CHAPTER I

Introduction
INTRODUCTION

Infertility is a failure in pregnancy after one year of unprotected intercourse (Geelhoed, Nayembil, Asare, Schagen van Leeuwen, & van Roosmalen, 2002; Poppe & Velkeniers, 2002). Infertility is defined as an inability of a couple to achieve pregnancy for at least one year of trying to do so without using any means of birth control (Cooper et al., 2010). Infertility may also refer to the state of a woman who is unable to carry a pregnancy to full term (Lash, Yaghamie, Strohsnitter, & Lalwani, 2008). It is perceived as a problem across virtually all cultures and societies and affects an estimated 10-15% of couples of reproductive age. World Health Organization has estimated that 8% to 12% of couples Worldwide experience infertility (Hsu & Kuo, 2002).

Total infertility is divided into primary and secondary infertility. Definitions of primary infertility vary between studies, but the operational definition, put forth by the WHO, is the inability to conceive within a year of exposure to pregnancy (i.e.-sexually active, non-contraception, and non-lactating) between women 15 to 45 year age group (WHO, 2001). Secondary infertility refers to the inability to conceive following a previous pregnancy. Globally, most infertile couples suffer from primary infertility (Inhorn, 2003).

Causes of Infertility:

Several centers have reported different causes (e.g. Genetics, biological, male or female factors) for infertility (Ikechebelu, Adinma, Orie, & Ikegwuonu, 2003; Razzak & Wais, 2002). It has been reported that 40% of infertilities were related to men, 40% to women and 20% to both sexes (Sadock, Kaplan, & Sadock, 2007).

Some causes are more common in some countries due to infection and sexually transmitted disease (STD) in Africa (Araoye, 2004). Some environmental factors are also considered as influencing factors, such as alcohol use (Tolstrup et al., 2003) and smoking (Saleh, Agarwal, Sharma, Nelson, & Thomas, 2002). Toxins such as glues, volatile organic solvents or silicones, physical agents, chemical dusts, and pesticides, it is suggested that 60% of smokers are more likely to be infertile than non-smokers (Mendiola et al., 2008).
The most common causes of infertility are: Male factors such as sperm disturbance (Bayasgalan et al., 2004; Ikechebelu et al., 2003); In females, factors such as ovulation dysfunction (Poppe & Velkeniers, 2002; Razzak & Wais, 2002) and Fallopian tube factor (Ikechebelu et al., 2003; Poppe & Velkeniers, 2002; Razzak & Wais, 2002); both male and female factor (Bayasgalan et al., 2004; Ikechebelu et al., 2003; Poppe & Velkeniers, 2002) and unexplained infertility (Ikechebelu et al., 2003; Poppe & Velkeniers, 2002; Razzak & Wais, 2002).

Genetic factors, Diabetes mellitus, Thyroid disorder, General factors, Adrenal disease, Hypothalamic-pituitary factors, Hyperprolactinemia, Hypopituitarism and the presence of anti-thyroid antibodies are associated with an increased risk for unexplained subfertility with 1.1–2.0 percent (Van den Boogaard et al., 2011).

Infertility may be caused due to, chromosomal abnormalities, micro deletions, Cystic Fibrosis Trans Membrane Conductance Regulator (CFTR) mutations and other hormone factors such as Follicle Stimulation Hormone (FSH) (Diemer & Desjardins, 1999; Egozcue et al., 2000; Hargreave, 2000). Because immunological factors operate at almost every stage in the human reproductive process, antibodies-induce damage to gametes and developing embryos is a major cause of immunological infertility.

**Specific female causes**

1) *Fallopian tube damage or blockage*

Fallopian tube obstruction is a major cause of female infertility. Blocked fallopian tubes are unable to let the ovum and the sperm converge, thus making fertilization impossible. Fallopian Tubes are also known as oviducts, uterine tubes. Most commonly a tube may be obstructed due to infection such as pelvic inflammatory disease (PID). The rate of tubal infertility has been reported to be 12% after first, 23% after second, and 53% after third episodes of PID (Yen, Jaffe, & Barbieri, 1986). The Fallopian tubes may also be occluded or disabled by endometritis, infections after childbirth and intra abdominal infections including appendicitis and peritonitis. The formation of adhesions may not necessarily block a fallopian tube, but render it dysfunctional by distorting or separating it from the ovary. It has been reported that women with distal tubal occlusion have a higher rate of HIV infection (Adesiyun, Ameh, & Eka, 2008). Fallopian tubes may be blocked due to contraceptive practices.
In these situations tubes tend to be healthy and typically patients requesting the procedure had children. Tubal ligation is considered a permanent procedure (Adesiyun et al., 2008).

