

The Determinants of Depression and Anxiety in Turkish Infertility Patients:
Social Support, Sex Role Orientation, Infertility Causality, and Self-Esteem

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ABSTRACT

The Determinants of Depression and Anxiety in Turkish Infertility Patients:
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The present study investigated the effects of social support, self-esteem, infertility causality, and sex role orientation on anxiety and depression in Turkish female infertility patients. Additional aims of the study were to understand whether depression and anxiety could be attributable to infertility and also provide an empirical description of the infertility patients. Subject sample consisted of 100 female infertility patients and 39 female patients with gastrointestinal problems (control group) who applied to a hospital for treatment. The Beck Depression Inventory (BDI), the State/Trait Anxiety Inventory (STAI), the Social Support Scale, the Coopersmith Self-esteem Inventory (CSSEI), and the Bem Sex Role Inventory (BSRI) were administered. Findings revealed that infertility patients had significantly higher depression and state anxiety symptoms in comparison to patients with gastrointestinal problems. Moreover, not having a current job and a prolonged treatment duration were found to be as risk factors for depressive symptoms on the part of the infertility patients. Social support was found to be as a determining factor for depression, state and trait anxiety, in that, the infertility patients with low levels of social support had significantly higher levels of depression, state and trait anxiety symptoms. Analyses also indicated that, those who had low levels of self-esteem had increased levels of depression and trait-anxiety symptoms. Infertility causality was found to be affecting only depression, in that infertile subjects with female type of infertility causality had higher levels of depressive symptoms.

KISA ÖZET

Türk İnfertil Kadın Hastalarda Depresyon ve Kaygının Belirleyicileri:

Sosyal Destek, Cinsiyet Rolü Eğilimi, İnfertilite Nedeni ve Öz-Saygı

Bu çalışma, infertil kadın hastalarda sosyal desteğin, öz-saygının, infertilite nedeninin ve cinsiyet rolü eğiliminin kaygı ve depresyon üzerindeki etkisini araştırmıştır. Depresyon ve kaygının infertiliteye atfedilebilir olup olmadığını anlamak ve infertil hastaların psikolojik özelliklerini tanımlamak, araştırmanın diğer amaçları arasında yer almıştır. Örneklem, 100 infertil kadın hasta ve hastaneye mide/bağırsak şikayetleri ile ilgili tedavi amacıyla başvuruda bulunan 39 kadın hastadan (kontrol grubu) oluşmuştur. Beck Depresyon Envanteri (BDI), Durumluluk/Süreklilik Kaygı Envanteri (STAI), Sosyal Destek Ölçeği (SS), Coopersmith Öz-Saygı Envanteri (CSSEI) ve Bem Cinsiyet Rolü Envanteri (BSRI) uygulanmıştır. Sonuçlar, infertil hastaların depresyon ve durumluluk kaygı belirtilerinin mide/bağırsak problemleri olan hastalara oranla önemli ölçüde yüksek olduğunu göstermiştir. Bununla birlikte, herhangi bir işte çalışıyor olmamak ve uzamış tedavi süreci infertil hastalarında depresif belirtilerin kendini göstermesinde risk faktörleri olarak belirmiştir. Sosyal destek, depresyon ve süreklilik/durumluluk kaygı üzerinde belirleyici bir faktör olarak bulunmuştur. Bir başka deyişle, sosyal desteği az olan infertil hastalar önemli ölçüde daha yüksek depresyon ve süreklilik/durumluluk kaygı belirtileri göstermiştir. Yapılan analizler aynı zamanda, öz-saygıları düşük olan infertil hastaların artmış derecede depresyon ve durumluluk kaygı belirtileri gösterdiğini bulmuştur. İnfertilite nedeni yalnızca depresyon ile ilişkili bulunmuştur: Kadın faktörlü infertilite teşhisi almış kadın infertil hastalar daha yüksek seviyede depresif belirtiler göstermiştir.

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CHAPTER 1

INTRODUCTION

Importance of Infertility

It has been reported that one out of 10 couples of childbearing age have some type of fertility problem (American Society for Reproductive Medicine, 2004; Resolve, 1999). According to the Society for Reproductive Medicine, 6.1 million couples from all socio-economic statuses, age groups, ethnic backgrounds and both genders are affected by infertility (Resolve). The proportion of infertility patients has not changed, but along with technological improvements and a public awareness of treatment options, there is an increase in people's demands for medical help for this problem area (Keye, 1999).

The Definition of Infertility

The most popular definition of infertility that has been used in most of the reference books of infertility and human reproduction in general, is as the inability to conceive a baby after one year of regular sexual intercourse without using contraceptives (Keye, 1999).

ESHRE's (European Society of Human Reproduction) Capri Workshop Group (2001) definitions of the other conditions are as follows:

Sterility, subfertility, infertility: "Those couples who do not achieve pregnancy within 2 years include the sterile members of the population, for whom there is no possibility of natural pregnancy, and the remainder who are subfertile. Together, they comprise the infertile population" (p. 1518). The term sterility can be used either for male or female, whereas the term subfertile can be used for the couple.

If the couple has never conceived (%30 of infertile couples) then they are considered to be experiencing *primary infertility*. *Secondary infertility*, on the other hand, is defined as the failure to conceive by a couple who had previously conceived (%70 of infertile couples).

In general, evaluation and treatment of both categories are the same.

Causes of Infertility

Infertility has been historically perceived as the female's inability only, but after medical developments it is now known that 40% of infertility is attributed to female factors, and for another 40%, male factors appear to be leading to infertility. The remaining 20% is attributed to both partners, while 10% of this 20% is not attributable to neither of partner. If this is the case, then this type of infertility is called "unexplained" or "idiopathic" infertility.

Causes of female infertility:

- Adhesion (scar tissue) from previous surgery or pelvic infections
- Antisperm antibodies
- Blocked fallopian tubes
- Cervical mucus that does not allow the sperm to enter the uterus and fallopian tubes (cervical factors)
- Hormonal abnormalities
- Irregular ovulation or failure to release an egg
- Maternal age
- Repetitive miscarriages
- Unexplained infertility
- Uterine lining which is inadequately prepared

Causes of male infertility:

- Abnormal sperm motility
- Antisperm bodies
- Suboptimal sperm or lack of sperm (Cooper-Hilbert, 1998)

Environmental toxins, declining health conditions, medical problems, inappropriate

timing of sexual intercourse, stressful lifestyles, personal problems, vocational pressures, general mental health have all been blamed as contributors to infertility in both sexes (Mahlstead, 1987; Allgeier, 2000).

Medical conditions that may cause infertility:

- Endometriosis
- Cancers-testicular; ovarian, Hodgkin's disease
- Klinefelter's syndrome
- Turner's syndrome
- Rokitansky-Küster-Hauser syndrome

Medical conditions whose treatment may cause infertility:

- Male hypertension
- Cancers-testicular, ovarian- cervical, breast, Hodgkin's disease

Since the times of earliest civilization, the cultural norm has emphasized women's conceiving ability. The religions of Judaism, Christianity and Islam all associate fertility with high self-esteem, while also holding a view which considers infertility as a sign of condemnation (Feuer, 1983). Historically, there has been an idealization of women who become mothers. Assumption that woman's most important and defining role is that of being mother has been called the "myth of motherhood" (Hare-Mustin and Broderick, 1979) and the motherhood mandate (Russo, 1976). Zucker (1999) asserted that cultural influences had impacts on the psychological theories about women's identities, roles and positions in society.

Views of Infertility

Psychogenic Model of Infertility

Freud and Erikson's theories which are considered as significant theories of personality, related female development to biological and social functions of women who

were considered as the ones who are to bear and raise generations. Freud claimed that women can only resolve their Oedipal conflicts and become adults when they get pregnant, and preferably to a son (Freud, 1933; cited in Zucker, 1999). Erikson made a resemblance between women's worlds and the "inner space" of a womb. He argued that preoccupations with shelter, boundaries, peace and other needs which are elements of inner space are clearly observed in young girls (Erikson, 1968; cited in Zucker, 1999). Both Freud and Erikson were in agreement in that all women share a goal of becoming mothers and they regarded being unable to bear a child as a pathology. According to their theories, women's internal conflicts about womanhood, femininity, and motherhood had a role in their reproductive difficulties (Forrest and Gilbert, 1992).

According to widely accepted societal norms, all married couples should reproduce and all married couples should want to reproduce (Miall, 1986). These assumptions about parenthood lead to a belief that there is something wrong with the individuals who don't want to have children, who delay having children intentionally or who want to have children but are unable biologically.

During the 1950s and 1960s, 50% of infertility problems could not be medically diagnosed or treated and there was a trend of making psychological explanations of reproductive problems in terms of causality and treatment. These theories mostly focused on psychological and subconscious disturbances in women and neurotic conflicted feelings about motherhood or their own mothers prevented conception. Fischer (1953) appears to be one of the first researchers who examined the link between psychological distress and infertility. He defined psychogenic infertility as "sterility in a couple in whom no pathology or dysfunction can be demonstrated by any method available to us today" (p. 3). Labandibar (1959) and Kostic (1960; cited in Seibel & Taymor, 1982) examined the relationship between sterility and frigidity. Eisner (1963), in her study with 20 infertile females tried to investigate the

perceived psychological differences between fertile and infertile women using the Rorschach test. She stated that all of the women showed emotional disturbances and between 40-50% of infertility were related to emotional factors. Dawkins & Taylor (1961) moreover believed that infertile men and women showed signs of psychosexual maladjustments.

Studies supporting the psychogenic view of infertility continued in the 1970s. And Mozley (1976; cited in Seibel and Taymor, 1982) asserted that infertility could be caused by unconscious motivations on the part of the infertile person and that infertility “could be considered a defense against dangers inherent in the reproductive functioning” (p. 137).

The literature on the psychogenic view was limited because of several factors, which were; not using reliable measures but relying heavily on clinical impression, exclusively focusing on female infertility, and making assumptions on the causality without any clear evidence (Greil, 1997).

The psychogenic model of infertility was held until there were medical developments on the diagnosis and treatment of infertility. There have been more research studies being conducted and lots of studies revealed that there were no differences between the personality traits of infertile women, when compared to fertile women. In cases where there were differences, it was impossible to link the psychological differences to infertility (Greil, 1997). Moreover, during the past 20 years, unknown factors leading to infertility have been reported as 5% or less, and use of psychological factors as the cause of reproductive failure has begun to lose its importance.

Stress and Coping View of Infertility

Lazarus and Folkman (1984) defined psychological stress as the “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (p. 21). Contrary to traditional

psychoanalytic view, the stress and coping model holds the view that there are different responses to particular reproductive difficulties (Zucker, 1999). Moreover, everybody is considered as unique in their reactions to stress depending on their coping resources.

According to Lazarus and Folkman (1984) cognitive appraisal is a process of classifying an event in order to understand how the event will impact the individual. This process is evaluative by which an individual assigns meaning to an event. Cognitive appraisal consists of two processes which are primary appraisal and secondary appraisal. Primary appraisal is evaluating an event as irrelevant or stressful. Secondary appraisal is also an evaluative process in which the individual determines which coping actions are available (for example, avoidance, minimizing, generating alternate solutions etc.), whether a specific coping option will lead to the desired goal and if that coping option can be successfully applied. According to Lazarus and Folkman (1984), secondary appraisals and primary appraisals act together, shape the amount of stress and the intensity of emotional reaction.

When examining the stress caused by infertility, the “cognitive theory of stress” is useful because in this theory, the unique characteristics of the individual and the unique qualities of the individual’s environment are taken into account. According to this theory, there is a bidirectional relationship between individual factors and environmental factors, and these factors lead to a unique emotional reaction.

Psychological Distress and Infertility

Although infertility is a medical condition, its diagnosis affects the couple’s lives on many dimensions. Infertility is generally appears as an unexpected life changing event.

Research indicates that the emotional experience of infertility generally has two components: chronic stress and the experience of loss. Although infertility is usually linked to a physical problem of a couple, the stress and loss associated with infertility can have serious

impact on psychological, physical, economic, and social well-being. Many studies have indicated that the problem of infertility is experienced as a crisis or major life stressor which may have negative effects on infertile individuals (Abbey, Andrews and Halman, 1991; Higgins, 1990).

The research studies in the last 20 years have contributed to the literature significantly by helping us to understand the nature of emotional impact of infertility on couples and individuals. Studies have shown that infertility is linked with emotional responses such as depression, anxiety, guilt, social isolation, and decreased self-esteem in men and women (Abbey et al. 1991; Bolter, 1997; Connolly, & Cook, 1987; Greil, 1997; Grover, Gannon, Sherr, and Abel, 1996; Hjelmsteadt, Andersson, Skoog-Svanberg, Bergh, Boivin and Collins (1999); Morin-Davy, 1998; Myers, 1990; Newton, Sherrard, and Glavac, 1999; Sadler & Syrop, 1998).

Female Emotional Response

Psychological factors were once thought to be causing infertility in nearly 50% of women experiencing it (Cook, 1987; Denber, 1978). Through the 1980s, the psychological literature on infertility focused on psychogenic causes such as grief, fear or anxiety. The popular view of infertility was perceiving infertility as caused by the woman's psychic conflicts about becoming mother or about becoming a mother or becoming pregnant (Kraft, Palombo and Mitchell, 1980). Additionally, women were thought to be creating her infertility by having done something wrong. Gender role behaviors which were seen as inappropriate for women, such as being educated and working, were believed to be causes of unexplained infertility (Morse and Van Hall, 1986). When an organic cause could not be found, women were diagnosed with a psychological condition. Emotional problems were seen as the cause, not as a consequence of infertility.

Although the view that psychological conflicts or problems lead to infertility has changed a lot in the last century, there is still a common belief that distress causes infertility in many women. There have been a lot of advice given to infertile individuals such as “just relax, it will happen”, “take a vacation” or “stop worrying too much” (Domar, 2002). All of the recommendations contain an idea that women have control over their infertility and so may be the one causing it.

The relationship between infertility and distress is a little complex. Studies which have investigated this relationship have not identified a causal direction (Edelmann and Connolly, 1986; Henriksen, 1999; Stanton, Sears, Lobel and DeLuca, 2002), and there is little evidence to support the idea that stress causes infertility. However, there is evidence which supports that infertility causes stress (Domar, Zuttermesiter and Friedman 1993)

Women have been found to experience more distress throughout the infertility process than men in the form of high anxiety, poor self-image, lower life satisfaction (Wright, Duchesne, Sabourin, Bissonnette, Benoit and Girard, 1991; Daniluk, 1997; Daniluk, 1988; Bernt, Bernt and Tacke, 1992; Kowalcek, Wihstutz, Buhrow, and Diedrich, 2001; Van Balen and Trimbos-Kemper, 1993; Wischmann, Stammer, Scherg, Gerhard and Verres, 2001; Lee and Sun, 2000; Fido, 2004; Lu, Yang and Lu, 1995; Lee, Kau, Lee and Lee, 1995; Domar and Seibel, 1990; Halman, Andrews and Abbey, 1994; Kee, Jung and Lee, 2000) and lower self-esteem (Wright, Duchesne, Sabourin, Bissonnette, Benoit and Girard, 1991; Xu, Ke and He, 1994; Lee and Sun, 2000) in certain research studies.

Some researchers have argued that, this situation could be because of the social pressures on women to become mothers (Abbey et al., 1991; Becker and Nachtigall, 1994; Ulrich and Weatherall, 2000). Regardless of which individual has the medical problem, in the general public and medical profession there has been a tendency to view infertility as the woman's problem (Berg, Wilson and Weingartner, 1992; Greil, 1991).

Women are more likely to see their inability to conceive as a direct reflection on their identity and their self-image, especially competent and successful women (Daniluk, 1997).

Women also are more eager to get medical treatments than men, stick more to the goal of being parents (Greil, 1997)

There is a significant study conducted by Domar, Zuttermesiter and Friedman (1993) which has shown that the levels of depression in infertile women are similar to those found among individuals with chronic illnesses such as cancer, myocardial infarction, postoperative bypass surgery, high blood pressure and HIV positive status.

Another line of research suggests that women and men experience different psychological reactions to infertility (Morrow, Thoreson and Penney, 1995). Some authors suggest that the differences in reactions to infertility depend on who carries the primary diagnosis. When the infertility is male-related, Leiblum (1987) found that men experience stress at levels similar to women who are diagnosed as infertile. Women, however, express higher levels of stress regardless of who carries the primary diagnosis of infertility.

Research studies have reported different reactions to infertility. The researchers explain this difference in the studies that investigate infertility-distress by individuals' different reactions to environmental stressors. Lazarus and Folkman's (1984) cognitive-phenomenological theory of stress have been used a lot in assessing individual reactions to situations and it is thought to explain women's various reactions to infertility.

Since infertility is a prevalent condition, it is important to get an insight about its psychological impact. Because most of the research studies-as stated above-indicate that women have higher levels of distress than men, and because women have been treated more for infertility-related problems than men (American Society for Reproductive Medicine, 2004), it is important to focus particularly on women's experience of infertility.

Infertility as Reproductive Trauma

Infertility is conceptualized as a *reproductive trauma* by Jaffe, Diamond, and Diamond (2005). The authors make a definition of trauma as “any event that goes beyond the range of usual human experience and is overwhelming to the person in a physical and/or emotional way. It is a threat to integrity of the person himself or someone he cares about” (p. 4). Flashbacks, hypersensitivity and irritability occurs generally in addition to a sense of numbness and withdrawal. Trauma also causes anxiety, depression and concentration difficulties on the part of the traumatized person. Being diagnosed as an infertile patient can be considered as a traumatic experience according to Jaffe et al. (2005). Since reproductive functioning is a crucial aspect of people’s physical selves, when there are problems regarding it, the infertile person feels loss and despair, perceives this condition as a serious threat to his/her relationships and several other psychological problems may appear. Experiencing the trauma of infertility is like losing everything that you think you already have. The authors further state that infertility patients re-experience this trauma again and again, in a constant way by feeling loss after every unsuccessful treatment attempts

Menning (1977) referred to infertility as a developmental crisis that can threaten a couple’s future goals, while Shapiro (1982) described the impact of infertility as a “brutal and unanticipated shock” (p. 387). It is estimated that fifty to sixty percent of the couples will eventually conceive, compared to only 5% who would conceive if they did not seek medical interventions (Andrews, Abbey and Halman, 1991; Shapiro, 1982).

Once an infertility diagnosis is made, the lives of the individuals begin to change dramatically and they experience a real difficulty in terms of their emotional and financial resources (Braverman, 1997; Domar and Kelly, 2002; Cwikel, Gidron, and Sheiner, 2004). Fertility treatments, ranging from medical monitoring to hormonal treatments and in vitro fertilization (IVF), carry physical, economical and emotional burdens on women and their

partners. A couple that is trying to conceive feels frustration and disappointment if a pregnancy is not easily achieved (Cwikel et al, 2004). If the difficulties continue and the man or woman is labeled as having fertility problem, then this may have a negative impact on self-esteem, body image, and masculinity or femininity (Cwikel et al. , 2004).

Childbearing is an important goal for a marriage and not being able to have children may cause problems in the marriage. The study conducted by Ramezanzadeh, Aghssa, Abedinia, Zayeri, Khanafshar, Shariat, and Jafarabadi (2004) is especially important for the conceptualization of this study on Turkish sample consisting of infertile couples since Turkey is also an Islamic country. Ramezanzadeh et al. (2004) mentioned the differences between Islamic vs. non-Islamic countries in terms of the social conditions, pressures upon the infertile couple and women's identities. They talked about the importance and value of childbearing in Islamic and eastern countries such as Iran. Moreover, according to the authors, having a child provides some sense of stability for the marriage and leads to increased marital satisfaction. They stated that, in their culture and society, negative attitudes to infertility are detrimental. They continued in their assertion by saying that having a child is psychologically or effectively, a vital factor for women, and the absence of children may cause marital problems such as divorce or even a second marriage especially in Islamic societies where it is possible for men to marry with more than one woman. Intervention of relatives especially husband's family, negative attitudes and behavior of family, friends, neighbors, etc were also stated by them as causing psychological problems for infertile women. Generally infertile women experience negative social consequences including marital instability, stigmatization and abuse. Infertility was considered by them as having a serious effect on both the psychological well being and social status of women in their country. This discussion is very much related to the present study since Turkey is also an Islamic country and the social conditions of women are much the same in the rural regions. Çanakçı, Ö. (1992) also made a study on

infertile women and the differentiating factors for the impact of social pressures. She found that working and highly educated women

Role of Infertility Diagnosis on Psychological Distress

One other area of focus has been how the diagnosis of a specific infertility factor affects men and women psychosocially. There have been a considerable amount of research studies that have investigated the relation between the infertility diagnosis (male factor, female factor, combined factor or unexplained) and psychological distress.

One of the views regarding the relationship between the causal factor and psychological distress is that, the experience of infertility differs according to which partner is viewed as “causing” the infertility. Miall’s (1986) study showed that women who were infertile had more difficulty coping with the problem than women whose husbands were the source of infertility.

In another study, Demyttenaere, Bonte, Gheldof, Vervaeke, Meuleman, Vanderschuerem, and D'Hooghe (1998) examined the influence of depression levels and coping on IVF outcome in women, taking into account the cause of infertility. They included 98 participants who were undergoing IVF treatment in their study and administered psychometric tests at the first visit (day 3) of the treatment cycle. After the patients had their pregnancy tests, the authors looked at the depression levels of the patients at their first visit to the hospital. The authors found that, the non-pregnant group reported increased negative emotions. For the patients with a female indication for IVF, increased depressive symptoms were associated with lower pregnancy rates, whereas in the subgroup with a male indication for IVF, increased depressive symptoms were associated with higher pregnancies. The authors concluded that expression of negative emotions predicts depression levels and outcome in

IVF. They additionally stated that the cause of infertility should be taken into account when investigating the relation between psychological functioning and outcome in IVF.

There were also studies which have taken couples as the unit of analysis and comparisons were made across sexes.

In a study conducted by Bernt, Bernt and Tacke (1992) three groups of sterile couples with functional (unexplained), tubal and andrologically caused sterility were compared for the evaluation of sex-and diagnosis-dependent kinds of overcoming of their disease. Anamnestic data, anxiety, the coping strategy of sterility and as well the couple and personality structure are analyzed. Independent of the organic cause of sterility the women showed a higher emotional reaction level (anxiety, coping stress) than their husbands.

Several other studies support the view that women tend to show more distress than men regardless of the nature of the infertility diagnosis, that is to say, whether it is a male or female factor leading to infertility. Lee Sun, and Chao (2001) conducted a study on Chinese couples. They compared the differences in distress, marital and sexual satisfaction in husbands and wives based on an infertility diagnosis. The results showed that there were no differences in marital and sexual satisfaction between wives and husbands with unexplained infertility. Only wives with a diagnosed female infertility expressed higher distress regarding infertility than their husbands. Although no differences in psychosocial responses were found among husbands, regardless of the diagnosis, wives with a diagnosed female infertility experienced higher distress in self-esteem and less satisfaction in acceptance by in-laws than wives experiencing a diagnosed male infertility. The authors emphasized that the diagnosis of infertility was an important factor in assessing the differences in infertility distress and marital and sexual satisfaction between husbands and wives.

Wright et al. (1991) stated that women with female, male or combined diagnosis reported significantly higher BDI scores when compared with women with unexplained

infertility. There were no differences between male and female factor diagnosis.

Moreover, Daniluk's (1992) study showed that women could also attribute infertility to a biological failure or past abortions or extra-marital affairs even when the infertility was caused by "male factor". On the basis of these findings, women may also be considered to feel responsible for every kind of reproductive difficulty and may lose their contact with real situations. Another study conducted by Robinson and Stewart (1996) confirms these results in that the authors reported that in cases where the cause of infertility was undetermined women were more likely than men to attribute it to themselves.

