturb and upset themselves (Ellis, 2003).

Further REBT generally assumes that disturbed evaluations to a larger degree occur through over-generalization, wherein people exaggerate and globalize events or traits, usually unwanted events or traits or behavior, to out of context, while almost always ignoring the positive events or traits or behaviors. For example, awfulizing is partly mental magnification of the importance of an unwanted situation to a catastrophe or horror, elevating and rating of something from bad to worse than it should be, to beyond totally bad, worse than bad to the intolerable and to a
"holocaust". The same exaggeration and over generalizing occurs with human beings, wherein humans come to be arbitrarily and axiomatically defined by their perceived flaws or misdeeds. Frustration intolerance then occurs when a person perceives something to be too difficult, painful or tedious, and by doing so exaggerates these qualities beyond one’s ability to cope with them.

The results of meta-analysis of psychological interventions for women suffering from infertility indicate evidence for the efficacy of psychological interventions in achieving pregnancy and indicate that psychological interventions (psychological interventions include counseling, cognitive-behavioral therapy, educational interventions, relaxation, psychodynamic/-analytic Interventions) may be effective in increasing couples’ pregnancy rate. Also Psychological interventions represent an attractive treatment option, in particular, for primary infertile patients who are not receiving medical treatment (Hämmerli, Znoj, & Barth, 2009). REBT is the first form of cognitive behavior therapy (CBT). According to the REBT model, infertile women experience undesirable activating events, about which they have rational beliefs (RBs) and irrational beliefs (IBs). These beliefs then lead to emotional, behavioral, and cognitive consequences. Rational beliefs lead to functional consequences, while irrational beliefs lead to dysfunctional consequences. Infertile women who engage in REBT are encouraged to actively dispute their IBs and to assimilate more efficient, adaptive and rational beliefs, with a positive impact on their emotional, cognitive, and behavioral responses.

II. Qualitative analysis

In quantitative analysis a case of primary infertile women is present along with the REBT intervention to demonstrate the efficacy of REBT on depression and irrational beliefs in infertility case.

(A) Case Analysis

Case history:

Mrs. M was a 28 years old homemaker, educated up to College, married for 6 years and had four years of infertility treatment, decided to have child a year after marriage and after trying unsuccessfully for one year the couple sought gynecological
investigation. On medical investigation she was found to have problems with her ovulation that required treatment. After investigation of both husband and wife for infertility cause the Intra Vitro Fertilization (IVF) Procedure was advised to facilitate conception. She was on regular treatment for 6 months following which treatment was stopped due to failure of IVF with no positive results. Therefore, she discontinued treatment for over a year. At the time of interview she was back into infertility treatment because of pressure from her in-laws. Mrs. M’s inability to conceive caused lots of interpersonal problems, she was worried and preoccupied. There was also evidence of increasing problem of anger towards her husband and reported that her husband did not share her concern for pregnancy and they did not have regular intercourse and she complained of sexual dissatisfaction. She began to feel lonely and avoid social occasions, started feeling the sense of insecurity and developed apprehension about future.

Mrs. M was assessed using BDI-II and SGABS pre assessment scores on BDI-II and SGABS was 35 and 87 respectively indicating high depression and irrational beliefs. After completion of REBT her scores on post assessment had dropped to 28 and 68 on BDI-II and SGABS respectively.

**Process of the intervention**

She was motivated to complete the intervention program because of initial assurance to her regarding the maintenance of confidentiality. At the ‘intake’ interview, an assessment was made to determine if REBT might be a suitable approach to Mrs. M’s problems. Mrs. M expressed the view that she did not wish to receive medication and that she wanted to ‘learn to help herself’. The assessment recorded that her mood was depressed and high level of irrational beliefs. She was more irritable than normal and felt hopeless. She was withdrawn and restless. Other complaints included insomnia, anorexia, loss of interest, and poor concentration. Mrs. M was pre-occupied by her infertility with lack of perceived support from family and friends. Although feeling hopeless, she denied any suicidal intent and said her fate is ‘in God’s hands’. Irrational beliefs; *Mrs. M was pre-occupied by some irrational beliefs such as: I must have done something to upset my husband. I am such a horrible person; I feel hopeless and sad, I have stopped trying infertility treatment, and I feel even more fatigued; I must become pregnant, If I don’t become pregnant that’s AWFUL! I spent
a lot of money for treatment; I was too depressed to make dinner for my husband today. I’m an insensitive wife and a terrible person; Life is worthless because I feel, I am not a mother; It would be awful if I were not having child; I couldn’t stand it if I were not having child; If I am not having child, it means that I am an unworthy person and etc,…

Assessment session provided a base for establishing emphatic and collaborative therapeutic relationship between the therapist and Mrs. M which facilitated the process of the therapy.