II) Endometriosis

Endometriosis is a gynecological medical condition in which cells from the lining of the uterus (endometrium) appear and flourish outside the uterine cavity, most commonly on the peritoneum which lines the abdominal cavity. The uterine cavity is lined with endometrial cells, which are under the influence of female hormones. Endometrial-like cells in areas outside the uterus (endometriosis) are influenced by hormonal changes and respond in a way that is similar to the cells found inside the uterus. Symptoms often worsen with the menstrual cycle (Bulletti, Coccia, Battistoni, & Borini, 2010). Endometriosis is a very common debilitating disease that occurs in 6 to 10% of the general female population; in women with pain or infertility, or both with incidence of 35–50% (Schmid, Nkunku, Merolle, Vounatsou, & Burri, 2004). About 25 to 50% of infertile women have endometriosis, and 30 to 50% of women with endometriosis are infertile (Counseller & Crenshaw, 1952). More recent data indicate that the incidence of endometriosis has not increased in the last 30 years (Hummelshoj, Prentice, & Groothuis, 2006).

III) Polycystic ovary syndrome (PCOS)

Polycystic ovary syndrome (PCOS) is one of the most common female endocrine disorders. In PCOS, the body produces too much androgen hormone which affects ovulation (Malpani & Malpani, 2001; Parks, 1996) and it occurs most to frequently in women of reproductive age group (Teede, Deeks, & Moran, 2010). PCOS is a complex, heterogeneous disorder of uncertain etiology and classified as a genetic disease (Diamanti-Kandarakis, Kandarakis, & Legro, 2006; Fauser et al., 2011; Legro & Strauss, 2002).

PCOS produces symptoms in approximately 5% to 10% of women of reproductive age (12–45 years old). It is thought to be one of the leading causes of female subfertility (Azziz et al., 2004; Boomsma, Fauser, & Macklon, 2008; Goldenberg & Glueck, 2008).
Specific male causes

I) Impaired production or function of sperm:

Impaired shape and movement of sperm, low sperm concentration, Varicocele (varicose vein in the scrotum), Undescended testicle (cryptorchidism), Testosterone deficiency and Genetic defects. In the genetic defect like Klinefelter’s syndrome, Klinefelter's syndrome, 47(chromosomes) XXY. XXY syndrome is a condition in which a male has an extra X chromosome while females have an XX chromosomal make up, and males an XYchromosomes, affected individuals have at least two X chromosomes and at least one Y chromosome (Vinay, Abbas, & Fauston, 2004). Because of the extra chromosome, individuals with this condition are usually referred to as "XXY Males", or "47, XXY Males" (Bock, 1997). This chromosome constitution (karyotype) exists in roughly between 1:500 to 1:1000 live male births but many of these people may not show symptoms. The physical traits of the syndrome become more apparent after the onset of puberty, if at all. In humans, 47, XXY is the most common sex chromosome aneuploidy in males and the second most common condition caused by the presence of extra chromosomes. Other mammals also have the XXY syndrome, including mice. This causes abnormal development of testicles, resulting in absence or low sperm production and possibly low testosterone, Infections such as Chlamydia, gonorrhea, prostatitis (McConnell & Abdelgadir, 2010).

II) Impaired delivery of sperm:

Sexual disorders such as erectile dysfunction, painful intercourse (dyspareunia) or psychological or relationship related issues, retrograde ejaculation:- This occurs when the semen enters the bladder during orgasm rather than emerging out through the penis, blockage of epididymis or ejaculatory ducts, no semen (ejaculated), misplaced urinary opening (hypospadias), Cystic fibrosis:- Men with cystic fibrosis often have a missing or obstructed vas deferens (De Jonge & Barratt, 2002; Desal, Shirode, Bhanushali & Vilasrao, 2011).

III) General Health and lifestyle:

Psychological stress, malnutrition, obesity, alcohol, drugs, cancer and its treatment result in gradual decline in fertility are common in men older than 35 years (Desai,
Further congenital and acquired urogenital abnormalities, infections of the genital tract, increased scrotal temperature (varicocele), endocrine disturbances, genetic abnormalities and immunological factors may result in reduced fertility in males (Rowe & Comhaire, 2000).