Edelmann, Connolly and Bartlett (1994) examined the extent to which the psychological profiles of couples entering an IVF program were influenced by evidence of previous fertility, the history of fertility investigations, the diagnosis made, and the coping strategies adopted. A sample of 152 couples was administered a number of standardized psychological instruments and a coping strategies questionnaire. They showed little variation from the normative range on the standardized measures. There was little evidence of differences between couples referred for primary or secondary infertility, between those with some evidence of fertility and those with none, or between different diagnostic groups.

A study examining the sexual function of infertile couples in which the husbands received an azospermia diagnosis found that more than half of the men experienced a period of impotence following the diagnosis (Berger, 1980). One study showed that men with a diagnosed male infertility expressed more negative emotional responses than men without a diagnosed male infertility with respect to feelings of stigma, loss and self-esteem (Nachtigall, Becker, and Wozney (1992). The authors also reported that the gender identity for all women, regardless of the presence or absence of diagnosed female infertility, was negatively affected.

Fassino, Piero, Boggio, Piccioni and Garzaro (2002) recorded the personal characteristics of 156 infertile and 80 fertile couples, and measured their degree of

psychopathology. When the researchers divided the couples according to the nature of the infertility-organic, functional (unexplained)-they found that anxiety, depression, and a tendency toward anger suppression were predictors of the diagnosis of organic or unexplained infertility in women, with 97 percent accuracy. For infertile men, anxiety was also an important independent predictor of unexplained infertility, while depression was more predictive of organic infertility. However, with men - unlike women - anger did not appear to influence infertility in men. The authors concluded that, on the bases of the results which suggested a poor psychological functioning beyond the distress created by infertility, there might be a need to identify a subgroup of infertile subjects.

Social Considerations

The influence of culture plays a great role in male and female responses to infertility. Parents, tradition, social norms, and religion all play an important role in the transmission of values and gender roles to children. Cultural and gender distinctions are made between boys and girls from the moment they are born. The toys they play with differ according to their genders. Girls are given mostly toys that are related with their femininity, and caring such as dolls, cooking pots, and more home-related objects, while boys on the other hand are given more “manly” toys like trucks, things related with sports, and guns (Deveraux and Hammerman 1998). Moreover, girls are more rewarded when they exhibit feminine behaviors like caring, while boys are more encouraged to show their toughness and manly attitudes.

Abbey, Andrews and Halman (1991) talked about the differences in male and female responses to infertility by identifying the different socialization process of both sexes as one of the contributing factors. Although both men and women are socialized in regards to parenthood, there seems to be much more emphasis on the female’s role in motherhood in comparison to male’s role in fatherhood. Chodorow and Rich (cited in Daniluk, 1997) noted

that although both men and women believe that parenthood is a developmental issue for them, society identifies motherhood as the central and defining role for women. Daniluk (1997) stated that even though women have more alternative roles currently, “motherhood” still continues to be the primary and defining role for them. Women are under the influence of the cultural system such that infertility appears to be not only a medical diagnosis but also a definition of themselves. For this reason, having an infertility problem can be considered as an attack on “female identity”. Since infertile women can not meet the cultural expectations of motherhood, they experience feelings of loss and depression as Daniluk (1997) mentioned. In addition, if the infertile women’s friends become mothers and start to focus more on household activities and child care, their friendship comes to second place. So women face another situation where they feel excluded from lives of close women in their lives. On the other hand, these losses of relationships are not that great for men, as stated by Daniluk (1997).

Infertility is like a barrier between the spouses and they experience a real difficulty in fitting to the gender roles emphasized by the culture. Women who are infertile have no ability to actualize the “mother” role, while men don’t have the ability to show the culturally emphasized masculine role. This situation is very much connected with the couples’ feelings of loss and depression. They in a sense lose a part of themselves, and feel that their identities are in question.

Infertility and Depression

Major depression is said to be twice as prevalent in women as it is in men in the general population (Llewelyn, Stowe, and Nemeroff, 1997). There has been a considerable amount of research reporting depression as a consequence of infertility (Domar & Seibel,

1990; Leader, Taylor & Daniluk, 1984; cited in Domar, Broome, Zuttermeister, Seibel and Friedman, 1992).

There are some studies which demonstrate a reciprocal relationship between psychological factors and infertility, which in turn affects treatment success. Beaurepaire, Jones and Tennant (1993) found that there was a significant difference between the level of depressive symptoms observed among women entering IVF for the first treatment and repeat cycle women. Clinically elevated depression scores were most prevalent among repeaters (25%), relatively prevalent among first time patients (15%), compared to community norms (12%). Furthermore, among the first cycle women those with symptoms of depression were less likely to achieve pregnancy than non-depressed women. This study was important for its demonstrating the reciprocal relation between depression, the psychological distress created by infertility and IVF outcome. Newton, Sherrard and Glavac (1999) conducted a study which showed that there were significant increases in the prevalence of mild-moderate levels of depression in women following failure of an IVF treatment. Predisposition toward anxiety, pre-IVF levels of depression and nulliparity were predictors of opposite psychological reactions to IVF-failure.

Many women feel that fertility treatment has significant impact on their psychological health. Freeman, Boxer, Rickels, Tureck and Mastoinni (1985) found that approximately half of women who were under infertility treatment rated infertility as the most stressful experience of their life, in comparison to only 15% of men under the same treatment. Another study conducted by Oddens, Tonkelaar and Nieu (1999) compared infertile women waiting for IVF treatment and women without infertility problems. The study results showed that infertile women had four times more depressive symptoms than the control group of fertile women. The authors also reported that infertile women's scores on self-assessed attractiveness, anxiety, memory/concentration were lower than the scores of the control group.

Hynes et al. (1992) compared women who had a failed IVF cycle with a control group (included women who did not have any form of infertility treatment) both before and after the IVF cycle. While the difference between the depression scores of the two groups was not significant before the IVF cycle, the difference in depression scores after the failed IVF cycle was significant. The treatment group had high levels of depression before the IVF failure, so the authors stated that the treatment failure led to more depressive mood which was already present.

Domar and her colleagues (1992) conducted a study examining the prevalence rates and predictability of depression in infertile women. 376 infertile patients were recruited for the study from an infertility treatment center. A control group of fertile women was obtained through patients from a hospital based on gynecological practice. Participants were asked to complete two depression measures, the Center for Epidemiological Studies Depression Scale (CES-D) and the Beck Depression Inventory (BDI). The (CES-D) scale was specifically designed for research. Participants were also asked to complete a demographic form measuring age, duration of infertility, length of infertility treatment, past treatments, primary or secondary infertility, infertility diagnosis, and history of psychotherapy. The results of the study indicated no significant differences between infertile women and fertile women in terms of demographic variables. However, the mean BDI score of infertile women (8.3) was significantly greater than that of the control group. Comparisons between the two groups were also significant when measured by the CES-D. Compared with control subjects, a significantly greater percentage of infertility women scored in the depressed range on the BDI (37% compared to 18%). It was also noted that none of the control subjects reported depression levels greater than 18, while 8.4% of infertile women scored above 18.

A history of infertility-related surgery (higher BDI) and a history of psychotherapy before the treatment periods were among the demographic variables which influenced

depression outcomes. Duration of treatments were also related to depression as women in the 2-3 year range of treatments reported significantly higher levels of depression than women with durations less than one year or greater than six years. Diagnosis was also predictive of depression. Women with female, male, or combined diagnosis reported significantly higher BDI scores when compared with women with unexplained or undiagnosed infertility. There were no significant differences between male and female factor diagnosis. The findings of the study showed that depression was a significant problem among infertile individuals.

A study conducted among Chinese women in Hong Kong examined the psychological consequences of infertility and treatment failure. The researchers used General Health Questionnaire in their study and they reported that the prevalence of distress increased from 33 to 43% after treatment failure while the prevalence of depression remained constant (8%). The results of the study also identified the duration of infertility as a predictor of the severity of depression (Lok, Lee, Cheung, Chung, Lo and Haines (2002). This result about positive relation between the duration of infertility and depression is in contrast with Domar et al.'s study's results which showed a U-shape relation between the two (Domar et. al, 1992).

Another study's (Verhaak, Smeenk, Kremer, Braat and Kraaimaat, 2002) findings showed that after a failed first treatment cycle, the couples showed an increase in depression and one in eight women had a clinically significant form of depression.

In a study conducted by Downey and McKinney (1992), the psychiatric status of 118 women who were under infertility evaluation were examined. The scales that were used in the study were Reproductive Functioning Questionnaire, the Ideas About Your Future Questionnaire, the Attitudes of Family Questionnaire, the Partner Relation Relationship Satisfaction Scale, the Concept Scale, The Brief Symptom Inventory, and the Mood Disorder Questionnaire. Although not statically significant, the authors noted that 11.0% of infertile women in the study met criteria for a current major depressive episode compared to only

3.6% of the control group. Infertile women and women in the control group experienced depression similarly. Although the findings seem to be contradicting to Domar's (1992) findings, it is difficult to make comparisons between the two studies since they used different instruments (BDI and CES-D compared with the Brief Symptom Inventory and the Mood Disorder Questionnaire).

Lapane, Zierler, Lasater, Stein, Barbour and Hume (1995) conducted a study examining the potential association between a history of depressive symptoms and having infertility diagnoses in women. They collected data from the household health survey of the Pawtucket Health Program which is a biannual study conducted between 1981 and 1990. The study selected a sub-sample of 2920 women ages 18 to 45 who participated in the PHHP and sent them a data collection instrument measuring their history of depressive symptoms, antidepressant medication use, history of sexually transmitted diseases, and history of infertility. The results showed an association between a history of depressive symptoms and a two-fold increase in risk for infertility. These results were similar to a study, which found that women who were "unable to conceive after 12 months of unprotected intercourse were twice as likely to report a history of depressive symptoms prior to attempting to conceive as women who were successful in conceiving within a 12-month period (Wagner & Berenson, 1994).

Özkan and Baysal (2006) identified a negative relationship between depression and employment, economic status and education of infertile women. They also stated that infertility, infertility treatment and marriage duration were positively correlated with depression and other psychological symptoms.

Infertility and Anxiety

Anxiety is one of the most common emotional reactions among IVF patients.

Women's anxiety levels usually increase throughout the course of the treatment and peaks as they wait for the treatment outcome after oocyte retrieval and embryo transfer (Laffont and Edelmann (1994). The elevation of anxiety has many causes. Diagnostic and intervention procedures, which are often long and intrusive, include physical pain, disturb the patient's daily routine, and have a negative impact on the sexual relationship of the couple. Moreover, patients often perceive IVF treatment as their very last chance of childbearing and may have unrealistically high expectation of the treatment.

Cook, Parsons and Mason (1989) stated that anxiety is the major difficulty facing patients during infertility. Edelmann and Golombok (1989) suggested that anxiety may induce hyperprolactinaemia and this may have a connection with reduced conception rates.

In a study conducted by Ozkan and Baysal (2006), the prevalence, severity and predictability of psychiatric symptoms of infertile women and the effects of infertility on marital and sexual relationships were investigated. The authors included 50 infertile and 40 healthy participants in the study and used State trait Anxiety Inventory and Beck Depression Inventory as measures. They found depression and anxiety to be significantly higher in the infertile group.

For women who have been dealing with infertility problems, the support from their spouses has a significant role on their well-beings. In a study conducted by Matsubaytashi, Hosaka, Izumi, Suzuki, Kondo and Makino (2004), anxiety and depression in childless Japanese women were found to be significantly associated with lack of their husbands' support and feelings of stress. Brigenti, Martinelli, Ardenti and La Sala's study (1997) also revealed that state and trait anxiety of infertile women were influenced by the level of marital satisfaction.

Gulseren, Cetinay, Tokatlioglu, Sarikaya; Gulseren and Kurt (2006) explored anxiety levels in infertile Turkish women and they concluded that; along with age, attempts at non-

medical solutions and pressure from the husband's family's pressures, anxiety was a variable that predicted pregnancy negatively.

Eugster, Vingerhoets, van Heck and Merkus (2004) compared episodic anxiety's predictive value on treatment outcome after the second IVF and ICSI with the predictive value of trait anxiety and acute anxiety. The authors made an operational definition of episodic anxiety as high state anxiety. The results of the study showed that women with episodic anxiety were less likely to become pregnant after the second IVF/ICSI.

Beaurepaire et al.'s study results also showed that a significant percentage (31%) of patients experienced clinically significant levels of state anxiety, while level of trait anxiety was comparable to normative groups. Cook et al. also found high levels of anxiety among infertile women.

Demyttenaere, Nijs, Evers-Kiebooms and Koninckx (1991) found higher levels of anxiety by using the State Trait Anxiety Inventory (STAI) in women undergoing IVF as compared to normative groups

Anxiety was suggested to be an outcome of an unsuccessful infertility treatment in a major amount of studies Verhaak et al. (2002)'s study showed that women showed increased anxiety levels after a first failed treatment cycle.

Leiblum, Kemmann, Colburn, Pasquale and DeLisi (1987) assessed distress level of 28 women who had unsuccessfully completed one or more trials of in vitro fertilization (IVF) and found that between 20 and 42% of the women experienced increased levels of anxiety.

Infertility and Self-esteem

Infertile women also appear to have worsened self-esteem in several studies. There is a consensus that self-esteem and grief are commonly experienced by infertile women. Results of the study conducted by Wright et al. (1991) indicated that women showed more distress in

self-esteem compared to their partners.

In another study on a Chinese sample, the authors (Xu L, Ke HX, He FF., 1994) pointed out that women who were in an infertility treatment for a long time had low self-esteem.

Similarly, Lee and Sun (2000)'s study on Chinese infertile couples, demonstrated that husbands' levels of self-esteem were significantly higher than their wives. In another non-Western country, Taiwan, Lee TY, Sun GH, Chao SC. (2001), the researchers found that wives who were diagnosed with female infertility experienced higher distress in self-esteem and less satisfaction in acceptance by in-laws than wives experiencing a diagnosed male infertility.

Downey and McKinney (1992) conducted a study in which they examined the psychological status of infertile women. 75% of the women reported significant changes in their moods and over 1/3 reported decreased levels of self-esteem.

A qualitative study conducted by Greil et al. (1988) revealed that women reported a great difficulty adjusting to loss, as well as showing higher levels of depression, anger and self-esteem.

Brigenti et al.'s (1997) study showed that self-esteem was one of the factors that helped women to deal effectively with the infertility condition and its treatment. Women with high-self esteem had less distress.

As demonstrated by this review, while the majority of studies found that women experiencing infertility also experiences distress, there is a wide range of distress reactions to the experience of infertility. Thus, it is important to begin to isolate the different variables that may predict increased levels of distress in women experiencing infertility. Below, there will be a focus on some specific potential predictors of distress which are hoped to be a

contribution to the literature regarding which variables may lead to distress in women experiencing infertility.

Gender Role Identity and Infertility

There has been a view which asserts that a person's gender role identity affects his or her behavior in different environments and situations. Along with this perspective, women's infertility experiences can be thought of as being affected by their gender role identities. Women's gender roles have been defined by traditionally expressive and motherly characteristics like softness, sensitivity, and emotionality (Perkel, 1985). For women, motherhood is seen as something biological performance to be actualized, one of the most significant life roles and women are mostly defined by their ability to become mothers (Berg, Wilson and Weingartner, 1992; Mahlstedt, 1985). Because of the social norm that women should bear children, those who can not bear children are seen as violating gender role norms. Hare et al. (1979) found that in their sample woman's identity was dependent on motherhood and that not having children was viewed as unnatural and selfish.

Women who have more traditional gender role identities can be more likely to experience more distress as a result of their infertility since they may feel they have failed to meet the traditional gender roles. In contrast, women who are less invested in traditionally expressive gender role identities may be more likely to experience less distress because of infertility. There have been some studies in the literature which have examined the relationship between gender role identity and infertility.

Cook's (1993) research focused on the relationship between gender roles and emotional well-being in infertility patients; specifically state-trait anxiety, depression, marital adjustment and sexual adjustment. He assessed 58 women and 31 men who were about to start an IVF or donor insemination at an infertility clinic using the Bem Sex Role Inventory

(BSRI) which consisted of four categories of gender role identity: masculinity, femininity, androgyny, and undifferentiated. No differences were found on measures of depression, marital adjustment, or sexual functioning between feminine gender-typed women and masculine gender-typed women. However, the feminine gender typed women reported significantly higher levels of anxiety than masculine gender typed of women.

Edelmann and Connolly (1996) investigated the effect of gender role identity on psychological functioning (anxiety, depression, and marital functioning) in 130 couples presenting with undiagnosed primary infertility on their first visit to a fertility clinic. The investigators used the BSRI. Scores for the four gender role groups were similar on all measures except that masculine women reported slightly higher anxiety scores and lower marital adjustment than the other three groups. These results contradict with Cook's (1993) results who found higher anxiety in feminine gender typed women and no difference in marital adjustment among the four gender role classifications.

Adler and Boxley (1985) examined gender roles and coping styles of 103 fertile 20 infertile, and 41 formerly infertile individuals who succeeded to conceive. Self-esteem, body image, marital adjustment, psychiatric symptoms, and self-defeating behaviors were measured and compared in terms of gender role types. The participants were chosen among patients from private infertility clinics, private obstetrics and gynecology practices. Those participants who scored higher on masculinity and androgyny experienced fewer problems coping with infertility distress and self-esteem than those who were feminine and undifferentiated. No differences were found in coping styles between the fertile, infertile and formerly infertile patient groups.

Perkel (1985) examined the relationship among infertility, self-esteem, psychopathology, gender role identity, and the social meaning of parenthood. His study included 26 infertile couples and he measured gender role identity with BSRI. He found

significant differences between the self-esteem scores of androgynous and feminine infertile individuals in that, androgynous individuals showed higher levels of self-esteem. These results support Adler and Boxley's (1985) findings that androgynous gender typed women had higher self-esteem levels, while on the other hand conflict with their findings that masculine typed women experience higher levels of self-esteem than feminine gender typed women.

In another study conducted by Berg et al. (1992), the psychological reflections of infertility treatment were investigated. The authors specifically looked at gender differences and gender role identification. They used the PAQ to assess gender role identity and two classifications of gender role identity, being masculine and feminine, were identified. Their sample included 104 married couples without children with primary infertility. The emotional strain, marital satisfaction, and sexual satisfaction of the couples were explored. In men and women, masculinity was related to lower levels of distress, femininity was related to increased satisfaction, and both masculinity and femininity were related to increased marital satisfaction. The authors asserted that gender role identification predicted distress for individuals experiencing infertility more than gender did. However, Berg et al.'s (1992) study can be considered as having limitations in the sense that they used only two categories of gender role instead of four.

Collard's (1999) research explored the influence of etiology of infertility, gender role identity, and attribution of responsibility on psychological distress and marital and sexual functioning. The researchers took couples as participants which consisted of 84 females and 74 males. They had been diagnosed and had primary infertility. Gender role identity was measured by the Short Form of the BSRI. Collard found that the participants with androgynous gender role identities reported significantly higher levels of marital intimacy than individuals with masculine, feminine and undifferentiated gender role identities. Women with

masculine gender role identities showed significantly higher levels of depression, anxiety, and hostility than those with feminine or androgynous gender role identities. These results differ from Cook's (1993) study's results in which the depression levels of masculine and feminine gender typed women were not found to be different, and feminine gender typed women had higher levels of anxiety. However, these results of Collard's which showed that masculine gender typed women had higher anxiety levels were consistent with the findings of Edelmann and Connolly (1996).

Masculinity was associated with lower emotional strain and greater marital satisfaction for both men and women and enhanced sexual satisfaction for men. Femininity was related to enhanced marital and sexual satisfaction for both genders (Berg, Wilson, and Weingartner, 1991). In terms of exploring the relationship between femininity and psychological distress, more research studies are needed to make healthy assumptions.

Social Support and Infertility

Research studies on the social support system of infertile couples have generally focused on the perceptions of the infertile individuals themselves (Miall, 1994). According to Greil et al. (1988) the experience of being infertile is not an issue just between the couple and their doctor but also family and friends also get into the picture. Social support, whether it is familial, peer or spousal, can be conceived as something that lowers the level of stress against the negative effects of a stressful situation. The fact that infertility is a stressful event is affected by the influence of stigma and infertile couple's feelings of failure when trying to act according to the social norms.

Matt and Dean (1993) have argued that support from friends serves to provide a reference point where one evaluates his/her own health and social role, so this communication net can be considered as protective against self evaluation. This support system acts as a

buffer in which the person appraises himself positively. Miall (1994) on the other hand argued that the social support provided to infertile individuals generally increases the stress levels of infertile individuals instead of decreasing. Miall (1994) asserted that if social support is offered by presenting an evaluation base for one's health and social roles, an emphasis on the biological cause may lead to feelings of inadequacy, incompleteness rather than an emotional support, on the part of women. For this reason, social support may have a negative influence on infertile individuals. The social context in Asian/Eastern countries supports this view. Boonmogkon (1995) stated that in resource-poor countries where children are highly valued for cultural and economical reasons, childlessness often creates enormous problems for couples; women are the ones who are blamed mostly for infertility. Motherhood is often the only way for women to get a higher status in their family and community. In some places, the women are isolated because of their inability to get pregnant. Boonmogkon mentions the attitudes of the close relatives and in-laws in underdeveloped countries: In Mexican society, if no pregnancy occurs after several months after the marriage of the couple, the mother, mother-in-law, or another older women in the family use some remedies to warm the woman's body. Also, In Pakistan, in-laws have strong influence on women who experience infertility, and they are one of the main factors for seeking treatment (Boonmogkon, 1995)

Abbey et al. (1991) also stated that significant people who are to be expected to provide social support may recommend solutions that are stigmatizing and behave in ways that can be considered as unsupportive.

Another factor that increases the stress and emotional effect of infertility is the belief that most people have, which is thinking of infertility caused by the psychological characteristics. Miall (1994) talked about the common belief about what all the infertile couples need is to relax or take a vacation or that they are trying too hard. These thoughts may carry well intentions but also carry wrong information; they moreover are perceived as

stigmatizing and demanding on the part of the couple. Since this attitude to infertile individuals are widely seen, one can perceive social support as can be experienced in a negative way.

On the contrary, Amir, Horesh and Lin-Stein (1999) found that social support protected women experiencing infertility from stress of infertility diagnosis, and helped women to feel much better about themselves (1999).

Several other authors also have shown that infertile couples look for and are in need of talking about their feelings with their friends (Conway and Valentine, 1988; Fouad and Fahje, 1989; Mahlstead, 1985). Gibson and Myers (2002) found that family and partner supports are very important coping with infertility stress, so while individuals experiencing infertility, especially women, may seek out social support, often they may receive inadequate or negative social help from family and friends.

Güz, Özkan, Yanık and Yanık (2003) made a study on a sample consisting of Turkish infertile women with the aim of determining the possible psychiatric symptoms resulting from infertility. They also have explored the potential factors that may cause distress. 50 women with primary infertility and 50 health controls were evaluated using the Beck Depression Inventory, Spielberger Stait-Trait Anxiety Inventory, Rosenberg Self-esteem scale and Symptom Checklist scale. They were also asked to describe the reactions received from their husband, husbands' families and their social group because of infertility. Psychiatric symptoms were not significantly different between the two groups. However, within the infertile group, depression and anxiety were more frequent in the women who received negative reactions from their husbands, their husbands' families and social group. There has been an increase in the levels of depression, anxiety and self-esteem in the infertile women as age and the duration of infertility increased. This study shows that the presence or absence of social support is an important factor on the well-being of infertile women.

Another issue regarding social support is the medical aspect of infertility, which can be examined in terms of cultural context. Infertility problems are thought of as a “medical” condition along with the advanced new reproductive technologies. This can be seen as stigmatizing, in that if the couples don’t try all of the possible medical treatments, they may be considered as not actualizing their social roles. (Miall (1994) notes that medical intervention can be conceptualized “solution” but also can be “stigmatizing” when it is suggested by others who have good intentions according to themselves. However, the people who encourage medical intervention may increase the stress level of the couple by recommending procedures that may be painful, both emotionally and physically. Jirka, Schuett and Foxall’s study (1996) revealed that greater social support and reciprocity lessened feelings of loneliness for both husbands and wives who had been dealing with infertility problems. The authors also stated that wives who perceived increased conflict in their social relationships were more lonely than their husbands.