REBT group therapy session started with ice breaking and warm up session for Mrs. M to familiarize with other members of the group. It was the first opportunity for Mrs. M to meet other members with the group therapist and familiarize with each other. It was helpful for Mrs. M to introduce herself and say a little bit about herself.

Maintaining a diary helps the infertile women to introspect the difficulties and problems faced by them and also to identify sources of such problems. A problem list was created after the pre assessment and ice breaking session. The problem list is an “all inclusive list of the Mrs. M’s difficulties”. In other words, it serves as a summary of all of the key concerns raised by Mrs. M during the assessment process to identify the problems about self, future and the world and life experiences in the past and now. The problem list included not only those concerns associated with reasons for treatment, infertility depression and irrational beliefs but also such issues as unemployment, marital conflict, and medical problems and so on.

After establishing a therapeutic relationship, which involves therapist explaining the REBT and its central concepts, and the reasons for seeking treatment, Therapist prioritized problems and stated the goals based on the problem list and diary maintained by her. For example Mrs. M’s problem was Lack of self-esteem and self-worth, pre occupied infertility related problems.

Therapy started with teaching slow breathing and relaxation techniques. This helps to reduce physical and mental tension, there by thinking can be more clear and reasonable. It is a useful strategy for this infertile woman to shift focus away from anxious concerns. When Mrs. M physically relaxed, the impulses arising from various
nerves in the muscles change the nature of the signals that are sent to the brain. This change will bring about a general feeling of calmness, both physically and mentally.

Mrs. M was feeling overwhelmed by negative thoughts during REBT treatment as she tried to fit in all her usual day-to-day activities by Activity Scheduling/Planning Form. The aim of this activity helped her to plan daily and weekly schedule during the course of REBT treatment. Daily activities helped her to decrease negative thoughts, control level of fatigue, to feel less depressed and more in control of life.

The next session aimed at improving her social skills which she lacked. SST helped her to become more assertive to her right and overcome her inferiority feeling. SST may have increased the likelihood of a positive response from others, which in turn lead to other positive consequences (getting along better with others, becoming an effective presenter, etc.). After practicing social skills training, Mrs. M gave positive feedback of SST and reported decreased social isolation and she started making attempts to participate in social occasions. SST also helped her to solve interpersonal relation problems that arose on a daily basis with her mother in law. She attempted to spend leisure time with her mother in law and also agreed to attend few social occasions in which she felt comfortable.

In the next session therapist used cognitive conceptualization of the problem, based on the ABC model, to identify cognitive errors associated with Mrs. M’s infertility and to teach REBT to overcome cognitive errors. The cognitive conceptualization of the problem, based on the ABC model is a core cognitive technique in REBT. A stands for Activating Events, or situation encountered by her (e.g. infertility); B for the Beliefs that are triggered by the activating events (e.g. I must have a child, I should become pregnant, I ought to be mother) and such beliefs are usually irrational, dogmatic, absolutistic and negative; and C for the Consequences (emotional and behavioral) of the belief, for example, feeling depression or anxiety and avoidance of embracing situations (e.g. birthday party of children). Mrs. M thus learned that A does not lead to C, but rather A triggers B, which then leads to C. She was made to understand that her irrational beliefs, triggered by activating events in their lives, lead to her emotional disturbance and upset as well as to her behavioral problems. For example family members doesn’t acknowledge her presence or neglect her or ignore her (A, Event); Inferences about the event: My sister in law ignoring me; she doesn’t
like me; Beliefs about A, I’m unacceptable to my husband family so I must be worthless as a person. The C (Feelings and Behaviors): lonely, depressed, avoiding people generally.

The Therapist in REBT then helps the Mrs. M to go on to D, for Disputing her irrational beliefs in a vigorous, active and direct way, first demonstrated by the therapist and then practiced by Mrs. M. For disputing irrational beliefs therapist used the following technique to address the irrational beliefs i.e. Method of changing/converting and substituting rational thinking in the place of irrational thinking.