Dohle et al., (2004) reported no causal factor is found in 60-75% of cases (idiopathic male infertility). Many men show no previous history associated with fertility problems and have normal findings on physical examination and endocrine laboratory testing. Semen analysis reveals a decreased number of spermatozoa (oligozoospermia), decreased motility (asthenozoospermia) and many abnormal forms on morphological examination (teratozoospermia). Usually, these abnormalities come together and are described as the Oligo-Astheno-Teratozoospermia (OAT) syndrome (Dohle et al., 2004).

**Combined Infertility**

About 25% of couples do not achieve pregnancy within one year, of whom 15% seek medical treatment for infertility and less than 5% remain unwillingly childless. Male causes for infertility are found in 50% of involuntarily childless couples. If there is a single factor, the fertile partner may compensate for the less fertile partner. In many couples, however, a male and a female factor coincide. Infertility usually manifest if both partners are sub-fertile or have reduced fertility (Dohle et al., 2004). In some cases, both the man and woman may be infertile or sub-fertile, and the couple's infertility arises from the combination of these conditions. In other cases, the cause is suspected to be immunological or genetic; it may be that each partner is independently fertile but the couple cannot conceive together without assistance (Kumar, 2004).

**Unexplained Infertility**

Up to 20% of infertile couples have unexplained causes. In these cases abnormalities are likely to be present but not detected by existing methods. Possible problems could be that the egg is not released at the optimum time for fertilization, or it may not enter the fallopian tube, sperm may not be able to reach the egg, fertilization may fail to occur, movement of the zygote may be disturbed, or implantation fails. It is increasingly recognized that egg quality is of critical importance and women of advanced maternal age have eggs of reduced capacity for normal and successful
fertilization. Also, polymorphisms in float pathway genes could be one reason for fertility complications in some women with unexplained infertility (Altmäe et al., 2010).

Treatment

Treatment depends on the cause of infertility, but may include counseling, fertility treatments, which include in vitro fertilization. Treatment methods for infertility may be grouped as medical or complementary and alternative treatments. Some methods may be used in concert with other methods. Drugs used for women include Clomiphene citrate, Human menopausal gonadotropin, Follicle-stimulating hormone, Human chorionic gonadotropin, Gonadotropin-releasing hormone analogs, Aromatase inhibitor, Metformin (Guzick, 2007).

Medical Treatments

Assisted reproductive technology (ART) is a general term referring to methods used to achieve pregnancy by artificial or partially artificial means. It is reproductive technology used primarily in infertility treatments (Desai et al., 2011). Some other forms of ART are also used in fertile couples for genetic reasons and in couples who are exposed to diseases like AIDS, to reduce the risk of infection when a pregnancy is desired. Examples of ART include in vitro fertilization, intra cytoplasmic sperm injection (ICSI), cryopreservation, and intrauterine insemination (IUI). There is yet no strict definition of the term. Usage of the ART mainly belongs in the field of reproductive endocrinology and infertility (Muriel et al., 2006). Procedures are mainly fertility medication, as well as ART techniques which uses more substantial and forceful interventions, of which in vitro fertilization (IVF) and advanced method of IVF such as, Intra cytoplasm sperm injection (ICSI), Gamete intrafallopian transfer (GIFT), Zygote intra fallopian transfer (ZIFT) are the most prevalent (Desai et al., 2011).

Most fertility medications are agents that stimulate the development of follicles in the ovary. Examples are gonadotropins and gonadotropin releasing hormone (Hillier, 2000).
Psychological and Social Impact

Having a baby has a socio-cultural significance, the infertile couples try hard to find a suitable treatment for their infertility and it is obvious that because of physical, psychological and economic impacts of the treatments, they face doubt and tension (Ramezanzadeh et al., 2004). Infertility and its treatment create a major and prolonged crisis for the couples and it is a stressful condition that creates a heavy psychological trauma for the couples.

This stressful experience has a high impact on couple’s psychological status. The problems of infertile couples are complicated and influenced by different factors such as sexual differences, cause and length of infertility (Ramezanzadeh, Abedinia, Zayeri & Khanafshar, Shariat & Jafarabadi, 2004). Infertility is a psychological stressor and one of the most significant lifetime crises for infertile women (Kaplan & Sadock, 1998; Lalos, 1999). The stress of infertility may stretch the limits of both coping and supporting resources of the individuals (Boivin, Scanlan, & Walker, 1999). Moreover, diagnostic procedures and the treatment of infertility may also influence both the physical and sexual health of the infertile women (Mahlstedt, 1985). As emotionally stressful situations, infertility itself and the treatments for it may cause depression and anxiety (Hammarberg, Astbury, & Baker, 2001). On the other hand, anxiety and depressive symptoms may either be the cause or the consequence of infertility (Greil, 1997).