Aim of the Study

In this study, the main aim was to provide an empirical description and analysis of psychological outcomes of “infertility” for Turkish middle-class infertile women. Hence, a broad area of investigation was covered. It is hoped that a general perspective about the psychological make-up of infertile women will be gained.

One of the several aims of the study was to investigate whether depression and anxiety are attributable to “infertility” or a consequence of a medicalization effect and due to frequent visits to hospital. It is well stated in the literature that, infertility is a stressful, unexpected and life changing event. Beyond its medical aspect, individuals are traumatized by psychological, and social consequences of this problem. Based on our knowledge of the research background, we can assert that infertile women are more prone to show clinical symptoms in

the form of high levels of anxiety and depression, and low self-esteem more than fertile women. Thus, a control group consisting of gastrointestinal patients was formed and was compared with the infertile subjects in terms of depression and anxiety.

The present study was intended to provide a significant contribution to the literature on the psychology of infertility since it will be one of the few studies in Western literature and the first one in Turkey, which addresses the implications of the infertility diagnosis (the types of infertility causality), and sex role orientation on psychological reactions (measured as anxiety and depression in the present study) of infertile women. Depression and anxiety is conceptualized in a more thorough way by including variables that are thought to be affecting the infertility process on the part of infertile women. Because it cannot be assumed that all women who undergo infertility treatments experience distress at the same ways and levels, it is important to discover factors related to distress. Seeking to uncover the relationship between these factors can help to further our understanding of women facing the infertility experience. In this study, no comparison will be made between the two sexes, but rather the unit of analysis will be “woman”.

When we look at whether the infertility diagnosis makes a difference on the level of distress, there is more or less a consensus on this respect according to the literature: Females show more distress than men for every category of infertility diagnosis; that is to say that, it does not matter whether being the male or female who is contributing the infertility problem. Though, men tend to report some form of distress only if the infertility cause stems from male factors. There have been several studies that included the “couple” as participants and made a comparison between them, but the number of studies that have investigated the role of infertility causality among women have been very limited in the Western and Turkish literature. Hence, this study will be contributing to the literature in terms of making comparisons among women with respect to anxiety and depression.

Sex role orientation also plays an important role in a woman's cognitive appraisal of an event as stressful, so its relationship with the infertility distress will also be investigated. This study will be contributing to the literature since the findings of the studies that have been conducted to explore relation between gender role identity and distress (as depression and anxiety) is somewhat contradictory.

Moreover, the presence or lack of social support on the part of infertile women, seems to be a differentiating factor on how women copes with treatment stress according to the some line of research studies; while another group of research studies have argued that significant others can not be able to provide support as in the form of infertile individuals needed but were perceived as demanding and stigmatizing. One of the aims of this study is to investigate social support's role on the level of depression and anxiety of infertile women.

The following hypotheses will be tested in the present study:

1) Depression (BDI) and anxiety (STAI) scores of the infertility group will be higher than the control group's depression (BDI) and anxiety (STAI) scores.

2) Depression (BDI) scores will be positively related with state and trait anxiety (STAI) scores, and negatively related with self-esteem (CSSEI) scores for the infertility group.

3) a- The infertile subjects who have low level of social support (SS) will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects who have high level of social support.

b- The infertile subjects who have low level of self-esteem (CSSI) will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects who have high level of self-esteem.

c- The infertile subjects who have female infertility causality will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the other types of infertility causality.

d- The infertile subjects who have feminine sex role orientation will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects with other sex role orientation.

In addition to the hypotheses stated above, the present study also included the following research question:

Anxiety (STAI), and depression (BDI) scores of the infertility group will be explored in relation to the duration of treatment, age, educational level, and working status.

CHAPTER 2

METHOD

Subjects

The participants consisted of 140 individuals. There were two groups one of which was the experimental group and the other one which was the control group. The experimental group included 100 female infertile patients who were under In Viro Fertilization (IVF) treatment in the American Hospital as participants for the study. The exclusion criteria included women who were from rural regions of Turkey and women who had secondary infertility. The participants were selected everyday among the female IVF patients who came for their routine ultrasound controls, in the American Hospital. The patients' names were being listed daily in the IVF Clinic of the hospital and the inclusion to the study was made accordingly.

The control group consisted of 40 gastrointestinal female patients who has had several doctor-visits as a requirement of their treatments. The participants were selected on a convenience basis with a selection criteria of being married and having a child or children (being fertile). The control group has been included in the study for the purpose of excluding a possible "hospitalization" effect.

Instruments

A battery of self-report questionnaires were administered to the participants. The battery included a demographic information sheet, the Beck Depression Inventory (Beck et al., 1961) the State-Trait Anxiety Scale (Spielberg, Gorsuch and Lushene, 1970), the Coopersmith Self-esteem Inventory (1986), the Social Support Scale and the Turkish version of Bem Sex Role Inventory (BSRI).

Demographic Information:

Demographic information included sex, age, marital status, years of marriage, the place of living, employment, occupation, income level, treatment duration, the number of IVF/ICSI cycles, and the causality of the infertility.

The State-Trait Anxiety Inventory:

This inventory consists of two separate self report scales to measure A-State and A-Trait.

The A-state scale contains 20 items that ask people to indicate how they feel at a particular moment in time. The subject is required to respond to each item by rating the intensity of her feelings on the following 4 point scale:

(1) Not at all (2) Somewhat (3) Moderately so (4) Very much so.

The A-trait scale consists of 20 statements that ask people to describe how they generally feel. Subjects respond to each of them on the following 4-point scale:

(1) Almost never (2) Sometimes (3) Often (4) Almost always.

Both English and Turkish forms of STAI have high internal consistency and test-retest reliability (Spielberger et al., 1970; Le Compte and Öner, 1976). Le Compte and Öner's (1976) adaptation of STAI in Turkey shows high degrees of internal consistency (Alpha coefficients of 0.90 to 0.96 for the A-state and 0.81 to 0.90 for the A-trait). Test-retest reliability has a high coefficient has a high coefficient of 0.70 to 0.86.

The STAI has proven to be useful in both clinical work and research. In recent years, STAI was employed on different subject groups such as normals, psychiatric patients and students.

Beck Depression Inventory:

The Beck Depression Inventory (BDI) is a self-report depression inventory that is among the most frequently used in assessing depression (Williams, 1992). It was developed by Aaron Beck in 1961, first as an interview scale, but now is used as a self-rating scale.

The BDI consists of 21 clinically derived items; each item representing a symptom-attitude category or in other words, each describing a particular manifestation of depression. The subject chooses the statement best describes his/her present state. Each item has four self-evaluative statements that are ranked in varying degrees of severity. The statements are ranked from 0 to 3 to indicate the severity of the symptom and attitude.

Coopersmith Self-esteem Inventory:

This inventory was first developed by Stanley Coopersmith to provide information about children's self-esteem and it was later designed to cover all age groups.

In this study the adult form of the inventory (Coopersmith, 1986) was used. The form consisted of 25 statements which require the respondents to indicate their agreement (like me) or disagreement (not like me). These statements reflect the respondents' view of life, family relations and social relations. This inventory enables the measurement of personal judgements relating to leadership, self-esteem, inferiority and the like as well as attitudes towards the family.

The reliability and validity studies of this scale have been done for English (Coopersmith, 1986) and Turkish versions (Turan and Tufan, 1987).

Social Support Scale:

This scale measures family and friends' support. Social support from family and friends was measured by a revised version of the social support scale developed by Krespi (1993). The original 22 item scale includes emotional support, informational support, monetary support, appreciation and praise, spending time together. Internal reliability coefficient is reported to be .82. Test/retest reliability coefficient is found to vary between .68 and .91. The scale that was used in this study had been revised by Torun (1995) to be a 19 item scale. All the items are positive. A five-point Likert scale was used for responses ranging from (1) "never" to (5) "always". High scores show high levels of social support. The internal

reliability coefficient of the revised form of the scale is reported to be .92 by Torun (1995). The scale is used to measure social support in general.

Bem Sex Role Inventory:

The Bem Sex-Role Inventory (BSRI) was developed by Bem (1974) to measure masculinity and femininity as independent psychological dimensions. The BSRI contains 60 items. Twenty of the items are related to concepts that are usually associated with dimensions of masculinity, 20 items are related to femininity, and 20 items are used as fillers. Respondents are asked to indicate on a 7-point Likert-type scale how well each item describes them. The scale ranges from *never or almost never true* (1) to *always or almost always true* (7).

Procedure

All subjects were administered a survey form composed of demographic information sheet, BDI, STAI, BSRI, CSI, SS. The order in which the questionnaires were administered was randomized. The author contacted the patients one by one and face to face when they have come for their ultrasound controls during their IVF/ICSI treatments and they were given a general instruction including general information about the study. The patients who volunteered to participate in the study were selected. The respondents were also assured about the confidentiality of their answers. The questionnaires were administered to the infertility group in a quiet room in the American Hospital. The author was present during the administration of the questionnaires to answer the questions about the questionnaire. There was no time limitation.

CHAPTER 3

RESULTS

In the first section, a comparison of the infertility group and control group will be presented in terms of demographic variables, depression, anxiety, self-esteem, social support and sex role orientation scores. After that set of information, the descriptive analysis of the infertility group will be summarized in the second section. In the third section, correlations among the continuous variables of the study which are depression, anxiety, social support, self-esteem, sex role orientation will be reported. Lastly, depression and anxiety scores of the infertility group will be analyzed for each by taking social support, self-esteem, the types of infertility causality and sex role orientation's effects into account.

The comparison of the Infertility Group and the Control Group in terms of Demographic Characteristics

The present study included two groups of subjects, namely: a-The infertility group and b- The control group. The infertility group consisted of infertile patients, and the control group included patients who had gastrointestinal problems. The reason for the inclusion of a control group was to rule out a possible hospitalization effect on the part of infertile participants. In other words, the aim was to understand whether anxiety and depression symptoms displayed by infertile subjects were attributable to infertility process or were originated from just being in the hospital setting. For this reason, the infertility group and the control group were compared in terms of demographic variables and also anxiety and depression scores.

The questionnaires were distributed to a total of 139 subjects. Of the 139 subjects that were included in the analyses, 100 were infertile patients (Infertility group) and 39 were patients with gastrointestinal problems (Control group).

The means and standard deviations of demographic variables (age, education level, working or not, years of marriage) for the two groups are presented in Table 1.

The results of the t-test revealed that there were no group differences between the groups in terms of age [$t(134) = 1.41, p > .05$] and years of marriage [$t(133) = 0.98, p > .05$]. The mean age for infertility group was 32 (SD = 5,019), while it was 31 (SD = 4,71) for control group. The mean value of the duration of marriage was 6,57 (SD = 4,461) and 5,70 (SD = 4,999) for Infertility group and control group respectively (See Table 1).

Table 1. Means and Standard deviations of Age and Years of Marriage for Infertility group and Control group

	Infertility group	Control group
Age		
N	99	37
M	32,42	31,08
SD	5,02	4,71
Years of marriage		
N	98	37
M	6,57	5,70
SD	4,46	5,00

Chi square analyses were conducted in order to test whether there were significant differences between subjects of the two groups in terms of education level, employment status, and income, which were categorical variables. The results showed that both groups were comparable on these aspects also, since there were no significant differences found in terms of education levels [$X^2(4) = 8.14, p > .05$], employment [$X^2(1) = 1.12, p > .05$], and income levels [$X^2(2) = 1.88, p > .05$]. The frequency and percentage distributions are presented in Table 2 below.

Table 2. The Frequency and Percentage distributions of Education level, Employment Status and Income for Infertility group and Control group

		Infertility group (N=99)		Control group (N=37)	
		N	%	N	%
Education level	1-İlkokul	9	9.1%	0	0%
	2-Ortaokul	6	6.1%	1	2.7%
	3-Lise	39	39.4%	12	32.4%
	4-Üniversite	29	29.3%	19	51.4%
	5-Yükseklisans	16	16.2%	5	13.5%
Employment	Employed	57	57.6%	25	67.6%
	Not employed	42	42.4%	12	32.4%
Income	1- 0-1000 YTL	14	14.1%	2	5.7%
	2- 2000-4000 YTL	59	59.6%	24	68.6%
	3-5000YTL and above	26	26.3%	9	25.7%

The comparison of the Infertility Group and Control Group in terms of Depression, State-Trait Anxiety, Social Support, Self-esteem and Sex role Orientation

Depression (BDI), State-Trait Anxiety (STAI), Social Support (SS), Self-esteem (CSSEI) and Bem Sex Role Inventory (BSRI) scores for both infertility patients (Infertility group) and gastrointestinal patients (Control group) are presented in Table 3 below and Figure 1 (Appendix 1). When the two groups were compared in terms of depression (BDI) by using t-test, the results showed that there was a significant difference between them, $t(123) = 3.98$, $p < .05$, where the Infertility group had significantly higher scores on depression than the Control group. Moreover, the groups were significantly different in terms of state anxiety (STATE-ANX) $t(68) = 2.19$, $p < .05$. The Infertility group scored significantly higher on the state anxiety sub-scale of STAI. However, the results of the t-test did not reveal a significant difference between the two groups in terms of trait anxiety (TRAIT-ANX), $t(77) = 1.23$, $p > .05$. In terms of social support (SS), $[t(130) = -.24, p > .05]$, masculinity (BSRI-MAS)

[$t(120) = .05$, $p > .05$] and femininity (BSRI-FEM) [$t(125) = 1.43$, $p > .05$], there was also no statistical difference between the two groups.

Table 3. Means and Standard deviations of BDI, STATE-ANX, TRAIT-ANX, SS, CSSEI, BSRI-MAS, BSRI-FEM according to Infertility group and Control group.

	Infertility group	Control group
SS		
N	95	37
M	77,56	78,16
SD	12,92	13,05
BSRI-MAS		
N	88	34
M	91,78	91,65
SD	15,08	7,78
BSRI-FEM		
N	94	33
M	113,65	110,45
SD	11,24	10,20
CSSEI		
N	99	40
M	70,22	34,50
SD	21,16	13,52
BDI		
N	94	37
M	12,36	7,51
SD	9,33	4,55
STATE-ANXIETY		
N	47	30
M	40,79	36,47
SD	8,90	7,67
TRAIT-ANXIETY		
N	47	32
M	43,72	41,44
SD	8,67	7,20

The Descriptive Analysis of the Infertility Group

The analyses from this point onwards will be about the main sample group of the study which is consisted of infertility patients (Infertility group):

The Relationship Between Education Level, BDI, STATE-ANX, and TRAIT-ANX

The results of the ANOVA revealed that there was a significant difference among the levels of education with respect to trait anxiety (TRAIT-ANX), [$F(3,43) = 2,93, p < .05$]. Post hoc analysis of LSD was performed and “lise” education was found to be significantly different from “üniversite” education, ($p < .05$). When the categories of education level were investigated in relation to state anxiety (STATE-ANX) scores, the groups did not differ from each other, though the difference was close to significance, [$F(3,43) = 192,76, p = .057$]. In terms of depression (BDI) there was not a significant difference among the levels of education [$F(3,90) = 1,71, p > .05$]. The means and standard deviations of BDI, STATE-ANX and TRAIT-ANX for levels of education are presented below in Table 4.

Table 4. Means and Standard deviations of BDI, STATE-ANX, and TRAIT-ANX in terms of Education level.

	N	M	SD
BDI			
İlköğretim	14	10,93	9,24
Lise	37	15,03	10,07
Üniversite	27	10,48	9,49
Yükseklisans&üst	16	10,63	6,10
Total score	94	12,36	9,33
STATE-ANX			
İlköğretim	5	36,20	11,76
Lise	17	43,12	7,83
Üniversite	18	37,72	8,22
Yükseklisans&üst	7	46,29	8,04
Total score	47	40,79	8,91
TRAIT-ANX			
İlköğretim	17	44	8,76
Lise	16	47,19	9,68
Üniversite	17	6,05	6,05
Yükseklisans&üst	7	8,36	8,36
Total score	47	8,67	8,67

The Relationship Between Employment status, BDI, STATE-ANX, and TRAIT-ANX

The ANOVA was conducted to test the difference between the working status of the infertile subjects. The results showed that there was a significant difference between the groups in terms of BDI scores [$F(1,92)=8.97$, $p<.05$] and TRAIT-ANX scores [$F(1,45)=6.93$, $p<.05$]. Mean cells indicate that the subjects who work have lower depression scores, but higher trait anxiety scores in comparison to non-working subjects. The means and standard deviations of BDI, STATE-ANX and TRAIT-ANX scores with respect to the working status of the subjects are presented below in Table 5.

Table 5. Means and Standard deviations of BDI, STATE-ANX, and TRAIT-ANX in terms of Employment Status.

		N	M	SD
BDI	Working	40	9.99	11.08
	Not working	54	15.58	6.98
	Total	94	12.36	9.33
STATE-ANX	Working	20	42.5	8.10
	Not Working	27	39.52	9.40
	Total	47	40.79	8.91
TRAIT-ANX	Working	19	47.53	9.38
	Not Working	28	41.14	7.24
	Total	47	43.72	8.67

Correlations among Depression, State Anxiety, Trait Anxiety, Treatment Duration and the number of IVF Trials

Pearson correlation coefficients were computed to investigate the relationship between the dependent variables of the study (state/trait anxiety and depression) and the treatment duration and the number of IVF treatments. The results revealed a significant positive correlation between depression (BDI) scores and treatment duration ($r=.217$, $p<.05$). Depression was also significantly positively correlated with the number of IVF treatments

($r=.256$, $p<.05$). Another significant positive correlation was between trait anxiety (TRAIT-ANX) and the number of IVF treatments ($r=.360$, $p<.05$). The results are presented in Table 6.

Table 6. Correlations among BDI, STATE-ANX, TRAIT-ANX, Treatment Duration and Number of IVF Treatments

		STATE-ANX	TRAIT-ANX	BDI	Treatment Duration	No. of IVF Treatments
STATE-ANX	Pearson corr.	1	.607**	.495**	.000	.240
	Sig. (2-tailed)		.000	.000	.998	.104
	N	47			46	47
TRAIT-ANX	Pearson corr.	.607**	1	.479**	.215	.360*
	Sig. (2-tailed)	.000		.001	.156	.013
	N	42	47	47	45	47
BDI	Pearson corr.	.495	.479**	1	.217*	.256*
	Sig. (2-tailed)	.000	.001		.037	.013
	N	47	47	94	92	94
Treatment Duration	Pearson corr.	.000	.215	.217*	1	.747**
	Sig. (2-tailed)	.998	.156	.037		.000
	N	46	45	92	97	97
No. IVF Treatments	Pearson corr.	.240	.360*	.256*	.747**	1
	Sig. (2-tailed)	.104	.013	.013	.000	
	N	47	47	94	97	99

The Relationship between Depression, State-Trait anxiety, Social Support, Self-Esteem, and Sex Role Orientation

The results of the Pearson correlation coefficients which were computed to detect the relation among the dependent and independent variables of the study revealed significant positive and negative correlations (See Table 7).

As can be observed in Table 7, depression (BDI) scores were significantly positively correlated with both STATEANX ($r=.492, p<.01$) and TRAITANX ($r=.479, p<.01$) scores; and significantly negatively correlated with SOCSUP scores ($r=-.417, p<.01$), BSRIMAS ($r=-.247, p<.05$) and CSSCOREs ($r=-.441, p<.01$).

Social support (SOCSUP) was significantly positively correlated with BSRIMAS ($r=.276, p<.01$), CSSCOREs ($r=.405, p<.01$); and significantly negatively correlated with BDI scores, STATEANX ($r=-.492, p<.01$), and TRAITANX ($r=-.593, p<.01$).

STATEANX and TRAITANX scores were significantly negatively related with CSSCOREs, ($r=-.426, p<.01$) and ($r=-.692, p<.01$) respectively. There was also a significant negative correlation between TRAITANX and BSRIMAS ($r=-.525, p<.01$).

Moreover, in terms of the relation between CSSCOREs and BSRIMAS, the results revealed a positive significant relation ($r=.451, p<.05$).

Table 7. Correlations between Social support (SOCSUP), Masculinity (BSRIMAS) Femininity (BSRIFEM), Depression (BDI), State Anxiety (STATEANX), Trait Anxiety (TRAITANX), and Self-esteem (CSSORE)

Correlations								
		SOCSUP	BSRIMAS	BSRIFEM	BDISCORE	STATEANX	TRAITANX	CSSCORE2
SOCSUP	Pearson Correlatio	1	,276**	,095	-,417**	-,492**	-,593**	,405**
	Sig. (2-tailed)		,010	,363	,000	,000	,000	,000
	N	95	87	93	94	47	47	95
BSRIMAS	Pearson Correlatio	,276**	1	-,316**	-,247*	-,258	-,525**	,451**
	Sig. (2-tailed)	,010		,003	,022	,108	,000	,000
	N	87	88	87	86	40	41	88
BSRIFEM	Pearson Correlatio	,095	-,316**	1	,047	-,002	,030	-,023
	Sig. (2-tailed)	,363	,003		,658	,992	,842	,822
	N	93	87	94	92	46	46	94
BDISCORE	Pearson Correlatio	-,417**	-,247*	,047	1	,495**	,479**	-,441**
	Sig. (2-tailed)	,000	,022	,658		,000	,001	,000
	N	94	86	92	94	47	47	94
STATEANX	Pearson Correlatio	-,492**	-,258	-,002	,495**	1	,607**	-,426**
	Sig. (2-tailed)	,000	,108	,992	,000		,000	,003
	N	47	40	46	47	47	42	47
TRAITANX	Pearson Correlatio	-,593**	-,525**	,030	,479**	,607**	1	-,692**
	Sig. (2-tailed)	,000	,000	,842	,001	,000		,000
	N	47	41	46	47	42	47	47
CSSCORE2	Pearson Correlatio	,405**	,451**	-,023	-,441**	-,426**	-,692**	1
	Sig. (2-tailed)	,000	,000	,822	,000	,003	,000	
	N	95	88	94	94	47	47	99

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

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

The Relationship between Depression, State-Trait Anxiety, Social Support, Self-Esteem , the Types of Infertility Causality, and Sex role orientation

In order to investigate the effects of social support (SS), self-esteem (CSSEI), the types of infertility causality (female-factor, male factor, male+female factor and unexplained factor), and sex-role orientation (BSRI), depression and state/trait anxiety were submitted to separate ANOVA's. Social support (SS), and self-esteem CSSEI scores were categorized into three sub-groups as "low", "medium" and "high". Below, the results will be summarized for depression, state anxiety and trait anxiety separately (See also Figure 2, Figure 3, and Figure 4 in Appendix 1).

The Effects of Social Support, Self-Esteem, Infertility Causality and Sex Role Orientation on Depression

The results of the ANOVA test showed that there was an overall significant relationship among infertility causality, social support (SS), self-esteem (CSSEI), depression (BDI) and sex role orientation (BSRI) [$F(9) = 3.89, p < .01$].

The results revealed a significant main effect for infertility causality, [$F(3) = 3.05, p < .05$]. Scheffe results indicated that there were no significant differences among the types of infertility causality with respect to BDI scores ($p > .05$). However, when LSD was performed, significant differences were found between the types of “female causality” and “male causality” ($p < .05$) and “female causality” and “male+female causality” ($p < .05$). The subjects who had female-causality for infertility scored higher on BDI than the other types of causality groups.

The results of ANOVA showed also a significant main effect for social support (SS), [$F(2) = 4.77, p < .05$]. Post hoc comparisons with Scheffe revealed that the subjects on the “low” category were significantly different from “medium” category ($p < .05$) and “high” category of social support (SS) ($p < .05$) in terms of depression (BDI) scores; but there was no significant difference between the “medium” and “high” categories of social support (SS) ($p > .5$) in terms of BDI scores. The “low” category of SS scored higher on BDI, when compared to medium and high category of SS. Means and standard deviations of the types of infertility causality, SS categories and BDI scores are shown on Table

Moreover, there was a main effect for self-esteem (CSSEI), [$F(2) = 4.25, p < .05$]. Results of Scheffe performed showed that, in terms of the three categories of self-esteem (CSSEI), there was a significant difference between the “low” and “high” categories. Subjects on the “low” category of self-esteem scored higher on BDI when compared to the subjects on “medium” category ($p < .05$) and “high” category ($p < .05$) of CSSEI.