**Approach 1: Disputing Focused on Separate irrational Beliefs.** Disputing Focused on Separate irrational Beliefs will now be illustrated. Irrational beliefs are as follows:

**Demand:** *I should have a child*

Awfulising belief: *It would be awful if I were not having child*

Low Frustration Tolerance (LFT) belief: *I couldn't stand it if I were not having child*

Self-deprecation: *If I am not having child, it means that I am an unworthy person*

Mrs. M was taught and trained in converting rational beliefs into irrational beliefs as follows:

Preference: *I would like to be having child, but this is not essential*

Anti-awfulising: *It would be bad if I were not having child, but it would not be awful*

High Frustration Tolerance (HFT) belief: *It would be difficult for me to tolerate not being having child, but I could stand it*

Self-acceptance belief: *If I am not having child, it does not mean that I am unworthy person. It means that I am a logical human being who is facing a difficult situation.*

**Approach 2: Disputing Focused on Paired Components of Irrational and Rational Beliefs.** In this approach the therapist used paired components for Mrs. M’s irrational belief and rational belief at the same time. For example, Demand (*I should have a child*); Preference (*I would like to have a child but this is not essential*)

**Approach 3: Disputing Focused on one Belief at a Time (E–Effective/ Helpful Beliefs).** This approach effort was made to develop effective and helpful beliefs. The
therapist proceeded as follows to dispute irrational beliefs, Awfulizing beliefs and self
depreciation beliefs and replace it with healthy beliefs or rational thinking.

Awfulising belief: *It would be awful if I were not having a child*

Anti-awfulising belief: *It would be bad if I were not having a child, but it would not be awful*

Self-depreciation belief: *If I am not having a child, it means that I am an unworthy person*

Self-acceptance belief: *If I am not having a child, it does not mean that I am an unworthy person, it means that I am a logical human being who is facing a difficult situation*

**Approach 4: Disputing Focused on one Paired Set of Components at a Time (E – Effective/Helpful Beliefs).** Here the focus of the disputing was again on the arguments used earlier, but this time each paired set of components relating to the irrational and rational belief is considered together. For example: *I couldn't stand it if I were not having a child* (Low Frustration Tolerance) replaced by *It would be difficult for me to tolerate not being having a child, but I could stand it* (High Frustration Tolerance). In a similar manner many other irrational beliefs are converted into rational beliefs.

Finally Mrs. M’s report showed the results of all her disputes by changing her negative beliefs into more helpful ones. She reported feeling better emotionally! For example, she felt more positive (happier, calmer, more relaxed) and less strongly negative (e.g., disappointed/sad vs. depressed, annoyed vs. furious); Mrs. M behaved in a more helpful way! For example, she pursued infertility treatment and socialized with friends or pursued a hobby and she felt physically better, she felt more energetic with less muscle tension.

The results of this case (Mrs. M) provide evidence that cognitive behavior strategies can be effective in reducing depression and irrational beliefs in women undergoing infertility medical treatment. There was a significant reduction in the symptoms of depression and irrational beliefs after the intervention. REBT helped in positive
coping statements, pleasurable activities and helped her to reduce negative affect associated with infertility and feeling of hopelessness. She also reported a significant change in depression and irrational beliefs. REBT led to a gain in confidence over coping with problems related to infertility.

(B) Observations

Observations made by the subjects and the therapist can provide some additional information about the efficacy of cognitive behavior therapy. Observations of each of them are presented below.

a) Observations of the infertile women

1. Reduced the depression symptoms and irrational beliefs.
2. Improved relationship with husband and family members.
3. Improved interest to continue infertility medical treatment with hope
4. Improved interest to continue REBT.
5. Being optimistic towards self, others and future.

b) Observations by husband

1. Reduced the depression symptoms in their spouses
2. Improved partner relationship
3. Husband showed interest to continue REBT of wife
4. Improved marital satisfaction

c) Observations by researcher

During the sessions researcher found that:

1. Some of the infertile women need more REBT intervention sessions because some of the illiterate infertile women reported difficulty in understanding ABCDE model.
2. Some of them expressed necessity to take REBT intervention along with husband
3. Many of the infertile women informed their willingness to continue their medical treatment. This feedback leads to support the effectiveness of REBT, probably because of reduced psychological pressure on them.

III. Implications of the study

1. Research design was to evaluate the efficacy of REBT on infertility related depression and irrational beliefs.

2. The study targeted primary infertile women who are in age group of 20-40 years which is considered as peak age for reproduction for women.

3. Research design consists of pre and post assessment using experimental and control group.

4. Study result indicates that REBT manual based group intervention was effective in the management of depression and irrational beliefs.

5. Findings of the present study suggest that professionally trained psychologist can help infertile women to manage the emotional impact before, during and after infertility treatment.

6. Emotional support and good mental preparation helps infertile women to reduce suffering in order to face up to each step of the reproductive process.

7. Infertile women are trained in relaxation, social skills, emotional self control and REBT. The aim is to help infertile women to become aware of and to identify the problem regarding infertility related depression and irrational beliefs. Further it is aimed at restoring self-esteem, improve communication difficulties with family, friends and work place.

8. Intervention techniques used in present study helped in maintaining a positive attitude towards treatment (medical as well as psychology).