The effectiveness of infertility treatment depends on both the success rate of the treatment facility (Anderheim, Holter, Bergh, & Moller, 2005) and the emotional well-being of the women seeking treatment (Templeton, Morris, & Parslow, 1996). Further, infertility-related stress may decrease the chances of conception; however the role of anxiety and depression relative to the outcome of infertility treatment is controversial. Some studies report that increased anxiety or depression levels may result in a lower pregnancy rate (Ashkani, Akbari, & Heydari, 2006; Gulseren et al., 2006). In less developed and developing countries, infertility is viewed and believed as an act of God, punishment for sins of the past, prolonged use of contraceptives, distinct dietary habits, and the result of witchcraft. Whereas people in developed countries viewed infertility as caused by biological and other related factors (Bharadwaj, 2000; Van Balen & Gerrits, 2001).
Reduced self-esteem, sense of bereavement, threat, depression and feeling of guilt, anxiety, frustration, emotional pressure and sexual problems are common among infertile couples. Studies have found that the incidence of depression in infertile couples undergoing infertility treatment is significantly higher than in fertile controls, with prevalence estimates of major depression in the range of 15%-54% (Chen, Chang, Tsai, & Juang, 2004). Anxiety has also shown to be significantly higher in infertile couples when compared to the general population, with 8%-28% of infertile couples reporting clinically significant anxiety (Chen et al., 2004).

Rmezanzadeh et al., (2004) states that during the first three years of married life, infertility is accompanied with the symptoms such as depression, anxiety, lack of self esteem, sexual impotency and marriage maladjustment. Ignoring the psychological factors related to infertility and merely considering these problems as medical ones will create huge obstacles in understanding human beings as an integrative whole. Infertility like other physiological phenomenon has social and psychological aspects and it is classified in the realm of behavioral sciences. KaramiNoori, Akhondi, & Behjati Ardekani (2001) had conducted a survey and reported that 70 per cent of physicians and infertility experts have expressed that infertility should be considered as having role in social and psychological factors influencing the prevalence and treatment of infertility.

Infertility treatment and depression are related in complex ways (Williams, Marsh, & Rasgon, 2007). Jacob et al., (2007) found that significantly more women with a fertility barrier (e.g. infertility and other fertility problems) scored higher on depression compared with women with no fertility problems. Systematic review of women’s emotional adjustment to IVF (Verhaak, Smeenk, Evers, et al., 2007) showed that in general infertile women did not differ from normal groups with respect to depression levels before the start of treatment. However, longitudinal studies measuring pre- and post-treatment emotional adjustment reported an increase in depression level after one or more unsuccessful treatment cycles in infertile women. A follow up study (six month after the final treatment cycle (Verhaak, Smeenk, Van Minnen, Kremer, & Kraaimaat, 2005) found no recovery from enhanced depression levels after unsuccessful treatment among women and men showed no change in depression whether treatment was successful or unsuccessful. Lechner, Bolman, & Van Dalen (2007) reported from a cross sectional study that among definite
involuntary childless couples, women had more psychological problems such as anxiety and depressive symptoms.

In a longitudinal study, 3–5 years after start of IVF treatment, Verhaak, Smeenk, Nahuis, Kremer & Braat (2007) found that the depression level among those women who did not give birth to a child did not differ significantly between pretreatment and at follow-up.

However, significantly higher levels of depression were found among those women still pursuing a desire for pregnancy compared with those who had abandoned their active pursuit of pregnancy. It seems therefore that depressive symptoms are both a possible consequence of infertility/failed fertility treatment and a risk factor for lower treatment success. Many (but not all) studies found that depressive symptoms may decrease with the success rate of fertility treatment (Williams et al., 2007). Further, the hormone treatment used in IVF treatment is in itself suggested to be associated with depressive symptoms after unsuccessful treatment.

The medicalization of infertility has unwittingly led to a disregard for the emotional responses that couples experience, which include distress, loss of control, stigmatization, and a disruption in the developmental path of adulthood (Cousineau & Domar, 2007).

Infertility may have profound psychological effects. Partners may become more anxious to conceive, leading to increased sexual dysfunction and marital discord especially when they are under pressure to make medical decisions. Women trying to conceive often have clinical depression rates similar to women who have heart disease or cancer (Domar, Zuttermeister & Friedman, 1993). Even couples undertaking IVF face considerable stress (Beutel et al., 1999).