However, the main effect for “sex role orientation” did not attain a significance [$F(2) = .524, p > .05$]. The cell means and standard deviations for depression (BDI) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 8.

Table 8. Means and Standard Deviations of Depression (BDI) Scores according to SS, CSSEI, Types of Infertility Causality and BSRI.

	M	SD	N
SS			
Low	19.70	11.91	17
Medium	11.22	7.65	51
High	9.59	9.91	17
CSSEI			
Low	17.81	11.97	27
Medium	10.68	6.58	34
High	9.42	8.41	24
Infertility causality			
Female factor	15.87	11.45	31
Male factor	10.30	10.71	20
Male+female factor	10.08	6.26	13
Unexplained	11.48	6.13	21
BSRI			
Feminine	15	10.33	21
Masculine	11.55	8.44	22
Androgynous	11.93	9.98	42
Total X	12.59	9.69	85

The Effects of Social Support, Self-Esteem, Infertility Causality and Sex Role Orientation on
State Anxiety

ANOVA was conducted to investigate the relationship among social support (SS), self-esteem (CSSEI), sex role orientation (BSRI) and the types of infertility causality with respect to state anxiety (STATE-ANX). The overall model was not found to be significant [$F(9) = 1.81, p > .05$], while the main effect of social support (SS) attained a significance level for state anxiety (STATE-ANX) [$F(2) = 4.10, p < .05$].

Post hoc comparisons with Scheffe showed that the subjects who had “low” levels social support (SS) scored significantly higher on state anxiety (STATE-ANX) in comparison to the subjects who had “high” levels of social support ($p < .05$). The subjects who had “low” social support did not differ significantly from the subjects who had “medium” level of social support ($p > .05$). Moreover, there was not a significant difference between the subjects from the categories of “medium” and “high” ($p > .05$). The means and standard deviations for state anxiety (STATE-ANX) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 9.

Table 9. Means and Standard Deviations of State-anxiety (STATE-ANX) Scores According to SS, CSSEI, Types of Infertility Causality and BSRI.

	M	SD	N
SS			
Low	46.23	5.54	13
Medium	40.67	9.15	21
High	31.83	7.80	6
CSSEI			
Low	46.17	5.90	12
Medium	40.00	8.55	16
High	37.67	10.71	12
Infertility causality			
Female factor	41,47	10.27	15
Male factor	40.50	6.65	8
Male+female factor	40.80	8.53	5
Unexplained	41.33	10.12	12
BSRI			
Feminine	40.00	10.34	9
Masculine	39.38	13.40	8
Androgynous	40.04	8.06	23
Total $\bar{x}$	44.29	8.70	41

The Effects of Social Support, Self-Esteem, the Types of Infertility Causality and Sex Role

Orientation on Trait Anxiety

The results of the ANOVA test showed that there was an overall significant relationship among infertility causality, social support (SS), self-esteem (CSSEI), and sex role orientation (BSRI) in terms of trait anxiety (TRAIT-ANX) [$F(9) = 5.93, p < .05$].

The results revealed a significant main effect for social support (SS), [$F(2) = 4.92, p < .05$]. Post hoc comparisons with Scheffé revealed that the subjects who had “low” levels social support (SS) scored significantly higher on trait anxiety (TRAIT-ANX) in comparison to the subjects who had “high” levels of social support ($p < .05$). Also, there was a significant difference between the subjects from the “low” level of social support category and “medium” level of social support category ($p < .05$) with respect to TRAIT-ANX scores. However, the subjects who had “medium” level of social support did not differ from the subjects who had “high” level of social support ($p > .05$).

The results of ANOVA also indicated that there was a significant main effect for self-esteem (CSSEI), [$F(2) = 4.32, p < .05$]. Scheffé results showed that in terms of the three categories of self-esteem (CSSEI), there was a significant difference between the “low” and “high” categories of CSSEI ($p < .05$). The subjects within the category of “low” self-esteem scored higher than the subjects within the category of “high” self-esteem, in terms of trait anxiety (TRAIT-ANX). There was also a significant difference between the “medium” self-esteem group and “high” self-esteem group ($p < .05$). Moreover, the difference between “low” and “medium” self-esteem groups attained a close significance level in terms of trait anxiety ($p = .052$).

The results of ANOVA also showed a significant main effect for sex role orientation, [$F(2) = 3.85, p < .05$]. According to the performed post hoc analysis (Scheffé), there was a significant difference between the “feminine” group and “masculine” group ($p < .05$) and

between the “feminine” and “androgynous” group ($p < .05$). The subjects who had feminine sex role orientation had higher scores of trait anxiety (TRAIT-ANX) when compared to the masculine and androgynous types of sex role orientation. The main effect for “the types of infertility causality” did not attain a significance, [$F(23) = 1.26, p > .05$]. The cell means and standard deviations for trait anxiety (TRAIT-ANX) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 10.

Table 10. Means and Standard Deviations of Trait Anxiety Scores according to SS, CSSEI, Types of Infertility Causality and BSRI

	M	SD	N
SS			
Low	51.92	8.33	12
Medium	41.95	6.06	20
High	39.33	8.17	9
CSSEI			
Low	50.46	9.41	13
Medium	44.82	5.88	17
High	36.19	4.29	11
Infertility causality			
Female factor	43.46	9.10	14
Male factor	43.45	8.56	11
Male+female factor	40.33	4.08	6
Unexplained	43.90	9.31	10
BSRI			
Feminine	49.25	8.88	12
Masculine	43.00	8.21	7
Androgynous	43.27	7.74	22
Total $\bar{x}$	44.29	8.70	41

CHAPTER 4

DISCUSSION

The first aim of this study was to make a comparison between the infertility group and the control group in terms of depression and anxiety. After checking whether the two groups were similar in terms of demographic variables, they were then compared in terms of anxiety and depression. The aim was to understand if the depression and anxiety expressed by infertile women could be attributable to infertility problems. The second aim was to provide an empirical description of the infertility group. The relationships among treatment duration, number of IVF treatments, depression, anxiety, and self-esteem were analyzed in order to understand the infertility period better. Lastly, this study aimed to investigate the role of social support, self-esteem, infertility causality, and sex role orientation on depression and anxiety levels of infertile women who were under IVF treatment.

Comparison of Infertility Group with Control Group

The control group was constituted with the criterion of including patients from other clinics who make frequent visits to hospital due to medical conditions other than infertility. Gastrointestinal patients were chosen as the subjects of the control group since they also visit hospital several times during their treatments as the infertility patients. This way, two groups were similar in that they were both medicalized, and have made several visits to hospital, so any difference in terms of their depression and anxiety levels can be due to infertility.

Infertility and control groups were found to be comparable in terms of age, education level, employment status and years of marriage. Since there was similarity between infertile women and the women with gastrointestinal problems in terms of demographic variables stated above, higher levels of depression and anxiety on the part of infertile women can be due to infertility.

There was a significant difference between the gastrointestinal patients and infertility patients with respect to depression. The infertility patients had more depressive symptomatology than gastrointestinal patients and showed moderate levels of depression. The results confirmed the hypothesis that infertility group will differ from the control group in terms of depression. This difference was also an expected result in the line of other studies which emphasized that depressive symptoms are more commonly observed in infertile women when compared to fertile women (Hynes et al., 1992; Domar, Seibel, 1990; Domar et al., 1992; Greil, 1997; Wischmann, Stammer, Scherg, Gerhard, Verres, 2001; Oddens et al., 1999). Being infertile has an impact on almost every aspect of their lives like partner relationships, sex life, employment, relationships with fertile family members and friends, financial conditions, and even religious beliefs which can be considered as stress factors that threaten the well-being of women with infertility problems.

On the basis of recent studies, it appears that the major difficulty facing patients during infertility is anxiety (Cook et al., 1989). Infertile participants of the present study had higher state-anxiety in comparison to the control group. This result was also confirmed in several other studies which compared infertile patients with other normative group of subjects in terms of anxiety (Ozkan and Baysal, 2006; Beaurepaiere et. al, 1993; Downey and McKinney, 1992). However, infertility and control group patients were not found to be different with respect to trait-anxiety. This finding shared a similarity with Beaurepaiere et. al's (1993) study's results which also indicated that infertile patients had higher levels of state anxiety when compared to a normative group, while trait anxiety levels of the groups were comparable.

The high levels of state-anxiety of infertility patients can be understandable when one considers the distress infertility creates on women's lives. Rather than being only a medical treatment, IVF treatments carry psychological burdens (Domar, 2002). In fact, most IVF

patients report that treatment is more of a psychological than a physical stressor (Eugster and Vingerhoets, 1999). Golombok (1992) mentions the patients' prevalent fear that treatment will fail. Even though there is a hope of successful pregnancy, most women feel grief for the biological child they have not yet had (Domar, 2002), so unresolved grief can be a major source of anxiety. Moreover, uncertainty about the outcome of treatment and future is one of the significant factors causing anxiety for infertile women. They invest financially, physically and psychologically without knowing whether they will conceive or not.

Descriptive Analysis of The Infertility Group

Education Level, Depression and State-Anxiety

Education level was another factor that was found to be related to trait-anxiety of the infertile subjects. This result supports the findings of Ramezanzadeh et al., 2004; Domar et al., 1992) There was a significant decrease of trait anxiety on the part of the subjects when they had a university/college degree. However, education level was not found to be a factor that differentiated the depression and state-anxiety levels of the subjects. This result indicates that, even for women whose are high and who have contributed to their lives in a productive way, having an infertility problem can be tough and hard to handle when they undergo IVF treatments.

Employment status, Depression and State-Anxiety

Being employed seems to be a protective factor appearing in this study, that helps women in terms of showing depressive symptoms; also supporting Facchinetti et al.'s (1997) findings. The results of the study revealed that working women are less depressed in comparison to women who do not work. This may be due to being able to spend their time during the day without focusing on infertility-related feelings and thoughts. Having a job also

seems to be leading to self-confidence and a contribution to their views about themselves as being productive and competent. Having a job may be a gate leading women to joyful aspects of their life other than maternity. It should also be noted that some of the non-working infertile women may be once working but quit because of the IVF treatments. Some of the patients see having a child as the first priority in their lives, so if their occupations are stress-provoking or not allowing them to spare time for the requirements of IVF treatments, they may stop working. But, after a while they may start to lose their self-esteem and get more prone to depressive and anxiety symptoms if they can't find ways to fulfill their productive sides, but focusing only on infertility issues.

It is interesting that although education level does not make a difference in terms of depression, working status of women make a difference. Education level and working status may be better conceptualized differently. That is, a woman's not being employed may be interpreted as a more distress-provoking condition when compared to the education level per se. Working status and education level of a woman may be representing two different things. Education level may not mean a protection against depression and state anxiety if the woman is not working. If the woman is not working and also has a reproduction problem in the form of infertility, she may feel more depressed because of losing productivity in two different ways: She can not produce both in the outer realm and also inside her body. Thus, she becomes more disadvantageous in comparison to a working-woman with respect to stress. Another argument with respect to the different results for education level and working status may also be proposed in terms of cultural factors. In Turkey, after a woman gets married, especially when she starts to consider having children, it is more observable to see her giving up working even if she has a high education level. It has been stated by Arin (2002), when women are married, their husbands do not want their wife work out of the house. Moreover, the husbands might say that they are in love with their wives, and they do not want them to

get more tired. After some time, these women may feel unproductive and less self-confident. Thus, it should be considered that even for the women with high education level, the differentiating factor for the occurrence of depression and anxiety will be their working status.

Correlational Analyses among Treatment duration, Number of IVF cycles, Depression, State/Trait Anxiety and Self-Esteem

Treatment duration, Number of IVF treatments, Depression, and Anxiety

As the results indicated, there is a significant positive relationship between the treatment duration and the number of IVF treatments that the infertile patients have had. This is an expected result since as the time passes, infertility treatments also follow one another. In accordance with the previous research (Beaurepaire et al., 1993; Berg and Wilson, 1991; Lok et al., 2002; Guz et al., 2003) and Domar et al., 1992), results of the present study indicate that the depression levels increase as the duration of treatment increases, for the infertile patients. This finding is comprehensible because throughout time, if they still couldn't conceive, the infertile women feel more despair and hopelessness. The infertility process was found to be similar to other chronic medical problems like chronic pain, cancer and heart diseases in terms of the distress experienced (Domar et al., 1993). It seems clear that prolonged treatment duration brings along hopelessness and women feel a great deal of isolation, then depressive symptoms may likely to occur. Moreover, because of the uncertainty of whether a pregnancy will occur or not, infertile women begin to rely on the pessimistic views that they will never be able to become mothers.

As the results of the study indicate, there is a strong relation (.747) between treatment duration and number of IVF treatments, so they share a similarity in terms of their relation with depression and anxiety. The number of IVF treatments and level of depression and trait-anxiety are significantly related. This finding was supported by a previous research conducted

by Newton et al. (1999) which indicated a significant increase in the prevalence of mild to moderate levels of depression after a failed IVF treatment. Hynes et al. (1992) also reported a similar result in that, after a failed IVF treatment, the subjects had more depressive mood in comparison to the beginning of treatment. Furthermore, Leiblum et al.'s (1987) findings revealed that women who had one or more failed IVF trials had increased anxiety and depression levels. This finding indicates that repeated failures of conceiving worsens the infertility crisis, and the symptoms of depression and anxiety become especially prominent which is also in accordance with other studies (Eugster, 1999; Baram, 1988; Newton, 1990). Whiteford and Gonzalez (1995) use the metaphor of an emotional roller coaster to describe the process of coping with infertility. Moreover, because infertility treatment is tied to the menstrual cycle, women begin each month feeling hopeful that this month the treatment will be successful. Often this hopefulness turns to hopelessness if pregnancy does not occur after having invested a large amount of time, energy, hope, and money (Olshansky, 1988). Recurrent disappointments and uncertainty regarding conceiving is hard to tolerate, as the results of this study indicate.

Relationship among Depression, State-trait anxiety, and Self-esteem

As a result of investigating the relationship among depression, state-trait anxiety, and self-esteem, significant results were obtained:

There was a positive relation between depression and state-trait anxiety; and they were negatively related with self-esteem, which confirmed the hypothesis of the present study and was in the same line with previous research studies (Abbey et al. 1991; Bolter, 1997; Connolly, & Cook, 1987; Greil, 1997; Grover, Gannon, Sherr, and Abel, 1996; Hjelmsteadt, Andersson, Skoog-Svanberg, Bergh, Boivin and Collins (1999); Morin-Davy, 1998; Myers, 1990; Newton, Sherrard, and Glavac, 1999; Sadler & Syrop, 1998). The more depressed the

patients were, the more they experienced both acute and chronic anxiety. The presence of one of the distress variables stands as an indicator of the other distress variables. Previously conducted studies suggest that anxiety and depression are characteristics of the infertility period for most women. Fertility testing involves more complicated, uncomfortable medical procedures for women. With IVF and superovulation techniques, women report greater anxiety about the effects of hormonal treatment on their bodies and often experience mood swings. Surgical procedures for egg retrieval create anxiety for both partners about the consequences of general anesthesia, the number of eggs that will be retrieved and the quality of the eggs, both of which affect the possibility that the eggs will be fertilized. Women seek infertility treatment more often and at a greater frequency than their partners, and are more committed to treatment (McGrade and Tolor, 1981). The majority of medical tests and infertility treatments involve the woman's reproductive system, and as a consequence of such treatment, her life may be more disrupted than her partner's (Abbey et al., 1994).

The Effects of Social Support, Self-esteem, Infertility Causality and Sex Role Orientation on Depression

The effects of social support, self-esteem, infertility causality and sex role orientation on depression were investigated. An overall significant relationship among these variables was obtained. The research design conceptualized a multi-factor relationship between social support, self-esteem, sex role orientation and types of infertility causality and depression, which is a comprehensive way of conceptualizing depression in the infertility literature. The hypothesis of the study were confirmed by this model of the present study, in that social support, self-esteem, the types of infertility causality had significant effects on depression.. The patients who had female causality of infertility, low levels of social support, and low levels of self-esteem had the highest level of depressive symptoms. However, sex role

orientation was not found as a significant factor on this relationship which did not support the hypothesis that feminine sex role orientation will be leading to depression more when compared to the other types of sex role orientation.

Below, the variables of this relationship will be described in terms of their relation to depression under different sections:

The Effect of Infertility Causality on Depression

The role of infertility causality on creating depression has been investigated by various researchers (Miall, 1986; Demyttenaere et al., 1988; Bernt et al, 1992; Lee et al, 2001; Wright et al., 1991; Daniluk, 1992; Khademi, Alleyassin, Aghahosseini, Ramezanzadeh, and Abhari, 2005). The results of the present study is similar to Miall's (1986) findings which also indicated that women with "female" causality of infertility had more difficulty coping with infertility distress in comparison to women who had "male" causality of infertility. The results of this study indicated a relation between infertility causality and depression - within a model, including other variables - in that, women who had female causality for infertility were the most depressed among the types of infertility causalities. The link between female causality and depression was also emphasized in Demyttenaere et al.'s (1998) research study which showed that, for women with a female indication for IVF increasing depressive symptoms were related with lower pregnancy rates. Khademi et al. 's (2005) study also relates female type of infertility with higher depression level. It has been stated that women experience infertility as a loss on many levels (Taylor, 1995) which may lead to depression in some cases, and considering the findings of the present study, having a personal causing factor in terms of infertility diagnosis seems to be an extra risk factor for depressive symptomatology. Socially, women report feeling a sense of loss when infertility seems as a barrier to be pregnant. They report missing the social experience of being pregnant and sharing that

experience with others (Forrest & Gilbert, 1992). Another major loss brought on by infertility is a sense of control. Because infertility can be seen by women as an inability to carry out a major life goal, they may not feel confident in their ability to make short and long term plans (Mahlstedt, 1985). These feelings of loss in different ways remain as contributing factors to depression and being the person who has the causing factor for infertility problem appears to worsen their well-being. On the basis of this finding of the study, the presence of a female cause of infertility appears to be a factor to be considered by clinicians when offering psychological support to the patient.

The Effect of Social Support on Depression

Results of this study confirm the findings of Güz et al. (2003) and Amir et al.'s (1999) studies, which indicated social support as a protective factor in terms of appearance of depressive symptoms. There has been an emphasis on the significance of social support for individuals with infertility problems in the literature. In coping with infertility, as with other major life stressors, seeking social support is an important coping mechanism used by individuals undergoing infertility treatment. In addition, because of the stressful nature of IVF treatments, presence of a social support network is crucial factor for the well-being of the infertile women.

The Effect of Self-Esteem on Depression

The results also showed a negative relation between depression and self-esteem, which was also supporting evidence for previously conducted studies (Wright et al., 1991; Xu, Ke and He, 1994; Lee and Sun, 2000). Physically, infertility may cause a woman to feel her body as ineffective or inadequate resulting in feelings of inadequacy and shame as Mahlstedt (1985) stated. Motherhood, cross culturally, is seen as a central and defining role for women.

Infertility has been considered as a failure to reproduce, which socially stigmatizes women desiring to have children. Thus, infertility can be seen as a threat to the nature of being a woman and to the ability of a woman to fulfill a social role.

The Effect of Sex Role Orientation on Depression

The result of the study is in accordance with Cook's (1993) study, in that there is no difference in depression, between feminine gender-typed women and masculine gender-typed women. This may be interpreted as, even though a woman has masculine gender type this does not have any influence on the level of distress she feels. Due to limited amount of research on this relationship in the literature, the result associated with sex role orientation is better to be perceived as a contribution to the literature.

The Effects of Social Support, Self-esteem and Sex Role Orientation and Infertility Causality on State Anxiety

In terms of state-anxiety, a similar model was hypothesized as in depression, in which social support, self-esteem and sex role orientation and infertility causality were expected to have significant effects on state anxiety. The other hypotheses of the model were not supported by the results of the study. That is, self-esteem, infertility causality, and sex-role orientation did not have significant effects on state-anxiety. This finding indicated that factors other than social-support (self-esteem, and sex role orientation) did not have a role on the level of state-anxiety. Women within all categories of self-esteem, and sex role orientation were not different from each other in terms of showing state-anxiety. Also, the type of infertility causality did not have a role on the level of state-anxiety.

The Effect of Infertility Causality on State-Anxiety

The hypothesis that infertility causality will have a significant effect on level of state anxiety was not supported by the results of the study. Result of this study indicates there is no difference among women with any type of infertility causality regarding state-anxiety. It can be stated that infertility affects all women on this respect. Cook et al. (1989) stated that the major difficulty the patients face is anxiety, and this result confirms that statement. Without considering the source of the problem, all women feel anxious probably due to psychological and social reasons.

The Effect of Social Support on State-Anxiety

The results supported only the hypothesis that social support has significant effect on level of state-anxiety of the infertility patients. The women with high level of social support had lower state-anxiety, while low social support brought more state-anxiety for the patients. This finding confirms the findings of Matsubaytashi et al. (2004) who found that anxiety was associated with lack of husbands' and other relatives' support and feelings of stress. The finding of the present study is important in the sense that it indicates social support as a protective factor in coping with state-anxiety.

The Effect of Self-Esteem on State-Anxiety

The results failed to confirm the results of Van Balen and Trimbos-Kemper (1994), Koropatnick, Daniluk, Pattinson (1993) and Guz et al. (2003) in which high levels of anxiety were related to low self-esteem. The result of the study did not also support the hypothesis which proposed that self-esteem will have a significant effect on state-anxiety.

The Effect of Sex Role Orientation on State-Anxiety

The hypothesis that sex role orientation will have a significant effect on level of state

anxiety was not supported by the results of the study. There is no difference between masculine and feminine gender-typed infertile women regarding state anxiety. Sex role orientation does not seem to be affecting the level of anxiety when the issue is trying to conceive. Even the women who have more masculine tendency feel the same way as the feminine ones. This may show us how strong the wish for conceiving is. Since the majority of studies in literature on sex role orientation and infertility are based on investigating the couple and reporting the differences between them, this finding of the study can be considered as a contribution to the literature.

The Effects of Social Support, Self-esteem, Infertility Causality and Sex Role Orientation on Trait Anxiety

Anxiety has been shown to be significantly higher in infertile couples when compared to the general population, with 8%-28% of infertile couples reporting clinically significant anxiety (Anderson, 2003; Chen 2004; Parikh 2000). The process of assisted reproduction itself is also associated with increased levels of anxiety (Leiblum, 1987). The results of the present study showed that social support, self-esteem, infertility causality, and sex role orientation are found to be affecting trait-anxiety. The hypotheses of the study which proposed social support, self-esteem, infertility causality and sex role orientation had a role in role on trait-anxiety were confirmed. Trait anxiety is considered as more stable form of anxiety, and the results are different in comparison to state anxiety. This difference helps us to underline the influence of social support, self-esteem and sex role orientation on the level of trait anxiety. Even though the level of social support stands as a factor for both state and trait anxiety, self-esteem and sex role orientation have contributing roles only on trait-anxiety.

The Effect of the Types of Infertility Causality on Trait-Anxiety

Infertility causality did not appear as a significant factor influencing trait-anxiety for infertile women. In other words, there is no difference among women with different types of infertility causality in terms of trait-anxiety. Since there is not a previously conducted study investigating this relationship among infertile women, this finding will also a contributing role.

The Effect of Social Support on Trait-Anxiety

Standing as one of the significant contributing factors on psychological distress in this study, social support is found also to be related with trait-anxiety. Having a high level of social support is associated with low level of trait-anxiety, and low level of social support is associated with high level of trait-anxiety. This result is in accordance with previous research which also have proposed social support as having role on the level anxiety experienced by infertile women (Domar, 1992; Güz et al. 2003; Shatford et al., 1988).