REBT is based on logical, rational and intellectual approaches of counseling. It is a logical approach to solving human neurotic problems and it is suitable for counseling the infertile women. Rational Emotive Behavior Therapy is a prescriptive approach, which equip the counselor to rational problem-solving process in an individual.
Corey (2012) posited that the client is assisted to gain insight into their problem and must practice newly learnt technique actively to develop rational views towards life in order to be emotionally stable. Therapeutic technique in the present study was used on Indian infertile women, therapist used diverse procedures such as teaching, reading, assignment and applying logical, scientific methods for dispute, negative beliefs and reduces depression among infertile women. Such techniques are designed to engage the client in the critical evaluation of a particular philosophy of life. A specific diagnosis is made and the therapist interprets, questions, probes, challenges, and confronts the clients in the teaching-learning relationship, the infertile women were helped to develop insight into their problems and solve those problems related to infertility related issues. As a result the therapist makes a conscious effort at redirecting, re-educating and exposing the individual in order to become more fully functional.

Rational Emotive Behavior Therapy helps the individual to observe and understand the cognitive errors such as perfectionist, shoulds, oughts, musts. Thus, the outcome of therapy is the acquisition of a new, more logical and scientific approach to life so that infertile women learn, think, feel, and act appropriately toward their unpleasant circum-stances and apply these principles to their new and different situation that may occur in the future.

It is important for specialists in infertility centers to become aware that some infertile women develop depressive symptoms after unsuccessful treatment. Psychologist must be able to provide psychological services to infertile women and her partner. Therefore, infertility specialist must be able to recognize and appreciate this and be able to utilize additional mental health resources to provide accurate and comprehensive facts to the couple to help them decide how to manage their infertility related depression and irrational beliefs.

IV. Strengths of the study

1. Implementation of a structured multi component, comprehensive, manual based group intervention study.
2. Addressed infertility related depression and irrational beliefs using Cognitive and Emotive techniques which are specifically applicable to each individual and group as a whole.
3. Study involved pre, post and follow up assessments.
4. Control group (primary infertile women) for comparison was used. Control group did not receive any REBT intervention till the comparison of REBT intervention for experimental group. Hence comparison is valid and results can be generalized (though sample size was small).
5. Study demonstrated the efficacy of Cognitive Emotive Behavior techniques (REBT) in managing depression and irrational beliefs in primary infertile women.
6. Experimental and control group were comparable at pre intervention stage on demographical and outcome variables which minimized the possibility of selection bias.

V. Limitations of the study

1. In this study a small sample were (20 infertile women) selected for REBT treatment. Therefore, generalizing the results is probably limited due to smaller sample size.

2. In the present study intervention was carried out on subjects with high depression and high irrational beliefs (as specified in the methodology part), whether the findings of the present study is applicable for individuals with low, mild depression and low irrational beliefs needs to be investigated.

3. Post intervention assessments after the completion of each intervention component (though planned) could not be done due to unwillingness on the part of the participants.

4. Husbands of the infertile women were not included for intervention. Doing so could have enhanced the efficacy of the intervention. Including spouses of infertile women would have compounded the findings.

5. Generalization of the results to different medical infertility treatment (In vitro fertilization (IVF), Intra cytoplasm sperm injection (ICSI), Gamete intra-fallopian transfer (GIFT), Zygote intra-fallopian transfer (ZIFT) on the outcome variables needs to be investigated.
6. Another limitation was that often infertile women complained about the confidentiality of the group members and reported that other members in group may not maintain confidentiality. Therefore, some of them behaved very cautiously in the first session of intervention with the other members.

VI. Suggestions for future study

1. A study may be designed to evaluate the effect of REBT group intervention on infertile women and spouse.

2. Post assessment after presentation of each intervention technique may be investigated.

3. Same REBT techniques may be investigated as individual treatment.

4. Efficacy of REBT with mild depression and low irrational beliefs may be investigated.

5. Results should be confirmed with more detailed complementary researches in order to gain a definite pattern in irrational beliefs, depression and other correlates of infertility which can be applied in treatment scheduling.

6. Some studies suggest promising results of psychological interventions in increasing pregnancy rate (Domar, Clapp, Slawsby, Dusek, et al., 2000). However, future prospective research is needed in order to obtain a better understanding of the mechanism involve and to provide an evidence base for effective depression and irrational beliefs reduction interventions aiming at better pregnancy rates.

7. More study is needed to determine the efficacy of cognitive and behavioral techniques (REBT) compared to antidepressants in primary infertile women suffering from depression.

8. Similar intervention study using large sample size may be conducted, so that findings become more generalized. Further, more data is needed on the infertility experience in different socio-cultural groups.