The emotional losses created by infertility include the denial of motherhood; the loss of one’s anticipated and imagined life; feeling a loss of control over one’s life; doubting one’s womanhood; changed and sometimes disturbed friendships; and, for many, and even the loss of one’s religious environment as a support system (Rosner, 2012).
Interviews with fertile individuals have shown that infertile people find it severely challenging to learn how to manage the infertility in their social interactions with family, friends and co-workers (Schmidt, 1996). Infertile people report both supportive and unsupportive social interactions (Abbey, Andrews, & Halman, 1992; Akizuki & Kai, 2008; Miall, 1985; Sandelowski & Jones, 1986; Schmidt, 1996). Only few studies have investigated specifically the social interactions and its impact on the infertile individual’s mental well-being. Slade, O’Neill, Simpson and Lashen (2007) investigated the role of stigma, social support and reported that perceptions of stigma in infertile couple was related to low social support for both genders and social support was negatively related to anxiety, depression and overall infertility distress. Lechner et al., (2007) found among involuntary childless people that dissatisfaction with social support was positively associated with health complaints, depression, anxiety and complicated grief.

In many cultures, inability to conceive is a stigma, in closed social groups, one may experience some degree of rejection (or a sense of being rejected by the couple) may cause considerable anxiety and disappointment. Some respond by actively avoiding the issue altogether; middle-class men are the most likely to respond in this way (Schmidt, Christensen, & Holstein, 2005).

The mere fear of infertility has the power to bring severe societal consequences. For example in March 2004, the Northern Nigerian States of Kanu, Niger, Bauchi and Zamfara suspended a WHO polio immunization campaign targeting 60 million children following reports from Muslim clerics that the vaccine was contaminated with anti-fertility agents as part of a United States plot to render Muslim women infertile (Evens, 2004).

**Need for the Present Study:**

Childlessness has varied consequences on the lifestyle of individuals. Though in some cases the childless life style enhances life satisfaction for some individuals, but it is distressing for others, for whom parenthood is a personal goal. Parenthood is one of the major transitions in adult life for both men and women. The stress of the non-fulfillment of wish for child has been associated with emotional related problems such as anger, depression, marital problems, sexual dysfunction, and social isolation. Couples experience stigma, sense of loss, diminished self-esteem, inferiority feeling
and reduced well-being. Diagnostic procedures and the treatment of infertility may influence both the physical/psychological and sexual health of the infertile women. The infertility itself or the treatments for it may cause depression. Role of depression relative to the outcome of infertility treatment is controversial (Templeton, Morris, & Parslow, 1996).

The present study is an attempt to address the depression and irrational beliefs in infertile women. This will help the individual to overcome future depression and irrational beliefs and to equip the individual cope with effectively and adequately.

The complicated process of infertility has emotional and affective dimensions for the individuals. The stressful condition of the infertile period, the type of treatments, defense mechanisms of individuals for coping with the problem, available emotional, psychological and social supports, the stressful condition created by the high cost of modern treatment procedures like Assisted Reproductive Technology (ART), regular visits of physicians, regular referrals 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 advised by physician, regular for following up the treatments, frustration caused by the treatment procedures and thinking of not having a child, the pressures of family and society to have a baby as soon as they could, embarrassment 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 may lead to anxiety, depression and disturbed marriage relations among couples.

Most of the times, when the infertile couples are referred to clinical centers for obtaining required modern services, they see that the therapy service only aims at the treatment of their physical problem and psychological problems faced by infertile couple are not addressed properly or adequately (Hassani, 2010). Therefore neglecting of the psychological factors related to infertility and just considering these problems as medical one will create huge obstacles in understanding human beings as an integrative whole.
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 – 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 et al., 2005). The psychological reactions of the individual are in the form of despair, sadness, denial (Hemati Gorgani, 2001); sense of guilt (Hemati Gorgani, 2001; Saki et al., 2005); Depression (GarmazNejad, 2001; Hemati Gorgani, 2001); anxiety (Garmaz Nejad, 2001; Rayka, 2001); disappointment and hopelessness (Sadri Sayar, 2005; Saki et al., 2005; Seif, 2001); reduction of self esteem (Dehghanpour, 2001; Mirzamani, 2001); changing in the individual’s mental picture and feeling a change in the self identity comparing with healthy persons (Younesi et al., 2005); losing life control (Dehghanpour, 2001; Nilforooshan et al., 2005); changing in sexual identity (Khooshabi, 2001); marriage maladjustment (Dehghanpour, 2001; Mirzamani, 2001); sense of disqualification (GarmazNejad, 2001); life dissatisfaction (Seif, 2001); suicide (Dehghanpour, 2001); suspicion (Mirzamani, 2001).