The Effect of Self-esteem on Trait-Anxiety

Low self-esteem was related with increased levels of anxiety in many other studies (Wright et al.,1991; Xu, Ke and He, 1994; Lee and Sun, 2000) and the findings of this study confirm those study's findings. Women who had low levels self-esteem had the highest level of trait-anxiety for every type of infertility causality which confirms the hypothesis for trait-anxiety that there will be a negative correlation between self-esteem and anxiety for every category of infertility causality.

The Effect of Sex Role Orientation on Trait-Anxiety

One other interesting finding is the sex role orientation's role on trait-anxiety. Femininity appears to be as a risk factor for high levels of trait-anxiety. This result is in the

same line with Cook's (1993), and is contradictory to Collard's (1999) and Edelman and Connolly's (1996) studies. Since the topic of sex role orientation has not been investigated much in terms of its relation to anxiety in infertility literature, this finding stands as a supporting evidence in emphasizing the significance of sex role orientation: Having a more feminine sex role orientation is related with experiencing trait-anxiety. It has to be noted that femininity is not found to be related with state-anxiety. It seems that, femininity is more related to the durable and stable form of anxiety. Feminine infertile women may be much more eager to fulfill their wish of becoming mothers when compared to masculine women. Since feminine women act according to their gender-roles which emphasizes more domestic and feminine kind of thinking and behaving, infertility can be experienced as a significant barrier to becoming mothers. Along with the "uncertainty" of their treatment situation, they may be anxious in a more chronic way, which is supported by the results of this study.

Contributions and Limitations of the Study and Suggestions for Future Research

The present study is the first study in Turkish literature of infertility psychology which has a broad scope of investigation and which explores depression and anxiety by proposing a model of investigation including the role of infertility causality, self-esteem, social support and sex role orientation.

This study has several implications, which may be relevant to future research on psychological distress. This study proposed a model of studying depression and anxiety while taking social support, self-esteem, sex-role orientation, and the types of infertility causality in terms of their effect on depression and anxiety.. This model of conceptualizing psychological distress through multi-variables is significant because there are various kind of reactions manifested by infertile women who undergo IVF treatments, in coping with infertility. Including factors that are thought to be affecting anxiety and depression, may provide

researchers and clinicians with a picture that will show more unique way of being affected by infertility period by infertile individuals. It is crucial to understand the factors contributing to anxiety and depression and this model stands as a comprehensive model for this. It can serve as an example for other researchers in investigating depression and anxiety along with other relevant psychological variables.

The findings of the study raise important points relevant to clinicians. Infertile patients undergoing IVF treatments are better to be monitored especially when their treatment duration is prolonged, the number of treatments are increased and when they are not working. Moreover, after the significant findings that were obtained in the present study related with social support, it is strongly suggested that the patients who have low levels of social support are identified and helped accordingly. Since, self-esteem and sex role orientation of the patients seem to play role on different aspects of distress, psychological counseling services are better to consider the results of this study, so they may take preventive actions. On the other hand, having a female causality of infertility remains as a risk factor for depression. Thus, counseling may be offered to those patients and help them to cope with the negative feelings.

As a drawback of the study, the anxiety scales were distributed to 50 of infertile patients but not to all of them because of including “anxiety” as a measure to study afterwards. Hence, half of the infertility patients in this study received anxiety scale while the other half did not.

In terms of suggestions for future research, the results of the present study and especially, the model of investigation can be taken account by other researchers in raising new questions with respect to infertility-related psychological issues. Psychological reactions to infertility can not be reduced to one or two factors; but in order to understand the psychological make-up of women with infertility problems, it is crucial to think through a

perspective of multi-variables. Hence, for future research, some new and related variables may be included in the research design which will provide us with a more detailed and thorough picture of infertility period on the part of infertile individuals.

Moreover, further research may include an another control group from normal population outside hospital setting which may serve as another point of comparison for the analyses of depression and anxiety.

APPENDIXES

APPENDIX 1

FIGURES

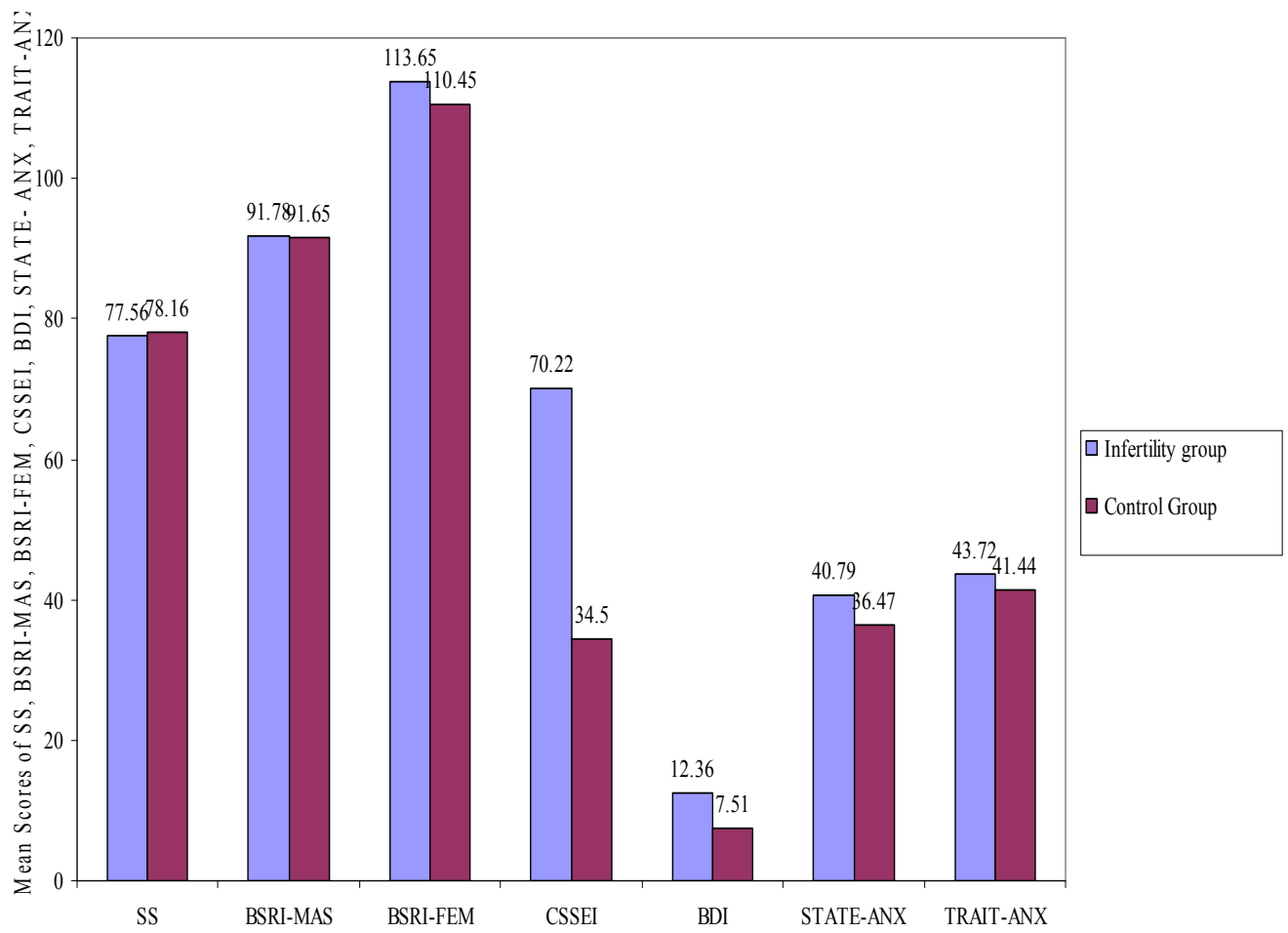


Figure 1: Group Means According to SS, BSRI-MAS, BSRI-FEM, CSSEI, BDI, STATE- ANX, TRAIT-ANX Scores

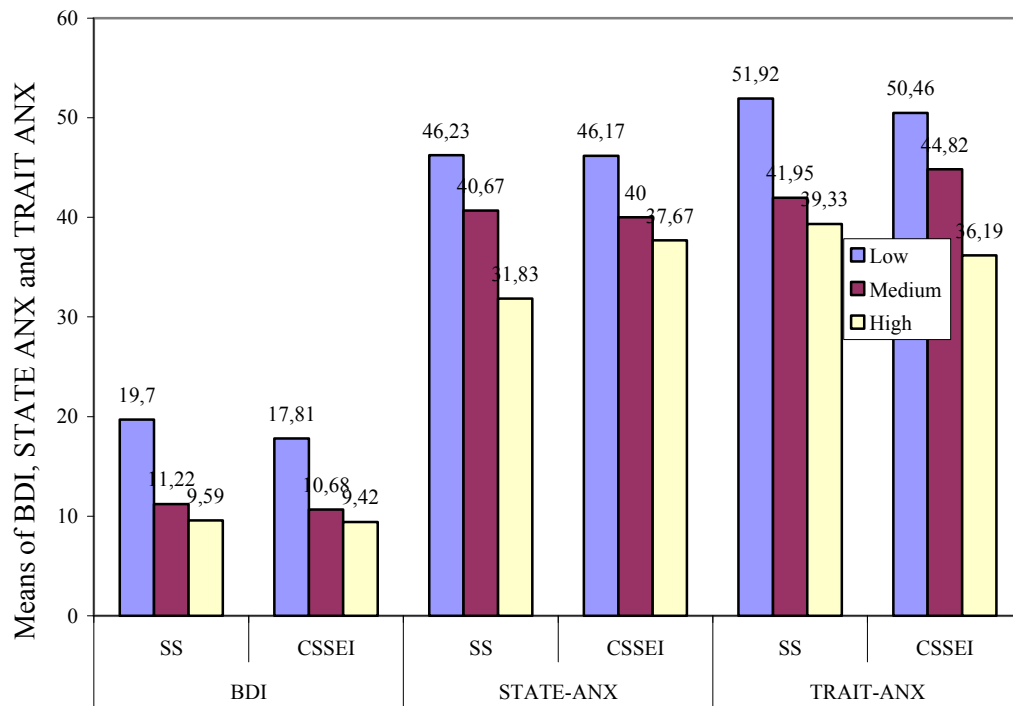


Figure 2: Means of BDI, STATE ANX, TRAIT ANX According to SS and CSSEI

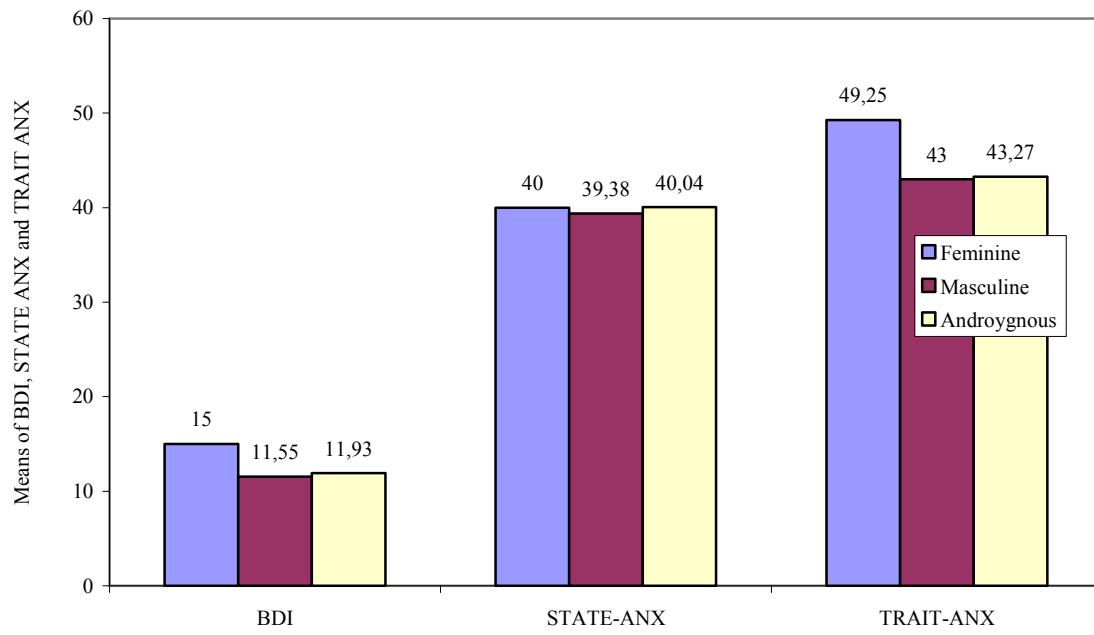


Figure 3: Means of BDI, STATE ANX and TRAIT ANX According to BSRI

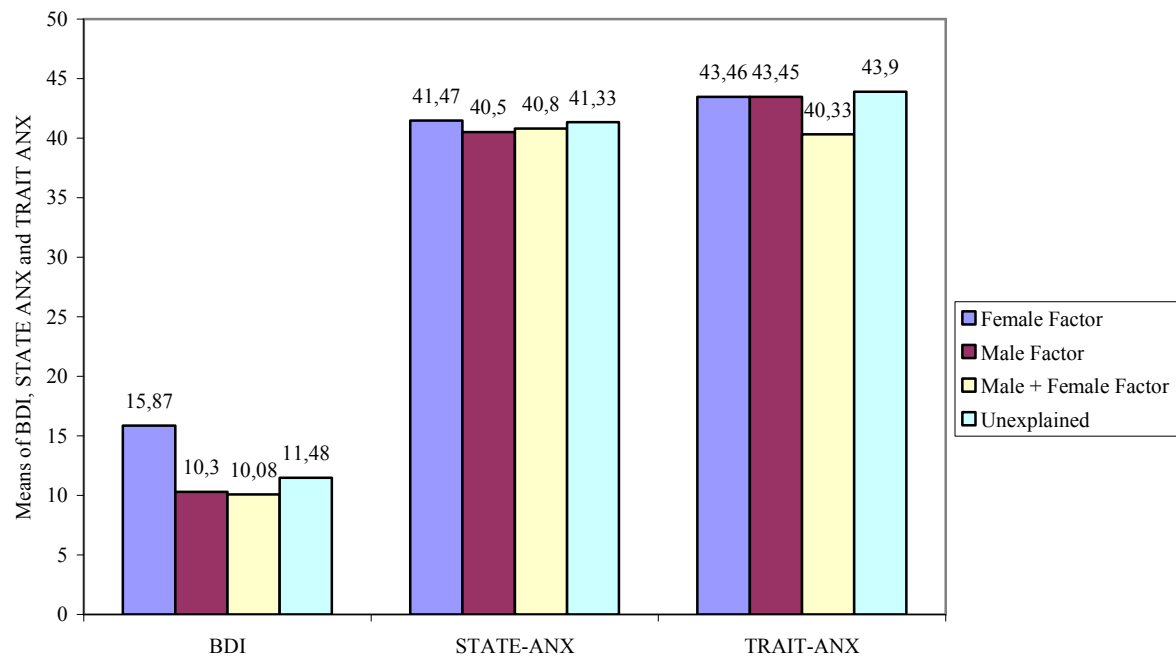


Figure 4: Means of BDI, STATE ANX and TRAIT ANX According to Infertility Causality

APPENDIX 2

DEMOGRAPHIC INFORMATION SHEET

1-Ad Soyad:

2-Yaş:

3-Eğitim durumu: (İlkokul) (Ortaokul) (Lise) (Üniversite) (Yüksek lisans ve üstü)

4-Yaşadığınız şehir/kasaba/köy:

5-Kaç yıllık evlisiniz?

6-Mesleğiniz:

7-Şu an çalışıyor musunuz?

8-Ailenizin yaklaşık geliri

0-1000 YTL

2000-4000 YTL

5000 ve üstü

9-Kaç ay/yıldır infertilite tedavisi görmektesiniz?

10-Şu an kaçınıcı tüp bebek tedavinizi olmaktadır?

11-İnfertilite nedeni: Aşağıda şıklardan sizin durumunuza uygun şıkkın yanına X işareti koyunuz.

(Kadından kaynaklanan faktör)

(Erkekten kaynaklanan faktör)

(Kadın+Erkekten kaynaklanan faktör)

(Nedeni bilinmeyen faktör)

12-Varsa, infertilite nedeni olarak doktor tarafından konulan teşhis

.....
.....
.....

APENDIX 3

BECK DEPRESSION INVENTORY

Beck Depresyon Envanteri

Aşağıda gruplar halinde bazı cümleler yazılıdır. Her gruptaki cümleleri dikkatle okuyunuz. **Bugün dahil, geçen hafta içinde** kendinizi nasıl hissettiğinizi en iyi anlatan cümleyi seçiniz. Seçmiş olduğunuz cümlelerin yanındaki numarayı daire içine alınız. Eğer bu grupta durumunuzu anlatan birden fazla cümle varsa her birini daire içine alıp işaretleyiniz.

Seçiminizi yapmadan önce her gruptaki cümlelerin hepsini dikkatlice okuyunuz.

- 0 Kendimi üzüntülü ve sıkıntılı hissetmiyorum.
 - 1 Kendimi üzüntülü ve sıkıntılı hissediyorum
 - 2 Hep üzüntülü ve sıkıntılıyım. Bundan kurtulamıyorum.
 - 3 O kadar üzüntülü ve sıkıntılıyım ki artık dayanamıyorum.
-
- 0 Gelecek hakkında umutsuz ve karamsar değilim.
 - 1 Gelecek hakkında karamsarım.
 - 2 Gelecekte beklediğim hiçbirşey yok.
 - 3 Geleceğim hakkında umutsuzum ve sanki hiçbirşey düzelmeyecekmiş gibi geliyor.
-
- 0 Kendimi başarısız bir insan olarak görmüyorum.
 - 1 Çevremdeki birçok kişiden daha çok başarısızlıklarım olmuş gibi hissediyorum.
 - 2 Geçmişe baktığımda başarısızlıklarla dolu olduğunu görüyorum.
 - 3 Kendimi tümüyle başarısız bir kişi olarak görüyorum.
-
- 0 Bir çok şeyden eskisi kadar zevk alıyorum.
 - 1 Eskiden olduğu gibi her şeyden hoşlanmıyorum.
 - 2 Artık hiçbirşey bana tam anlamıyla zevk vermiyor.
 - 3 Herşeyden sıkılıyorum.
-
- 0 Kendimi herhangi bir şekilde suçlu hissetmiyorum.
 - 1 Kendimi zaman zaman suçlu suçlu hissediyorum.
 - 2 Çoğu zaman kendimi suçlu hissediyorum.
 - 3 Kendimi her zaman suçlu hissediyorum.
-
- 0 Kendimden memnunum.
 - 1 Kendimden pek memnun değilim.
 - 2 Kendime çok kızıyorum.
 - 3 Kendimden nefret ediyorum.

- 0 Başkalarından daha kötü olduğumu sanmıyorum.
- 1 Zayıf yanlarım veya hatalarım için kendimi eleştiririm.
- 2 Hatalarımdan dolayı her zaman kendimi kabahatli bulurum.
- 3 Her aksilik karşısında kendimi kabahatli bulurum.

- 0 Kendimi öldürmek gibi düşüncelerim yoktur.
- 1 Zaman zaman kendimi öldürmeyi düşündüğüm oluyor fakat yapamıyorum.
- 2 Kendimi öldürmek isterdim.
- 3 Fırsatını bulsam kendimi öldürürüm.

- 0 Her zamankinden fazla içimden ağlamak gelmiyor.
- 1 Zaman zaman içimden ağlamak geliyor.
- 2 Çoğu zaman ağlıyorum.
- 3 Eskiden ağlayabilirdim, şimdi istesem de ağlayamıyorum.

- 0 Şimdi her zaman olduğundan daha sinirli değilim.
- 1 Eskişine kıyasla daha kolay kızıyor ya da sinirleniyorum.
- 2 Şimdi hep sinirliyim.
- 3 Bir zamanlar beni sinirlendiren şeyler şimdi hiç sinirlendirmiyor.

- 0 Başkaları ile görüşmek, konuşmak isteğimi kaybetmedim.
- 1 Başkaları ile eskisinden daha az konuşmak, görüşmek istiyorum.
- 2 Başkaları ile konuşmak ve görüşmek isteğimi kaybettim.
- 3 Hiç kimse ile görüşüp konuşmak istemiyorum.

- 0 Eskiden olduğu kadar kolay karar verebiliyorum.
- 1 Eskiden olduğu kadar kolay karar veremiyorum.
- 2 Karar verirken eskisine kıyasla çok güçlük çekiyorum.
- 3 Artık hiç karar veremiyorum.

- 0 Aynada kendime baktığımda bir değişiklik görmüyorum.
- 1 Daha yaşlanmışım ve çirkinleşmişim gibi geliyor.
- 2 Görünüşümün çok değiştiğini ve daha çirkinleştiğimi hissediyorum.
- 3 Kendimi çok çirkin buluyorum.

- 0 Her zamanki gibi iyi uyuyabiliyorum.
- 1 Eskiden olduğu gibi iyi uyuyamıyorum.
- 2 Her zamankinden 1-2 saat daha erken uyanıyorum ve tekrar uyuyamıyorum.
- 3 Her zamankinden çok daha erken uyanıyorum ve tekrar uyuyamıyorum.

- 0 Her zamankinden daha abuk yorulmuyorum.
 - 1 Her zamankinden daha abuk yoruluyorum.
 - 2 Yaptığım hemen herşey beni yoruyor.
 - 3 Kendimi hiçbirşey yapamayacak kadar yorgun hissediyorum.
-
- 0 İştahım her zamanki gibi.
 - 1 İştahım eskisi kadar iyi değil.
 - 2 İştahım ok azaldı.
 - 3 Artık hiç iştahım yok.
-
- 0 Son zamanlarda kilo vermedim.
 - 1 İki kilodan fazla kilo verdim.
 - 2 Dört kilodan fazla kilo verdim.
 - 3 Altı kilodan fazla kilo verdim. Daha az yiyerek kilo vermeye alışıyorum.
Evet..... Hayır.....
-
- 0 Sağlığım beni fazla endişelendirmiyor.
 - 1 Ağrı, sancı, mide bozukluğu veya kabızlık gibi rahatsızlıklar beni endişelendiriyor.
 - 2 Sağlığım beni endişelendirdiği için başka şeyleri düşünmek zorlaşıyor.
 - 3 Sağlığım hakkında o kadar endişeliyim ki başka hiçbirşey düşünemiyorum.
-
- 0 Son zamanlarda cinsel konulara olan ilgimde bir değışme farketmedim.
 - 1 Cinsel konularla eskisinden daha az ilgiliyim.
 - 2 Cinsel konularla şimdi ok daha az ilgiliyim.
 - 3 Cinsel konulara olan ilgimi tamamen kaybettim.
-
- 0 Bana cezalandırılmışım gibi gelmiyor.
 - 1 Cezalandırılabilceğimi seziyorum.
 - 2 Cezalandırılmayı bekliyorum.
 - 3 Cezalandırıldığımı hissediyorum.

APPENDIX 4

STATE/TRAIT ANXIETY INVENTORY (STAI)

KENDİNİ DEĞERLENDİRME FORMU (STAI-I)

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her cümleyi okuyun, sonra da şu anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin anında nasıl hissettiğinizi gösteren cevabı işaretleyin.