Many infertile women believe that emotional distress (for example, tension or worry) is a contributing factor to their lack of natural fertility and lack of success with fertility treatment (Lord & Robertson, 2005). According to Ramezanzadeh et al., (2004) until 30 years ago, most researches on infertility were concentrated on the psychological differences between fertile and infertile women. There is much information about the psychological problems of infertile women. Staber (1982) and Splack and Cura (1968) found that infertile women attained higher neurotic scores in the Madzeli questionnaire as compared to fertile women (Ramezanzadeh et al., 2004). Fredman et al., (1985) showed that around 50% of women and 15% of men consider infertility as the most stressful experience in their lives. Dumber et al., (1993) stated that around 63% of the subjects, who had experienced divorce, believed that infertility was a more stressful experience. Anxiety and depression are regarded as general consequences of infertility and they have a significant relationship with infertility. Another research shows that around 40.8% and 86.8% of infertile women have depression and anxiety respectively (Ramezanzadeh et al., 2004).
Studies have focused on the relationship between sexual problems and infertility. The stress caused by infertility has direct effect on marital problems and it lowers sexual self-esteem, sexual satisfaction and frequency of intercourse. Further, infertility related stress worsens the relationship between couples either directly or indirectly through marital factors, health assessment, self-efficiency and love and affection between the couples and it has more detrimental effect on the quality of life of women as compared to their husbands (Ramezanzadeh, Aghssa, Jafarabadi, & Zayeri, 2006).

**Aim of the Present Study:**
To study the effect of Rational Emotive Behavior Therapy (REBT) on depression and irrational beliefs among infertile women;

**Objectives:**
In view of the above, this investigation is designed to study the effect of Rational Emotive Behavior Therapy on depression and irrational beliefs among infertile women. Hence, the objectives of the present study will be:

1. To compare the level of depression and irrational beliefs among fertile and infertile women.
2. To study the effect of REBT on depression and irrational beliefs among infertile women.

**Hypotheses**
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.

**Research Variables:**

*Independent variable:* Rational Emotive Behavior Therapy (REBT).

*Dependent variables:* Depression and Irrational belief.
Definition of Variables

A) Theoretical Definitions

Depression

Depression is the most common psychiatric disorder. It is a disabling condition that adversely affects a person's family, work or school life, sleeping and eating habits, and general health. The incidence of depression has increased every year in the past century, and now one out of six people will experience a depressive episode (First, Frances & Pincus, 2004).

Irrational beliefs

Froggatt (2005) describe a belief as ‘irrational’ if:

1. It blocks a person from achieving their goals, creates extreme emotions. It is distressing and immobilizes the person leading to behaviors which are harmful to oneself, others, and one’s life in general.
2. It distorts reality (it is a misinterpretation of what is happening and is not supported by the available evidence);

Rational Emotion Behavior Therapy:

Rational emotive behavior therapy (REBT) is the first form of cognitive behavior therapy (CBT) and was proposed by Albert Ellis in 1955. The essential premise of REBT is that people cause themselves distress and dysfunction by their habitual irrational beliefs, and these maladaptive thinking patterns can be changed, with resultant improvement in emotional states and functioning. Therapy involves training patients in rational self-analysis to help them become aware of their thought patterns and training them how to see their reactions in more constructive (i.e., rational) terms. They then have daily relearning exercises during which they practice their new thinking patterns termed rational emotive imagery several times a day (Rosner, 2011).
B) Operational Definitions

Depression:

In this study the term “depression” refers to symptoms of depression such as hopelessness and irritability, as well as physical symptoms as measured by the Beck Depression Inventory-II (BDI-II) (Beck, Steer & Brown, 1996).

Irrational Beliefs:

In this study the term “irrational beliefs” refers to irrational beliefs measured by the Shortened General Attitude and Belief Scale (SGABS) (Lindner, Kirkby, Wertheim & Birch, 1999) by subjects who obtain more than 65 scores in SGABS (Lindner et al., 1999).

Infertile Women:

In this study Infertility refer to inability of a married women or couple to have children and undergoing infertility treatment for at least more than one year.