	Hiç	Biraz	Çok	Tamamiyle
1. Şu anda sakinim.	()	()	()	()
2. Kendimi emniyette hissediyorum.	()	()	()	()
3. Şu anda sinirlerim gergin.	()	()	()	()
4. Pişmanlık duygusu içindeyim.	()	()	()	()
5. Şu anda huzur içindeyim.	()	()	()	()
6. Şu anda hiç keyfim yok.	()	()	()	()
7. Başıma geleceklerden endişe ediyorum.	()	()	()	()
8. Kendimi dinlenmiş hissediyorum.	()	()	()	()
9. Şu anda kaygılıyım.	()	()	()	()
10. Kendimi rahat hissediyorum.	()	()	()	()
11. Kendime güvenim var.	()	()	()	()
12. Şu anda asabım bozuk.	()	()	()	()
13. Çok sinirliyim.	()	()	()	()
14. Sinirlerimin çok gergin olduğunu hissediyorum.	()	()	()	()
15. Kendimi rahatlamış hissediyorum.	()	()	()	()
16. Şu anda halimden memnunum.	()	()	()	()
17. Şu anda endişeliyim.	()	()	()	()
18. Heyecandan kendimi şaşkına dönmüş hissediyorum.	()	()	()	()
19. Şu anda sevinçliyim.	()	()	()	()
20. Şu anda keyfim yerinde.	()	()	()	()

KENDİNİ DEĞERLENDİRME FORMU (STAI-II)

Bir önceki sayfada, “şu anda” kendinizi nasıl hissettiğiniz konusunda birtakım ifadeleri cevapladınız. Aşağıda verilen ifadeleri ise tüm hayatınız boyunca, genel olarak nasıl hissettiğinizi belirtecek şekilde cevaplayınız. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenizin. n üzerinde fazla zaman sarfetmeden genel olarak nasıl hissettiğinizi gösteren cevabı işaretleyiniz.

	Hiç	Biraz	Çok	Tamamiyle
21.Genellikle keyfim yerindedir.	()	()	()	()
22. Genellikle çabuk yoruluyorum.	()	()	()	()
23. Genellikle kolay ağlarım.	()	()	()	()
24. Başkaları kadar mutlu olmak isterim.	()	()	()	()
25. Çabuk karar veremediğim için fırsatları kaçıyorum.	()	()	()	()
26. Kendimi dinlenmiş hissedirim.	()	()	()	()
27.Genellikle sakin, kendime hakim ve soğukkanlıyım.	()	()	()	()
28. Güçlüklerin, yenemeyeceğim kadar biriktiğini hissedirim.	()	()	()	()
29.Önemsiz şeyler hakkında endişelenirim.	()	()	()	()
30.Genellikle mutluyum.	()	()	()	()
31.Herşeyi ciddiye alır ve etkilenirim.	()	()	()	()
32.Genellikle kendime güvenim yoktur.	()	()	()	()
33.Genellikle kendimi emniyette hissedirim.	()	()	()	()
34.Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınıyorum.	()	()	()	()
35.Genellikle kendimi hüzünlü hissedirim.	()	()	()	()
36.Genellikle hayatımdan memnunum.	()	()	()	()
37.Olur olmaz düşünceler beni rahatsız eder.	()	()	()	()
38.Hayal kırıklıklarını öylesine ciddiye alırım ki, hiç unutmam.	()	()	()	()
39.Aklı başında ve kararlı bir insanım.	()	()	()	()
40.Son zamanlarda kafama takılan konular beni tedirgin eder.	()	()	()	()

APPENDIX 5

BEM SEX ROLE INVENTORY (BSRI)

Aşağıda sıralanan özelliklerin size ne kadar uygun olduğunu (1)den (7)ye kadar bir ölçekte, uygun bulduğunuz şıkka ‘X’ işareti koyarak belirtiniz.

	Bana hiç uygun değil (1)	Bana uygun değil (2)	Bana pek uygun değil (3)	Emin değilim (4)	Bana biraz uygun (5)	Bana uygun (6)	Bana çok uygun (7)
1.Liderlik eden							
2.Saldırgan							
3.Sevecen							
4.Neşeli							
5.Şartlara uyan							
6.Kendini beğenmiş							
7.Hırslı							
8.Olayları tahlil eden							
9.Çocuksu							
10.Şefkatli							
11.Vicdanlı							
12.Geleneksel							
13.Kendi fikrini ortaya koyan.....							
14.Atletik							
15.Sert söz söylemeyen							
16.Gönül almaya istekli							
17.Dost							
18.Yetersiz							
19.Rekabetçi							
20.İnançlarını savunan							
21.Kadınsı							
22.Pohpohlanmaktan etkilenen.....							
23.Mutlu							

	Bana hiç uygun değil (1)	Bana uygun değil (2)	Bana pek uygun değil (3)	Emin değilim (4)	Bana biraz uygun (5)	Bana uygun (6)	Bana çok uygun (7)
24.Kıskanç							
25.Hükmeden							
26.Güçlü							
27.Nazik							
28.Kolay aldanan							
29.Yardımsever							
30.Günü gününe uymayan							
31.Lider yeteneği olmayan							
32.Bağımsız							
33.Çocuk seven							
34.Sadık							
35.Sevimli							
36.Düşünce ve duygularını gizleyen							
37.Bireyci							
38.Kolay karar verebilen							
39.Başkalarının gereksi- nimlerine duyarlı							
40.Utangaç							
41.Güvenilir							
42.Asık suratlı							
43.Erkeksi							
44.Kendine güvenen							
45.Tatlı dilli							
46.Derde ortak olabilen							
47.Samimi							

APPENDIX 6

SOCIAL SUPPORT SCALE

Sosyal hayatınızla ilgili sorulardan oluşan bu ankette her bir soruyu sadece arkadaş ve aile ortamınızı düşünerek cevaplayınız. Sizin durumunuza uygun düşen cevap basamağının altındaki boşluğa çarpı (X) işareti koyunuz.

	Hiçbir zaman	Çok nadir	Bazen	Çoğu zaman	Her zaman
1.İhtiyacınız olduğunda duygu ve düşüncelerinizi paylaştığınız dertleştiğiniz kişileri ne sıklıkta bulabiliyorsunuz?	-----	-----	-----	-----	-----
2.İhtiyacınız olduğunda yakınlarınız size sevgilerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
3.Sarılma, öpme, dokunma gibi yollarla fiziksel olarak sevgi görme ihtiyacı hissettiğinizde yakınlarınız bunu ne sıklıkta yaparlar?	-----	-----	-----	-----	-----
4.Herşeyin iyiye gideceği hakkında temin edilme ve teselli edilme ihtiyacını hissettiğinizde yakınlarınız bunu ne sıklıkta yaparlar?	-----	-----	-----	-----	-----
5.İhtiyacınız olduğunda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söyler?	-----	-----	-----	-----	-----
6.Zor bir durumla karşılaştığınızda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söylüyor?	-----	-----	-----	-----	-----
7.İhtiyacınız olduğunda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söylüyor?	-----	-----	-----	-----	-----
8.İçinde bulunduğunuz zor durumlarda yakınlarınız ne sıklıkta çare buluyor veya çözümler üretiyorlar?	-----	-----	-----	-----	-----
9.Gelecekle ilgili planlar yaparken yakınlarınızın görüşlerine ihtiyaç duyduğunuzda size ne sıklıkta katkıda bulunuyorlar?	-----	-----	-----	-----	-----
10.Maddi yardıma ihtiyacınız olduğunda yakınlarınızdan bu yardımı ne sıklıkta bulabiliyorsunuz?	-----	-----	-----	-----	-----

	Hiçbir zaman	Çok nadir	Bazen	Çoğu zaman	Her zaman
11.İhtiyacınız olduğunda yakınlarınız size araba veya benzeri değerli eşyaları ne sıklıkta ödünç verebiliyorlar?	-----	-----	-----	-----	-----
12.Yakınlarınız size işlerinizde ne sıklıkta yardım ediyorlar?	-----	-----	-----	-----	-----
13.Yakınlarınızın sizinle birlikte gideceğiniz yerlere gelmesine ve size eşlik etmesine ihtiyaç duyduğunuzda bunu ne sıklıkta yapıyorlar?	-----	-----	-----	-----	-----
14.Hastalık, iş gezisi, tatil vb. gibi nedenlerle evden uzak kalmanız gerektiğinde yakınlarınız ne sıklıkta aile bireylerinizle ilgileniyor?	-----	-----	-----	-----	-----
15.Yakınlarınız size değer verdiklerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
16.Yakınlarınız yaptığınız işlere değer verdiklerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
17.Uzun süren ve çözümlenmesi güç bir sorunla karşı karşıya olduğunuzda yakınlarınız ne sıklıkta sizin yanınızda olduklarını hissettiriyorlar?	-----	-----	-----	-----	-----
18.Yakınlarınız sizi ne sıklıkta yaptığınız yanlışlara rağmen kabul ediyorlar?	-----	-----	-----	-----	-----
19.Yakınlarınız size ne sıklıkta boş zamanlarınızda beraber olmayı, bir arada birşeyler yapmayı teklif ediyorlar?	-----	-----	-----	-----	-----

APPENDIX 7

COOPERSMITH SELF-ESTEEM INVENTORY (CSSEI)

Aşağıda insanların kendileri ile ilgili bazı duygularını açıklayan ifadeler yer almaktadır. Bu cümlelerden size uygun olanlarını “Aynen benim gibi”, uygun olmayanlarını ise “Benim gibi değil” sütununa X işareti koyarak belirtiniz.

	Aynen benim gibi	Benim gibi değil
1.Çevremde olup bitenlerden genellikle rahatsız olmam.	()	()
2.Başkalarının önünde konuşmak bana zor gelir.	()	()
3.Eğer elimde olsaydı kendimdeki pek çok şeyi değiştirmek isterdim.	()	()
4.Karar vermede fazla zorluk çekmem.	()	()
5.İnsanlar benimle olmaktan hoşlanırlar.	()	()
6.Evde kolayca moralim bozulur.	()	()
7.Yeni şeylere kolay alışamam.	()	()
8.Yaşıtlarım arasında sevilen bir kişiyim.	()	()
9.Ailem genellikle duygularıma önem verir.	()	()
10.Başkalarının söylediğini kolaylıkla kabul ederim.	()	()
11.Ailem benden çok şey bekler.	()	()
12.Benim yerimde olmak oldukça zordur.	()	()
13.Hayatımın karmakarışık olduğuna inanıyorum.	()	()
14.Genellikle başkaları düşüncelerimi kabul eder.	()	()
15.Kendimi yetersiz buluyorum.	()	()
16.Sık sık evden kaçmayı düşünüyorum.	()	()
17.Yaptığım işten çoğunlukla memnun olmam.	()	()
18.Başkaları kadar güzel değilim.	()	()
19.Söylenecek sözüm varsa onu söylemekten çekinmem.	()	()
20.Ailem benim duygularımı anlar.	()	()
21.Çok sevilen bir kişi değilim.	()	()
22.Genellikle ailemin beni dışladığını hissediyorum.	()	()
23.Yaptığım şeyler genellikle cesaretimi kırar.	()	()
24.Sık sık keşke başka biri olsam diye düşünürüm.	()	()
25.Güvenilir bir kişi olmadığımı düşünüyorum.	()	()

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The Determinants of Depression and Anxiety in Turkish Infertility Patients:
Social Support, Sex Role Orientation, Infertility Causality, and Self-Esteem

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ABSTRACT

The Determinants of Depression and Anxiety in Turkish Infertility Patients:
Social Support, Sex Role Orientation, Infertility Causality, and Self-Esteem

by

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The present study investigated the effects of social support, self-esteem, infertility causality, and sex role orientation on anxiety and depression in Turkish female infertility patients. Additional aims of the study were to understand whether depression and anxiety could be attributable to infertility and also provide an empirical description of the infertility patients. Subject sample consisted of 100 female infertility patients and 39 female patients with gastrointestinal problems (control group) who applied to a hospital for treatment. The Beck Depression Inventory (BDI), the State/Trait Anxiety Inventory (STAI), the Social Support Scale, the Coopersmith Self-esteem Inventory (CSSEI), and the Bem Sex Role Inventory (BSRI) were administered. Findings revealed that infertility patients had significantly higher depression and state anxiety symptoms in comparison to patients with gastrointestinal problems. Moreover, not having a current job and a prolonged treatment duration were found to be as risk factors for depressive symptoms on the part of the infertility patients. Social support was found to be as a determining factor for depression, state and trait anxiety, in that, the infertility patients with low levels of social support had significantly higher levels of depression, state and trait anxiety symptoms. Analyses also indicated that, those who had low levels of self-esteem had increased levels of depression and trait-anxiety symptoms. Infertility causality was found to be affecting only depression, in that infertile subjects with female type of infertility causality had higher levels of depressive symptoms.

KISA ÖZET

Türk İnfertil Kadın Hastalarda Depresyon ve Kaygının Belirleyicileri:

Sosyal Destek, Cinsiyet Rolü Eğilimi, İnfertilite Nedeni ve Öz-Saygı

Bu çalışma, infertil kadın hastalarda sosyal desteğin, öz-saygının, infertilite nedeninin ve cinsiyet rolü eğiliminin kaygı ve depresyon üzerindeki etkisini araştırmıştır. Depresyon ve kaygının infertiliteye atfedilebilir olup olmadığını anlamak ve infertil hastaların psikolojik özelliklerini tanımlamak, araştırmanın diğer amaçları arasında yer almıştır. Örneklem, 100 infertil kadın hasta ve hastaneye mide/bağırsak şikayetleri ile ilgili tedavi amacıyla başvuruda bulunan 39 kadın hastadan (kontrol grubu) oluşmuştur. Beck Depresyon Envanteri (BDI), Durumluluk/Süreklilik Kaygı Envanteri (STAI), Sosyal Destek Ölçeği (SS), Coopersmith Öz-Saygı Envanteri (CSSEI) ve Bem Cinsiyet Rolü Envanteri (BSRI) uygulanmıştır. Sonuçlar, infertil hastaların depresyon ve durumluluk kaygı belirtilerinin mide/bağırsak problemleri olan hastalara oranla önemli ölçüde yüksek olduğunu göstermiştir. Bununla birlikte, herhangi bir işte çalışıyor olmamak ve uzamış tedavi süreci infertil hastalarında depresif belirtilerin kendini göstermesinde risk faktörleri olarak belirmiştir. Sosyal destek, depresyon ve süreklilik/durumluluk kaygı üzerinde belirleyici bir faktör olarak bulunmuştur. Bir başka deyişle, sosyal desteği az olan infertil hastalar önemli ölçüde daha yüksek depresyon ve süreklilik/durumluluk kaygı belirtileri göstermiştir. Yapılan analizler aynı zamanda, öz-saygıları düşük olan infertil hastaların artmış derecede depresyon ve durumluluk kaygı belirtileri gösterdiğini bulmuştur. İnfertilite nedeni yalnızca depresyon ile ilişkili bulunmuştur: Kadın faktörlü infertilite teşhisi almış kadın infertil hastalar daha yüksek seviyede depresif belirtiler göstermiştir.

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CHAPTER 1

INTRODUCTION

Importance of Infertility

It has been reported that one out of 10 couples of childbearing age have some type of fertility problem (American Society for Reproductive Medicine, 2004; Resolve, 1999). According to the Society for Reproductive Medicine, 6.1 million couples from all socio-economic statuses, age groups, ethnic backgrounds and both genders are affected by infertility (Resolve). The proportion of infertility patients has not changed, but along with technological improvements and a public awareness of treatment options, there is an increase in people's demands for medical help for this problem area (Keye, 1999).

The Definition of Infertility

The most popular definition of infertility that has been used in most of the reference books of infertility and human reproduction in general, is as the inability to conceive a baby after one year of regular sexual intercourse without using contraceptives (Keye, 1999).

ESHRE's (European Society of Human Reproduction) Capri Workshop Group (2001) definitions of the other conditions are as follows:

Sterility, subfertility, infertility: "Those couples who do not achieve pregnancy within 2 years include the sterile members of the population, for whom there is no possibility of natural pregnancy, and the remainder who are subfertile. Together, they comprise the infertile population" (p. 1518). The term sterility can be used either for male or female, whereas the term subfertile can be used for the couple.

If the couple has never conceived (%30 of infertile couples) then they are considered to be experiencing *primary infertility*. *Secondary infertility*, on the other hand, is defined as the failure to conceive by a couple who had previously conceived (%70 of infertile couples).

In general, evaluation and treatment of both categories are the same.

Causes of Infertility

Infertility has been historically perceived as the female's inability only, but after medical developments it is now known that 40% of infertility is attributed to female factors, and for another 40%, male factors appear to be leading to infertility. The remaining 20% is attributed to both partners, while 10% of this 20% is not attributable to neither of partner. If this is the case, then this type of infertility is called "unexplained" or "idiopathic" infertility.

Causes of female infertility:

- Adhesion (scar tissue) from previous surgery or pelvic infections
- Antisperm antibodies
- Blocked fallopian tubes
- Cervical mucus that does not allow the sperm to enter the uterus and fallopian tubes (cervical factors)
- Hormonal abnormalities
- Irregular ovulation or failure to release an egg
- Maternal age
- Repetitive miscarriages
- Unexplained infertility
- Uterine lining which is inadequately prepared

Causes of male infertility:

- Abnormal sperm motility
- Antisperm bodies
- Suboptimal sperm or lack of sperm (Cooper-Hilbert, 1998)

Environmental toxins, declining health conditions, medical problems, inappropriate

timing of sexual intercourse, stressful lifestyles, personal problems, vocational pressures, general mental health have all been blamed as contributors to infertility in both sexes (Mahlstead, 1987; Allgeier, 2000).

Medical conditions that may cause infertility:

- Endometriosis
- Cancers-testicular; ovarian, Hodgkin's disease
- Klinefelter's syndrome
- Turner's syndrome
- Rokitansky-Küster-Hauser syndrome

Medical conditions whose treatment may cause infertility:

- Male hypertension
- Cancers-testicular, ovarian- cervical, breast, Hodgkin's disease

Since the times of earliest civilization, the cultural norm has emphasized women's conceiving ability. The religions of Judaism, Christianity and Islam all associate fertility with high self-esteem, while also holding a view which considers infertility as a sign of condemnation (Feuer, 1983). Historically, there has been an idealization of women who become mothers. Assumption that woman's most important and defining role is that of being mother has been called the "myth of motherhood" (Hare-Mustin and Broderick, 1979) and the motherhood mandate (Russo, 1976). Zucker (1999) asserted that cultural influences had impacts on the psychological theories about women's identities, roles and positions in society.

Views of Infertility

Psychogenic Model of Infertility

Freud and Erikson's theories which are considered as significant theories of personality, related female development to biological and social functions of women who

were considered as the ones who are to bear and raise generations. Freud claimed that women can only resolve their Oedipal conflicts and become adults when they get pregnant, and preferably to a son (Freud, 1933; cited in Zucker, 1999). Erikson made a resemblance between women's worlds and the "inner space" of a womb. He argued that preoccupations with shelter, boundaries, peace and other needs which are elements of inner space are clearly observed in young girls (Erikson, 1968; cited in Zucker, 1999). Both Freud and Erikson were in agreement in that all women share a goal of becoming mothers and they regarded being unable to bear a child as a pathology. According to their theories, women's internal conflicts about womanhood, femininity, and motherhood had a role in their reproductive difficulties (Forrest and Gilbert, 1992).

According to widely accepted societal norms, all married couples should reproduce and all married couples should want to reproduce (Miall, 1986). These assumptions about parenthood lead to a belief that there is something wrong with the individuals who don't want to have children, who delay having children intentionally or who want to have children but are unable biologically.

During the 1950s and 1960s, 50% of infertility problems could not be medically diagnosed or treated and there was a trend of making psychological explanations of reproductive problems in terms of causality and treatment. These theories mostly focused on psychological and subconscious disturbances in women and neurotic conflicted feelings about motherhood or their own mothers prevented conception. Fischer (1953) appears to be one of the first researchers who examined the link between psychological distress and infertility. He defined psychogenic infertility as "sterility in a couple in whom no pathology or dysfunction can be demonstrated by any method available to us today" (p. 3). Labandibar (1959) and Kostic (1960; cited in Seibel & Taymor, 1982) examined the relationship between sterility and frigidity. Eisner (1963), in her study with 20 infertile females tried to investigate the

perceived psychological differences between fertile and infertile women using the Rorschach test. She stated that all of the women showed emotional disturbances and between 40-50% of infertility were related to emotional factors. Dawkins & Taylor (1961) moreover believed that infertile men and women showed signs of psychosexual maladjustments.

Studies supporting the psychogenic view of infertility continued in the 1970s. And Mozley (1976; cited in Seibel and Taymor, 1982) asserted that infertility could be caused by unconscious motivations on the part of the infertile person and that infertility “could be considered a defense against dangers inherent in the reproductive functioning” (p. 137).

The literature on the psychogenic view was limited because of several factors, which were; not using reliable measures but relying heavily on clinical impression, exclusively focusing on female infertility, and making assumptions on the causality without any clear evidence (Greil, 1997).

The psychogenic model of infertility was held until there were medical developments on the diagnosis and treatment of infertility. There have been more research studies being conducted and lots of studies revealed that there were no differences between the personality traits of infertile women, when compared to fertile women. In cases where there were differences, it was impossible to link the psychological differences to infertility (Greil, 1997). Moreover, during the past 20 years, unknown factors leading to infertility have been reported as 5% or less, and use of psychological factors as the cause of reproductive failure has begun to lose its importance.

Stress and Coping View of Infertility

Lazarus and Folkman (1984) defined psychological stress as the “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (p. 21). Contrary to traditional

psychoanalytic view, the stress and coping model holds the view that there are different responses to particular reproductive difficulties (Zucker, 1999). Moreover, everybody is considered as unique in their reactions to stress depending on their coping resources.

According to Lazarus and Folkman (1984) cognitive appraisal is a process of classifying an event in order to understand how the event will impact the individual. This process is evaluative by which an individual assigns meaning to an event. Cognitive appraisal consists of two processes which are primary appraisal and secondary appraisal. Primary appraisal is evaluating an event as irrelevant or stressful. Secondary appraisal is also an evaluative process in which the individual determines which coping actions are available (for example, avoidance, minimizing, generating alternate solutions etc.), whether a specific coping option will lead to the desired goal and if that coping option can be successfully applied. According to Lazarus and Folkman (1984), secondary appraisals and primary appraisals act together, shape the amount of stress and the intensity of emotional reaction.

When examining the stress caused by infertility, the “cognitive theory of stress” is useful because in this theory, the unique characteristics of the individual and the unique qualities of the individual’s environment are taken into account. According to this theory, there is a bidirectional relationship between individual factors and environmental factors, and these factors lead to a unique emotional reaction.

Psychological Distress and Infertility

Although infertility is a medical condition, its diagnosis affects the couple’s lives on many dimensions. Infertility is generally appears as an unexpected life changing event.

Research indicates that the emotional experience of infertility generally has two components: chronic stress and the experience of loss. Although infertility is usually linked to a physical problem of a couple, the stress and loss associated with infertility can have serious

impact on psychological, physical, economic, and social well-being. Many studies have indicated that the problem of infertility is experienced as a crisis or major life stressor which may have negative effects on infertile individuals (Abbey, Andrews and Halman, 1991; Higgins, 1990).

The research studies in the last 20 years have contributed to the literature significantly by helping us to understand the nature of emotional impact of infertility on couples and individuals. Studies have shown that infertility is linked with emotional responses such as depression, anxiety, guilt, social isolation, and decreased self-esteem in men and women (Abbey et al. 1991; Bolter, 1997; Connolly, & Cook, 1987; Greil, 1997; Grover, Gannon, Sherr, and Abel, 1996; Hjelmsteadt, Andersson, Skoog-Svanberg, Bergh, Boivin and Collins (1999); Morin-Davy, 1998; Myers, 1990; Newton, Sherrard, and Glavac, 1999; Sadler & Syrop, 1998).

Female Emotional Response

Psychological factors were once thought to be causing infertility in nearly 50% of women experiencing it (Cook, 1987; Denber, 1978). Through the 1980s, the psychological literature on infertility focused on psychogenic causes such as grief, fear or anxiety. The popular view of infertility was perceiving infertility as caused by the woman's psychic conflicts about becoming mother or about becoming a mother or becoming pregnant (Kraft, Palombo and Mitchell, 1980). Additionally, women were thought to be creating her infertility by having done something wrong. Gender role behaviors which were seen as inappropriate for women, such as being educated and working, were believed to be causes of unexplained infertility (Morse and Van Hall, 1986). When an organic cause could not be found, women were diagnosed with a psychological condition. Emotional problems were seen as the cause, not as a consequence of infertility.

Although the view that psychological conflicts or problems lead to infertility has changed a lot in the last century, there is still a common belief that distress causes infertility in many women. There have been a lot of advice given to infertile individuals such as “just relax, it will happen”, “take a vacation” or “stop worrying too much” (Domar, 2002). All of the recommendations contain an idea that women have control over their infertility and so may be the one causing it.

The relationship between infertility and distress is a little complex. Studies which have investigated this relationship have not identified a causal direction (Edelmann and Connolly, 1986; Henriksen, 1999; Stanton, Sears, Lobel and DeLuca, 2002), and there is little evidence to support the idea that stress causes infertility. However, there is evidence which supports that infertility causes stress (Domar, Zuttermesiter and Friedman 1993)

Women have been found to experience more distress throughout the infertility process than men in the form of high anxiety, poor self-image, lower life satisfaction (Wright, Duchesne, Sabourin, Bissonnette, Benoit and Girard, 1991; Daniluk, 1997; Daniluk, 1988; Bernt, Bernt and Tacke, 1992; Kowalcek, Wihstutz, Buhrow, and Diedrich, 2001; Van Balen and Trimbos-Kemper, 1993; Wischmann, Stammer, Scherg, Gerhard and Verres, 2001; Lee and Sun, 2000; Fido, 2004; Lu, Yang and Lu, 1995; Lee, Kau, Lee and Lee, 1995; Domar and Seibel, 1990; Halman, Andrews and Abbey, 1994; Kee, Jung and Lee, 2000) and lower self-esteem (Wright, Duchesne, Sabourin, Bissonnette, Benoit and Girard, 1991; Xu, Ke and He, 1994; Lee and Sun, 2000) in certain research studies.

Some researchers have argued that, this situation could be because of the social pressures on women to become mothers (Abbey et al., 1991; Becker and Nachtigall, 1994; Ulrich and Weatherall, 2000). Regardless of which individual has the medical problem, in the general public and medical profession there has been a tendency to view infertility as the woman's problem (Berg, Wilson and Weingartner, 1992; Greil, 1991).

Women are more likely to see their inability to conceive as a direct reflection on their identity and their self-image, especially competent and successful women (Daniluk, 1997).

Women also are more eager to get medical treatments than men, stick more to the goal of being parents (Greil, 1997)

There is a significant study conducted by Domar, Zuttermesiter and Friedman (1993) which has shown that the levels of depression in infertile women are similar to those found among individuals with chronic illnesses such as cancer, myocardial infarction, postoperative bypass surgery, high blood pressure and HIV positive status.

Another line of research suggests that women and men experience different psychological reactions to infertility (Morrow, Thoreson and Penney, 1995). Some authors suggest that the differences in reactions to infertility depend on who carries the primary diagnosis. When the infertility is male-related, Leiblum (1987) found that men experience stress at levels similar to women who are diagnosed as infertile. Women, however, express higher levels of stress regardless of who carries the primary diagnosis of infertility.

Research studies have reported different reactions to infertility. The researchers explain this difference in the studies that investigate infertility-distress by individuals' different reactions to environmental stressors. Lazarus and Folkman's (1984) cognitive-phenomenological theory of stress have been used a lot in assessing individual reactions to situations and it is thought to explain women's various reactions to infertility.

Since infertility is a prevalent condition, it is important to get an insight about its psychological impact. Because most of the research studies-as stated above-indicate that women have higher levels of distress than men, and because women have been treated more for infertility-related problems than men (American Society for Reproductive Medicine, 2004), it is important to focus particularly on women's experience of infertility.

Infertility as Reproductive Trauma

Infertility is conceptualized as a *reproductive trauma* by Jaffe, Diamond, and Diamond (2005). The authors make a definition of trauma as “any event that goes beyond the range of usual human experience and is overwhelming to the person in a physical and/or emotional way. It is a threat to integrity of the person himself or someone he cares about” (p. 4). Flashbacks, hypersensitivity and irritability occurs generally in addition to a sense of numbness and withdrawal. Trauma also causes anxiety, depression and concentration difficulties on the part of the traumatized person. Being diagnosed as an infertile patient can be considered as a traumatic experience according to Jaffe et al. (2005). Since reproductive functioning is a crucial aspect of people’s physical selves, when there are problems regarding it, the infertile person feels loss and despair, perceives this condition as a serious threat to his/her relationships and several other psychological problems may appear. Experiencing the trauma of infertility is like losing everything that you think you already have. The authors further state that infertility patients re-experience this trauma again and again, in a constant way by feeling loss after every unsuccessful treatment attempts

Menning (1977) referred to infertility as a developmental crisis that can threaten a couple’s future goals, while Shapiro (1982) described the impact of infertility as a “brutal and unanticipated shock” (p. 387). It is estimated that fifty to sixty percent of the couples will eventually conceive, compared to only 5% who would conceive if they did not seek medical interventions (Andrews, Abbey and Halman, 1991; Shapiro, 1982).

Once an infertility diagnosis is made, the lives of the individuals begin to change dramatically and they experience a real difficulty in terms of their emotional and financial resources (Braverman, 1997; Domar and Kelly, 2002; Cwikel, Gidron, and Sheiner, 2004). Fertility treatments, ranging from medical monitoring to hormonal treatments and in vitro fertilization (IVF), carry physical, economical and emotional burdens on women and their

partners. A couple that is trying to conceive feels frustration and disappointment if a pregnancy is not easily achieved (Cwikel et al, 2004). If the difficulties continue and the man or woman is labeled as having fertility problem, then this may have a negative impact on self-esteem, body image, and masculinity or femininity (Cwikel et al. , 2004).

Childbearing is an important goal for a marriage and not being able to have children may cause problems in the marriage. The study conducted by Ramezanzadeh, Aghssa, Abedinia, Zayeri, Khanafshar, Shariat, and Jafarabadi (2004) is especially important for the conceptualization of this study on Turkish sample consisting of infertile couples since Turkey is also an Islamic country. Ramezanzadeh et al. (2004) mentioned the differences between Islamic vs. non-Islamic countries in terms of the social conditions, pressures upon the infertile couple and women's identities. They talked about the importance and value of childbearing in Islamic and eastern countries such as Iran. Moreover, according to the authors, having a child provides some sense of stability for the marriage and leads to increased marital satisfaction. They stated that, in their culture and society, negative attitudes to infertility are detrimental. They continued in their assertion by saying that having a child is psychologically or effectively, a vital factor for women, and the absence of children may cause marital problems such as divorce or even a second marriage especially in Islamic societies where it is possible for men to marry with more than one woman. Intervention of relatives especially husband's family, negative attitudes and behavior of family, friends, neighbors, etc were also stated by them as causing psychological problems for infertile women. Generally infertile women experience negative social consequences including marital instability, stigmatization and abuse. Infertility was considered by them as having a serious effect on both the psychological well being and social status of women in their country. This discussion is very much related to the present study since Turkey is also an Islamic country and the social conditions of women are much the same in the rural regions. Çanakçı, Ö. (1992) also made a study on

infertile women and the differentiating factors for the impact of social pressures. She found that working and highly educated women

Role of Infertility Diagnosis on Psychological Distress

One other area of focus has been how the diagnosis of a specific infertility factor affects men and women psychosocially. There have been a considerable amount of research studies that have investigated the relation between the infertility diagnosis (male factor, female factor, combined factor or unexplained) and psychological distress.

One of the views regarding the relationship between the causal factor and psychological distress is that, the experience of infertility differs according to which partner is viewed as “causing” the infertility. Miall’s (1986) study showed that women who were infertile had more difficulty coping with the problem than women whose husbands were the source of infertility.

In another study, Demyttenaere, Bonte, Gheldof, Vervaeke, Meuleman, Vanderschuerem, and D'Hooghe (1998) examined the influence of depression levels and coping on IVF outcome in women, taking into account the cause of infertility. They included 98 participants who were undergoing IVF treatment in their study and administered psychometric tests at the first visit (day 3) of the treatment cycle. After the patients had their pregnancy tests, the authors looked at the depression levels of the patients at their first visit to the hospital. The authors found that, the non-pregnant group reported increased negative emotions. For the patients with a female indication for IVF, increased depressive symptoms were associated with lower pregnancy rates, whereas in the subgroup with a male indication for IVF, increased depressive symptoms were associated with higher pregnancies. The authors concluded that expression of negative emotions predicts depression levels and outcome in

IVF. They additionally stated that the cause of infertility should be taken into account when investigating the relation between psychological functioning and outcome in IVF.

There were also studies which have taken couples as the unit of analysis and comparisons were made across sexes.

In a study conducted by Bernt, Bernt and Tacke (1992) three groups of sterile couples with functional (unexplained), tubal and andrologically caused sterility were compared for the evaluation of sex-and diagnosis-dependent kinds of overcoming of their disease. Anamnestic data, anxiety, the coping strategy of sterility and as well the couple and personality structure are analyzed. Independent of the organic cause of sterility the women showed a higher emotional reaction level (anxiety, coping stress) than their husbands.

Several other studies support the view that women tend to show more distress than men regardless of the nature of the infertility diagnosis, that is to say, whether it is a male or female factor leading to infertility. Lee Sun, and Chao (2001) conducted a study on Chinese couples. They compared the differences in distress, marital and sexual satisfaction in husbands and wives based on an infertility diagnosis. The results showed that there were no differences in marital and sexual satisfaction between wives and husbands with unexplained infertility. Only wives with a diagnosed female infertility expressed higher distress regarding infertility than their husbands. Although no differences in psychosocial responses were found among husbands, regardless of the diagnosis, wives with a diagnosed female infertility experienced higher distress in self-esteem and less satisfaction in acceptance by in-laws than wives experiencing a diagnosed male infertility. The authors emphasized that the diagnosis of infertility was an important factor in assessing the differences in infertility distress and marital and sexual satisfaction between husbands and wives.

Wright et al. (1991) stated that women with female, male or combined diagnosis reported significantly higher BDI scores when compared with women with unexplained

infertility. There were no differences between male and female factor diagnosis.

Moreover, Daniluk's (1992) study showed that women could also attribute infertility to a biological failure or past abortions or extra-marital affairs even when the infertility was caused by "male factor". On the basis of these findings, women may also be considered to feel responsible for every kind of reproductive difficulty and may lose their contact with real situations. Another study conducted by Robinson and Stewart (1996) confirms these results in that the authors reported that in cases where the cause of infertility was undetermined women were more likely than men to attribute it to themselves.

Edelmann, Connolly and Bartlett (1994) examined the extent to which the psychological profiles of couples entering an IVF program were influenced by evidence of previous fertility, the history of fertility investigations, the diagnosis made, and the coping strategies adopted. A sample of 152 couples was administered a number of standardized psychological instruments and a coping strategies questionnaire. They showed little variation from the normative range on the standardized measures. There was little evidence of differences between couples referred for primary or secondary infertility, between those with some evidence of fertility and those with none, or between different diagnostic groups.

A study examining the sexual function of infertile couples in which the husbands received an azospermia diagnosis found that more than half of the men experienced a period of impotence following the diagnosis (Berger, 1980). One study showed that men with a diagnosed male infertility expressed more negative emotional responses than men without a diagnosed male infertility with respect to feelings of stigma, loss and self-esteem (Nachtigall, Becker, and Wozney (1992). The authors also reported that the gender identity for all women, regardless of the presence or absence of diagnosed female infertility, was negatively affected.

Fassino, Piero, Boggio, Piccioni and Garzaro (2002) recorded the personal characteristics of 156 infertile and 80 fertile couples, and measured their degree of

psychopathology. When the researchers divided the couples according to the nature of the infertility-organic, functional (unexplained)-they found that anxiety, depression, and a tendency toward anger suppression were predictors of the diagnosis of organic or unexplained infertility in women, with 97 percent accuracy. For infertile men, anxiety was also an important independent predictor of unexplained infertility, while depression was more predictive of organic infertility. However, with men - unlike women - anger did not appear to influence infertility in men. The authors concluded that, on the bases of the results which suggested a poor psychological functioning beyond the distress created by infertility, there might be a need to identify a subgroup of infertile subjects.

Social Considerations

The influence of culture plays a great role in male and female responses to infertility. Parents, tradition, social norms, and religion all play an important role in the transmission of values and gender roles to children. Cultural and gender distinctions are made between boys and girls from the moment they are born. The toys they play with differ according to their genders. Girls are given mostly toys that are related with their femininity, and caring such as dolls, cooking pots, and more home-related objects, while boys on the other hand are given more “manly” toys like trucks, things related with sports, and guns (Deveraux and Hammerman 1998). Moreover, girls are more rewarded when they exhibit feminine behaviors like caring, while boys are more encouraged to show their toughness and manly attitudes.

Abbey, Andrews and Halman (1991) talked about the differences in male and female responses to infertility by identifying the different socialization process of both sexes as one of the contributing factors. Although both men and women are socialized in regards to parenthood, there seems to be much more emphasis on the female’s role in motherhood in comparison to male’s role in fatherhood. Chodorow and Rich (cited in Daniluk, 1997) noted

that although both men and women believe that parenthood is a developmental issue for them, society identifies motherhood as the central and defining role for women. Daniluk (1997) stated that even though women have more alternative roles currently, “motherhood” still continues to be the primary and defining role for them. Women are under the influence of the cultural system such that infertility appears to be not only a medical diagnosis but also a definition of themselves. For this reason, having an infertility problem can be considered as an attack on “female identity”. Since infertile women can not meet the cultural expectations of motherhood, they experience feelings of loss and depression as Daniluk (1997) mentioned. In addition, if the infertile women’s friends become mothers and start to focus more on household activities and child care, their friendship comes to second place. So women face another situation where they feel excluded from lives of close women in their lives. On the other hand, these losses of relationships are not that great for men, as stated by Daniluk (1997).

Infertility is like a barrier between the spouses and they experience a real difficulty in fitting to the gender roles emphasized by the culture. Women who are infertile have no ability to actualize the “mother” role, while men don’t have the ability to show the culturally emphasized masculine role. This situation is very much connected with the couples’ feelings of loss and depression. They in a sense lose a part of themselves, and feel that their identities are in question.

Infertility and Depression

Major depression is said to be twice as prevalent in women as it is in men in the general population (Llewelyn, Stowe, and Nemeroff, 1997). There has been a considerable amount of research reporting depression as a consequence of infertility (Domar & Seibel,

1990; Leader, Taylor & Daniluk, 1984; cited in Domar, Broome, Zuttermeister, Seibel and Friedman, 1992).

There are some studies which demonstrate a reciprocal relationship between psychological factors and infertility, which in turn affects treatment success. Beaurepaire, Jones and Tennant (1993) found that there was a significant difference between the level of depressive symptoms observed among women entering IVF for the first treatment and repeat cycle women. Clinically elevated depression scores were most prevalent among repeaters (25%), relatively prevalent among first time patients (15%), compared to community norms (12%). Furthermore, among the first cycle women those with symptoms of depression were less likely to achieve pregnancy than non-depressed women. This study was important for its demonstrating the reciprocal relation between depression, the psychological distress created by infertility and IVF outcome. Newton, Sherrard and Glavac (1999) conducted a study which showed that there were significant increases in the prevalence of mild-moderate levels of depression in women following failure of an IVF treatment. Predisposition toward anxiety, pre-IVF levels of depression and nulliparity were predictors of opposite psychological reactions to IVF-failure.

Many women feel that fertility treatment has significant impact on their psychological health. Freeman, Boxer, Rickels, Tureck and Mastoinni (1985) found that approximately half of women who were under infertility treatment rated infertility as the most stressful experience of their life, in comparison to only 15% of men under the same treatment. Another study conducted by Oddens, Tonkelaar and Nieu (1999) compared infertile women waiting for IVF treatment and women without infertility problems. The study results showed that infertile women had four times more depressive symptoms than the control group of fertile women. The authors also reported that infertile women's scores on self-assessed attractiveness, anxiety, memory/concentration were lower than the scores of the control group.

Hynes et al. (1992) compared women who had a failed IVF cycle with a control group (included women who did not have any form of infertility treatment) both before and after the IVF cycle. While the difference between the depression scores of the two groups was not significant before the IVF cycle, the difference in depression scores after the failed IVF cycle was significant. The treatment group had high levels of depression before the IVF failure, so the authors stated that the treatment failure led to more depressive mood which was already present.

Domar and her colleagues (1992) conducted a study examining the prevalence rates and predictability of depression in infertile women. 376 infertile patients were recruited for the study from an infertility treatment center. A control group of fertile women was obtained through patients from a hospital based on gynecological practice. Participants were asked to complete two depression measures, the Center for Epidemiological Studies Depression Scale (CES-D) and the Beck Depression Inventory (BDI). The (CES-D) scale was specifically designed for research. Participants were also asked to complete a demographic form measuring age, duration of infertility, length of infertility treatment, past treatments, primary or secondary infertility, infertility diagnosis, and history of psychotherapy. The results of the study indicated no significant differences between infertile women and fertile women in terms of demographic variables. However, the mean BDI score of infertile women (8.3) was significantly greater than that of the control group. Comparisons between the two groups were also significant when measured by the CES-D. Compared with control subjects, a significantly greater percentage of infertility women scored in the depressed range on the BDI (37% compared to 18%). It was also noted that none of the control subjects reported depression levels greater than 18, while 8.4% of infertile women scored above 18.

A history of infertility-related surgery (higher BDI) and a history of psychotherapy before the treatment periods were among the demographic variables which influenced

depression outcomes. Duration of treatments were also related to depression as women in the 2-3 year range of treatments reported significantly higher levels of depression than women with durations less than one year or greater than six years. Diagnosis was also predictive of depression. Women with female, male, or combined diagnosis reported significantly higher BDI scores when compared with women with unexplained or undiagnosed infertility. There were no significant differences between male and female factor diagnosis. The findings of the study showed that depression was a significant problem among infertile individuals.

A study conducted among Chinese women in Hong Kong examined the psychological consequences of infertility and treatment failure. The researchers used General Health Questionnaire in their study and they reported that the prevalence of distress increased from 33 to 43% after treatment failure while the prevalence of depression remained constant (8%). The results of the study also identified the duration of infertility as a predictor of the severity of depression (Lok, Lee, Cheung, Chung, Lo and Haines (2002). This result about positive relation between the duration of infertility and depression is in contrast with Domar et al.'s study's results which showed a U-shape relation between the two (Domar et. al, 1992).

Another study's (Verhaak, Smeenk, Kremer, Braat and Kraaimaat, 2002) findings showed that after a failed first treatment cycle, the couples showed an increase in depression and one in eight women had a clinically significant form of depression.

In a study conducted by Downey and McKinney (1992), the psychiatric status of 118 women who were under infertility evaluation were examined. The scales that were used in the study were Reproductive Functioning Questionnaire, the Ideas About Your Future Questionnaire, the Attitudes of Family Questionnaire, the Partner Relation Relationship Satisfaction Scale, the Concept Scale, The Brief Symptom Inventory, and the Mood Disorder Questionnaire. Although not statically significant, the authors noted that 11.0% of infertile women in the study met criteria for a current major depressive episode compared to only

3.6% of the control group. Infertile women and women in the control group experienced depression similarly. Although the findings seem to be contradicting to Domar's (1992) findings, it is difficult to make comparisons between the two studies since they used different instruments (BDI and CES-D compared with the Brief Symptom Inventory and the Mood Disorder Questionnaire).

Lapane, Zierler, Lasater, Stein, Barbour and Hume (1995) conducted a study examining the potential association between a history of depressive symptoms and having infertility diagnoses in women. They collected data from the household health survey of the Pawtucket Health Program which is a biannual study conducted between 1981 and 1990. The study selected a sub-sample of 2920 women ages 18 to 45 who participated in the PHHP and sent them a data collection instrument measuring their history of depressive symptoms, antidepressant medication use, history of sexually transmitted diseases, and history of infertility. The results showed an association between a history of depressive symptoms and a two-fold increase in risk for infertility. These results were similar to a study, which found that women who were "unable to conceive after 12 months of unprotected intercourse were twice as likely to report a history of depressive symptoms prior to attempting to conceive as women who were successful in conceiving within a 12-month period (Wagner & Berenson, 1994).

Özkan and Baysal (2006) identified a negative relationship between depression and employment, economic status and education of infertile women. They also stated that infertility, infertility treatment and marriage duration were positively correlated with depression and other psychological symptoms.

Infertility and Anxiety

Anxiety is one of the most common emotional reactions among IVF patients.

Women's anxiety levels usually increase throughout the course of the treatment and peaks as they wait for the treatment outcome after oocyte retrieval and embryo transfer (Laffont and Edelmann (1994). The elevation of anxiety has many causes. Diagnostic and intervention procedures, which are often long and intrusive, include physical pain, disturb the patient's daily routine, and have a negative impact on the sexual relationship of the couple. Moreover, patients often perceive IVF treatment as their very last chance of childbearing and may have unrealistically high expectation of the treatment.

Cook, Parsons and Mason (1989) stated that anxiety is the major difficulty facing patients during infertility. Edelmann and Golombok (1989) suggested that anxiety may induce hyperprolactinaemia and this may have a connection with reduced conception rates.

In a study conducted by Ozkan and Baysal (2006), the prevalence, severity and predictability of psychiatric symptoms of infertile women and the effects of infertility on marital and sexual relationships were investigated. The authors included 50 infertile and 40 healthy participants in the study and used State trait Anxiety Inventory and Beck Depression Inventory as measures. They found depression and anxiety to be significantly higher in the infertile group.

For women who have been dealing with infertility problems, the support from their spouses has a significant role on their well-beings. In a study conducted by Matsubaytashi, Hosaka, Izumi, Suzuki, Kondo and Makino (2004), anxiety and depression in childless Japanese women were found to be significantly associated with lack of their husbands' support and feelings of stress. Brigenti, Martinelli, Ardeni and La Sala's study (1997) also revealed that state and trait anxiety of infertile women were influenced by the level of marital satisfaction.

Gulseren, Cetinay, Tokatlioglu, Sarikaya; Gulseren and Kurt (2006) explored anxiety levels in infertile Turkish women and they concluded that; along with age, attempts at non-

medical solutions and pressure from the husband's family's pressures, anxiety was a variable that predicted pregnancy negatively.

Eugster, Vingerhoets, van Heck and Merkus (2004) compared episodic anxiety's predictive value on treatment outcome after the second IVF and ICSI with the predictive value of trait anxiety and acute anxiety. The authors made an operational definition of episodic anxiety as high state anxiety. The results of the study showed that women with episodic anxiety were less likely to become pregnant after the second IVF/ICSI.

Beaurepaire et al.'s study results also showed that a significant percentage (31%) of patients experienced clinically significant levels of state anxiety, while level of trait anxiety was comparable to normative groups. Cook et al. also found high levels of anxiety among infertile women.

Demyttenaere, Nijs, Evers-Kiebooms and Koninckx (1991) found higher levels of anxiety by using the State Trait Anxiety Inventory (STAI) in women undergoing IVF as compared to normative groups

Anxiety was suggested to be an outcome of an unsuccessful infertility treatment in a major amount of studies Verhaak et al. (2002)'s study showed that women showed increased anxiety levels after a first failed treatment cycle.

Leiblum, Kemmann, Colburn, Pasquale and DeLisi (1987) assessed distress level of 28 women who had unsuccessfully completed one or more trials of in vitro fertilization (IVF) and found that between 20 and 42% of the women experienced increased levels of anxiety.

Infertility and Self-esteem

Infertile women also appear to have worsened self-esteem in several studies. There is a consensus that self-esteem and grief are commonly experienced by infertile women. Results of the study conducted by Wright et al. (1991) indicated that women showed more distress in

self-esteem compared to their partners.

In another study on a Chinese sample, the authors (Xu L, Ke HX, He FF., 1994) pointed out that women who were in an infertility treatment for a long time had low self-esteem.

Similarly, Lee and Sun (2000)'s study on Chinese infertile couples, demonstrated that husbands' levels of self-esteem were significantly higher than their wives. In another non-Western country, Taiwan, Lee TY, Sun GH, Chao SC. (2001), the researchers found that wives who were diagnosed with female infertility experienced higher distress in self-esteem and less satisfaction in acceptance by in-laws than wives experiencing a diagnosed male infertility.

Downey and McKinney (1992) conducted a study in which they examined the psychological status of infertile women. 75% of the women reported significant changes in their moods and over 1/3 reported decreased levels of self-esteem.

A qualitative study conducted by Greil et al. (1988) revealed that women reported a great difficulty adjusting to loss, as well as showing higher levels of depression, anger and self-esteem.

Brigenti et al.'s (1997) study showed that self-esteem was one of the factors that helped women to deal effectively with the infertility condition and its treatment. Women with high-self esteem had less distress.

As demonstrated by this review, while the majority of studies found that women experiencing infertility also experiences distress, there is a wide range of distress reactions to the experience of infertility. Thus, it is important to begin to isolate the different variables that may predict increased levels of distress in women experiencing infertility. Below, there will be a focus on some specific potential predictors of distress which are hoped to be a

contribution to the literature regarding which variables may lead to distress in women experiencing infertility.

Gender Role Identity and Infertility

There has been a view which asserts that a person's gender role identity affects his or her behavior in different environments and situations. Along with this perspective, women's infertility experiences can be thought of as being affected by their gender role identities. Women's gender roles have been defined by traditionally expressive and motherly characteristics like softness, sensitivity, and emotionality (Perkel, 1985). For women, motherhood is seen as something biological performance to be actualized, one of the most significant life roles and women are mostly defined by their ability to become mothers (Berg, Wilson and Weingartner, 1992; Mahlstedt, 1985). Because of the social norm that women should bear children, those who can not bear children are seen as violating gender role norms. Hare et al. (1979) found that in their sample woman's identity was dependent on motherhood and that not having children was viewed as unnatural and selfish.

Women who have more traditional gender role identities can be more likely to experience more distress as a result of their infertility since they may feel they have failed to meet the traditional gender roles. In contrast, women who are less invested in traditionally expressive gender role identities may be more likely to experience less distress because of infertility. There have been some studies in the literature which have examined the relationship between gender role identity and infertility.

Cook's (1993) research focused on the relationship between gender roles and emotional well-being in infertility patients; specifically state-trait anxiety, depression, marital adjustment and sexual adjustment. He assessed 58 women and 31 men who were about to start an IVF or donor insemination at an infertility clinic using the Bem Sex Role Inventory

(BSRI) which consisted of four categories of gender role identity: masculinity, femininity, androgyny, and undifferentiated. No differences were found on measures of depression, marital adjustment, or sexual functioning between feminine gender-typed women and masculine gender-typed women. However, the feminine gender typed women reported significantly higher levels of anxiety than masculine gender typed of women.

Edelmann and Connolly (1996) investigated the effect of gender role identity on psychological functioning (anxiety, depression, and marital functioning) in 130 couples presenting with undiagnosed primary infertility on their first visit to a fertility clinic. The investigators used the BSRI. Scores for the four gender role groups were similar on all measures except that masculine women reported slightly higher anxiety scores and lower marital adjustment than the other three groups. These results contradict with Cook's (1993) results who found higher anxiety in feminine gender typed women and no difference in marital adjustment among the four gender role classifications.

Adler and Boxley (1985) examined gender roles and coping styles of 103 fertile 20 infertile, and 41 formerly infertile individuals who succeeded to conceive. Self-esteem, body image, marital adjustment, psychiatric symptoms, and self-defeating behaviors were measured and compared in terms of gender role types. The participants were chosen among patients from private infertility clinics, private obstetrics and gynecology practices. Those participants who scored higher on masculinity and androgyny experienced fewer problems coping with infertility distress and self-esteem than those who were feminine and undifferentiated. No differences were found in coping styles between the fertile, infertile and formerly infertile patient groups.

Perkel (1985) examined the relationship among infertility, self-esteem, psychopathology, gender role identity, and the social meaning of parenthood. His study included 26 infertile couples and he measured gender role identity with BSRI. He found

significant differences between the self-esteem scores of androgynous and feminine infertile individuals in that, androgynous individuals showed higher levels of self-esteem. These results support Adler and Boxley's (1985) findings that androgynous gender typed women had higher self-esteem levels, while on the other hand conflict with their findings that masculine typed women experience higher levels of self-esteem than feminine gender typed women.

In another study conducted by Berg et al. (1992), the psychological reflections of infertility treatment were investigated. The authors specifically looked at gender differences and gender role identification. They used the PAQ to assess gender role identity and two classifications of gender role identity, being masculine and feminine, were identified. Their sample included 104 married couples without children with primary infertility. The emotional strain, marital satisfaction, and sexual satisfaction of the couples were explored. In men and women, masculinity was related to lower levels of distress, femininity was related to increased satisfaction, and both masculinity and femininity were related to increased marital satisfaction. The authors asserted that gender role identification predicted distress for individuals experiencing infertility more than gender did. However, Berg et al.'s (1992) study can be considered as having limitations in the sense that they used only two categories of gender role instead of four.

Collard's (1999) research explored the influence of etiology of infertility, gender role identity, and attribution of responsibility on psychological distress and marital and sexual functioning. The researchers took couples as participants which consisted of 84 females and 74 males. They had been diagnosed and had primary infertility. Gender role identity was measured by the Short Form of the BSRI. Collard found that the participants with androgynous gender role identities reported significantly higher levels of marital intimacy than individuals with masculine, feminine and undifferentiated gender role identities. Women with

masculine gender role identities showed significantly higher levels of depression, anxiety, and hostility than those with feminine or androgynous gender role identities. These results differ from Cook's (1993) study's results in which the depression levels of masculine and feminine gender typed women were not found to be different, and feminine gender typed women had higher levels of anxiety. However, these results of Collard's which showed that masculine gender typed women had higher anxiety levels were consistent with the findings of Edelmann and Connolly (1996).

Masculinity was associated with lower emotional strain and greater marital satisfaction for both men and women and enhanced sexual satisfaction for men. Femininity was related to enhanced marital and sexual satisfaction for both genders (Berg, Wilson, and Weingartner, 1991). In terms of exploring the relationship between femininity and psychological distress, more research studies are needed to make healthy assumptions.

Social Support and Infertility

Research studies on the social support system of infertile couples have generally focused on the perceptions of the infertile individuals themselves (Miall, 1994). According to Greil et al. (1988) the experience of being infertile is not an issue just between the couple and their doctor but also family and friends also get into the picture. Social support, whether it is familial, peer or spousal, can be conceived as something that lowers the level of stress against the negative effects of a stressful situation. The fact that infertility is a stressful event is affected by the influence of stigma and infertile couple's feelings of failure when trying to act according to the social norms.

Matt and Dean (1993) have argued that support from friends serves to provide a reference point where one evaluates his/her own health and social role, so this communication net can be considered as protective against self evaluation. This support system acts as a

buffer in which the person appraises himself positively. Miall (1994) on the other hand argued that the social support provided to infertile individuals generally increases the stress levels of infertile individuals instead of decreasing. Miall (1994) asserted that if social support is offered by presenting an evaluation base for one's health and social roles, an emphasis on the biological cause may lead to feelings of inadequacy, incompleteness rather than an emotional support, on the part of women. For this reason, social support may have a negative influence on infertile individuals. The social context in Asian/Eastern countries supports this view. Boonmogkon (1995) stated that in resource-poor countries where children are highly valued for cultural and economical reasons, childlessness often creates enormous problems for couples; women are the ones who are blamed mostly for infertility. Motherhood is often the only way for women to get a higher status in their family and community. In some places, the women are isolated because of their inability to get pregnant. Boonmogkon mentions the attitudes of the close relatives and in-laws in underdeveloped countries: In Mexican society, if no pregnancy occurs after several months after the marriage of the couple, the mother, mother-in-law, or another older women in the family use some remedies to warm the woman's body. Also, In Pakistan, in-laws have strong influence on women who experience infertility, and they are one of the main factors for seeking treatment (Boonmogkon, 1995)

Abbey et al. (1991) also stated that significant people who are to be expected to provide social support may recommend solutions that are stigmatizing and behave in ways that can be considered as unsupportive.

Another factor that increases the stress and emotional effect of infertility is the belief that most people have, which is thinking of infertility caused by the psychological characteristics. Miall (1994) talked about the common belief about what all the infertile couples need is to relax or take a vacation or that they are trying too hard. These thoughts may carry well intentions but also carry wrong information; they moreover are perceived as

stigmatizing and demanding on the part of the couple. Since this attitude to infertile individuals are widely seen, one can perceive social support as can be experienced in a negative way.

On the contrary, Amir, Horesh and Lin-Stein (1999) found that social support protected women experiencing infertility from stress of infertility diagnosis, and helped women to feel much better about themselves (1999).

Several other authors also have shown that infertile couples look for and are in need of talking about their feelings with their friends (Conway and Valentine, 1988; Fouad and Fahje, 1989; Mahlstead, 1985). Gibson and Myers (2002) found that family and partner supports are very important coping with infertility stress, so while individuals experiencing infertility, especially women, may seek out social support, often they may receive inadequate or negative social help from family and friends.

Güz, Özkan, Yanık and Yanık (2003) made a study on a sample consisting of Turkish infertile women with the aim of determining the possible psychiatric symptoms resulting from infertility. They also have explored the potential factors that may cause distress. 50 women with primary infertility and 50 health controls were evaluated using the Beck Depression Inventory, Spielberger Stait-Trait Anxiety Inventory, Rosenberg Self-esteem scale and Symptom Checklist scale. They were also asked to describe the reactions received from their husband, husbands' families and their social group because of infertility. Psychiatric symptoms were not significantly different between the two groups. However, within the infertile group, depression and anxiety were more frequent in the women who received negative reactions from their husbands, their husbands' families and social group. There has been an increase in the levels of depression, anxiety and self-esteem in the infertile women as age and the duration of infertility increased. This study shows that the presence or absence of social support is an important factor on the well-being of infertile women.

Another issue regarding social support is the medical aspect of infertility, which can be examined in terms of cultural context. Infertility problems are thought of as a “medical” condition along with the advanced new reproductive technologies. This can be seen as stigmatizing, in that if the couples don’t try all of the possible medical treatments, they may be considered as not actualizing their social roles. (Miall (1994) notes that medical intervention can be conceptualized “solution” but also can be “stigmatizing” when it is suggested by others who have good intentions according to themselves. However, the people who encourage medical intervention may increase the stress level of the couple by recommending procedures that may be painful, both emotionally and physically. Jirka, Schuett and Foxall’s study (1996) revealed that greater social support and reciprocity lessened feelings of loneliness for both husbands and wives who had been dealing with infertility problems. The authors also stated that wives who perceived increased conflict in their social relationships were more lonely than their husbands.

Aim of the Study

In this study, the main aim was to provide an empirical description and analysis of psychological outcomes of “infertility” for Turkish middle-class infertile women. Hence, a broad area of investigation was covered. It is hoped that a general perspective about the psychological make-up of infertile women will be gained.

One of the several aims of the study was to investigate whether depression and anxiety are attributable to “infertility” or a consequence of a medicalization effect and due to frequent visits to hospital. It is well stated in the literature that, infertility is a stressful, unexpected and life changing event. Beyond its medical aspect, individuals are traumatized by psychological, and social consequences of this problem. Based on our knowledge of the research background, we can assert that infertile women are more prone to show clinical symptoms in

the form of high levels of anxiety and depression, and low self-esteem more than fertile women. Thus, a control group consisting of gastrointestinal patients was formed and was compared with the infertile subjects in terms of depression and anxiety.

The present study was intended to provide a significant contribution to the literature on the psychology of infertility since it will be one of the few studies in Western literature and the first one in Turkey, which addresses the implications of the infertility diagnosis (the types of infertility causality), and sex role orientation on psychological reactions (measured as anxiety and depression in the present study) of infertile women. Depression and anxiety is conceptualized in a more thorough way by including variables that are thought to be affecting the infertility process on the part of infertile women. Because it cannot be assumed that all women who undergo infertility treatments experience distress at the same ways and levels, it is important to discover factors related to distress. Seeking to uncover the relationship between these factors can help to further our understanding of women facing the infertility experience. In this study, no comparison will be made between the two sexes, but rather the unit of analysis will be “woman”.

When we look at whether the infertility diagnosis makes a difference on the level of distress, there is more or less a consensus on this respect according to the literature: Females show more distress than men for every category of infertility diagnosis; that is to say that, it does not matter whether being the male or female who is contributing the infertility problem. Though, men tend to report some form of distress only if the infertility cause stems from male factors. There have been several studies that included the “couple” as participants and made a comparison between them, but the number of studies that have investigated the role of infertility causality among women have been very limited in the Western and Turkish literature. Hence, this study will be contributing to the literature in terms of making comparisons among women with respect to anxiety and depression.

Sex role orientation also plays an important role in a woman's cognitive appraisal of an event as stressful, so its relationship with the infertility distress will also be investigated. This study will be contributing to the literature since the findings of the studies that have been conducted to explore relation between gender role identity and distress (as depression and anxiety) is somewhat contradictory.

Moreover, the presence or lack of social support on the part of infertile women, seems to be a differentiating factor on how women copes with treatment stress according to the some line of research studies; while another group of research studies have argued that significant others can not be able to provide support as in the form of infertile individuals needed but were perceived as demanding and stigmatizing. One of the aims of this study is to investigate social support's role on the level of depression and anxiety of infertile women.

The following hypotheses will be tested in the present study:

1) Depression (BDI) and anxiety (STAI) scores of the infertility group will be higher than the control group's depression (BDI) and anxiety (STAI) scores.

2) Depression (BDI) scores will be positively related with state and trait anxiety (STAI) scores, and negatively related with self-esteem (CSSEI) scores for the infertility group.

3) a- The infertile subjects who have low level of social support (SS) will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects who have high level of social support.

b- The infertile subjects who have low level of self-esteem (CSSI) will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects who have high level of self-esteem.

c- The infertile subjects who have female infertility causality will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the other types of infertility causality.

d- The infertile subjects who have feminine sex role orientation will have higher scores of depression (BDI), state anxiety (STATE ANX) and trait anxiety (TRAIT ANX) in comparison to the subjects with other sex role orientation.

In addition to the hypotheses stated above, the present study also included the following research question:

Anxiety (STAI), and depression (BDI) scores of the infertility group will be explored in relation to the duration of treatment, age, educational level, and working status.

CHAPTER 2

METHOD

Subjects

The participants consisted of 140 individuals. There were two groups one of which was the experimental group and the other one which was the control group. The experimental group included 100 female infertile patients who were under In Viro Fertilization (IVF) treatment in the American Hospital as participants for the study. The exclusion criteria included women who were from rural regions of Turkey and women who had secondary infertility. The participants were selected everyday among the female IVF patients who came for their routine ultrasound controls, in the American Hospital. The patients' names were being listed daily in the IVF Clinic of the hospital and the inclusion to the study was made accordingly.

The control group consisted of 40 gastrointestinal female patients who has had several doctor-visits as a requirement of their treatments. The participants were selected on a convenience basis with a selection criteria of being married and having a child or children (being fertile). The control group has been included in the study for the purpose of excluding a possible "hospitalization" effect.

Instruments

A battery of self-report questionnaires were administered to the participants. The battery included a demographic information sheet, the Beck Depression Inventory (Beck et al., 1961) the State-Trait Anxiety Scale (Spielberg, Gorsuch and Lushene, 1970), the Coopersmith Self-esteem Inventory (1986), the Social Support Scale and the Turkish version of Bem Sex Role Inventory (BSRI).

Demographic Information:

Demographic information included sex, age, marital status, years of marriage, the place of living, employment, occupation, income level, treatment duration, the number of IVF/ICSI cycles, and the causality of the infertility.

The State-Trait Anxiety Inventory:

This inventory consists of two separate self report scales to measure A-State and A-Trait.

The A-state scale contains 20 items that ask people to indicate how they feel at a particular moment in time. The subject is required to respond to each item by rating the intensity of her feelings on the following 4 point scale:

(1) Not at all (2) Somewhat (3) Moderately so (4) Very much so.

The A-trait scale consists of 20 statements that ask people to describe how they generally feel. Subjects respond to each of them on the following 4-point scale:

(1) Almost never (2) Sometimes (3) Often (4) Almost always.

Both English and Turkish forms of STAI have high internal consistency and test-retest reliability (Spielberger et al., 1970; Le Compte and Öner, 1976). Le Compte and Öner's (1976) adaptation of STAI in Turkey shows high degrees of internal consistency (Alpha coefficients of 0.90 to 0.96 for the A-state and 0.81 to 0.90 for the A-trait). Test-retest reliability has a high coefficient has a high coefficient of 0.70 to 0.86.

The STAI has proven to be useful in both clinical work and research. In recent years, STAI was employed on different subject groups such as normals, psychiatric patients and students.

Beck Depression Inventory:

The Beck Depression Inventory (BDI) is a self-report depression inventory that is among the most frequently used in assessing depression (Williams, 1992). It was developed by Aaron Beck in 1961, first as an interview scale, but now is used as a self-rating scale.

The BDI consists of 21 clinically derived items; each item representing a symptom-attitude category or in other words, each describing a particular manifestation of depression. The subject chooses the statement best describes his/her present state. Each item has four self-evaluative statements that are ranked in varying degrees of severity. The statements are ranked from 0 to 3 to indicate the severity of the symptom and attitude.

Coopersmith Self-esteem Inventory:

This inventory was first developed by Stanley Coopersmith to provide information about children's self-esteem and it was later designed to cover all age groups.

In this study the adult form of the inventory (Coopersmith, 1986) was used. The form consisted of 25 statements which require the respondents to indicate their agreement (like me) or disagreement (not like me). These statements reflect the respondents' view of life, family relations and social relations. This inventory enables the measurement of personal judgements relating to leadership, self-esteem, inferiority and the like as well as attitudes towards the family.

The reliability and validity studies of this scale have been done for English (Coopersmith, 1986) and Turkish versions (Turan and Tufan, 1987).

Social Support Scale:

This scale measures family and friends' support. Social support from family and friends was measured by a revised version of the social support scale developed by Krespi (1993). The original 22 item scale includes emotional support, informational support, monetary support, appreciation and praise, spending time together. Internal reliability coefficient is reported to be .82. Test/retest reliability coefficient is found to vary between .68 and .91. The scale that was used in this study had been revised by Torun (1995) to be a 19 item scale. All the items are positive. A five-point Likert scale was used for responses ranging from (1) "never" to (5) "always". High scores show high levels of social support. The internal

reliability coefficient of the revised form of the scale is reported to be .92 by Torun (1995). The scale is used to measure social support in general.

Bem Sex Role Inventory:

The Bem Sex-Role Inventory (BSRI) was developed by Bem (1974) to measure masculinity and femininity as independent psychological dimensions. The BSRI contains 60 items. Twenty of the items are related to concepts that are usually associated with dimensions of masculinity, 20 items are related to femininity, and 20 items are used as fillers. Respondents are asked to indicate on a 7-point Likert-type scale how well each item describes them. The scale ranges from *never or almost never true* (1) to *always or almost always true* (7).

Procedure

All subjects were administered a survey form composed of demographic information sheet, BDI, STAI, BSRI, CSI, SS. The order in which the questionnaires were administered was randomized. The author contacted the patients one by one and face to face when they have come for their ultrasound controls during their IVF/ICSI treatments and they were given a general instruction including general information about the study. The patients who volunteered to participate in the study were selected. The respondents were also assured about the confidentiality of their answers. The questionnaires were administered to the infertility group in a quiet room in the American Hospital. The author was present during the administration of the questionnaires to answer the questions about the questionnaire. There was no time limitation.

CHAPTER 3

RESULTS

In the first section, a comparison of the infertility group and control group will be presented in terms of demographic variables, depression, anxiety, self-esteem, social support and sex role orientation scores. After that set of information, the descriptive analysis of the infertility group will be summarized in the second section. In the third section, correlations among the continuous variables of the study which are depression, anxiety, social support, self-esteem, sex role orientation will be reported. Lastly, depression and anxiety scores of the infertility group will be analyzed for each by taking social support, self-esteem, the types of infertility causality and sex role orientation's effects into account.

The comparison of the Infertility Group and the Control Group in terms of Demographic Characteristics

The present study included two groups of subjects, namely: a-The infertility group and b- The control group. The infertility group consisted of infertile patients, and the control group included patients who had gastrointestinal problems. The reason for the inclusion of a control group was to rule out a possible hospitalization effect on the part of infertile participants. In other words, the aim was to understand whether anxiety and depression symptoms displayed by infertile subjects were attributable to infertility process or were originated from just being in the hospital setting. For this reason, the infertility group and the control group were compared in terms of demographic variables and also anxiety and depression scores.

The questionnaires were distributed to a total of 139 subjects. Of the 139 subjects that were included in the analyses, 100 were infertile patients (Infertility group) and 39 were patients with gastrointestinal problems (Control group).

The means and standard deviations of demographic variables (age, education level, working or not, years of marriage) for the two groups are presented in Table 1.

The results of the t-test revealed that there were no group differences between the groups in terms of age [$t(134) = 1.41, p > .05$] and years of marriage [$t(133) = 0.98, p > .05$]. The mean age for infertility group was 32 (SD = 5,019), while it was 31 (SD = 4,71) for control group. The mean value of the duration of marriage was 6,57 (SD = 4,461) and 5,70 (SD = 4,999) for Infertility group and control group respectively (See Table 1).

Table 1. Means and Standard deviations of Age and Years of Marriage for Infertility group and Control group

	Infertility group	Control group
Age		
N	99	37
M	32,42	31,08
SD	5,02	4,71
Years of marriage		
N	98	37
M	6,57	5,70
SD	4,46	5,00

Chi square analyses were conducted in order to test whether there were significant differences between subjects of the two groups in terms of education level, employment status, and income, which were categorical variables. The results showed that both groups were comparable on these aspects also, since there were no significant differences found in terms of education levels [$X^2(4) = 8.14, p > .05$], employment [$X^2(1) = 1.12, p > .05$], and income levels [$X^2(2) = 1.88, p > .05$]. The frequency and percentage distributions are presented in Table 2 below.

Table 2. The Frequency and Percentage distributions of Education level, Employment Status and Income for Infertility group and Control group

		Infertility group (N=99)		Control group (N=37)	
		N	%	N	%
Education level	1-İlkokul	9	9.1%	0	0%
	2-Ortaokul	6	6.1%	1	2.7%
	3-Lise	39	39.4%	12	32.4%
	4-Üniversite	29	29.3%	19	51.4%
	5-Yükseklisans	16	16.2%	5	13.5%
Employment	Employed	57	57.6%	25	67.6%
	Not employed	42	42.4%	12	32.4%
Income	1- 0-1000 YTL	14	14.1%	2	5.7%
	2- 2000-4000 YTL	59	59.6%	24	68.6%
	3-5000YTL and above	26	26.3%	9	25.7%

The comparison of the Infertility Group and Control Group in terms of Depression, State-Trait Anxiety, Social Support, Self-esteem and Sex role Orientation

Depression (BDI), State-Trait Anxiety (STAI), Social Support (SS), Self-esteem (CSSEI) and Bem Sex Role Inventory (BSRI) scores for both infertility patients (Infertility group) and gastrointestinal patients (Control group) are presented in Table 3 below and Figure 1 (Appendix 1). When the two groups were compared in terms of depression (BDI) by using t-test, the results showed that there was a significant difference between them, $t(123) = 3.98$, $p < .05$, where the Infertility group had significantly higher scores on depression than the Control group. Moreover, the groups were significantly different in terms of state anxiety (STATE-ANX) $t(68) = 2.19$, $p < .05$. The Infertility group scored significantly higher on the state anxiety sub-scale of STAI. However, the results of the t-test did not reveal a significant difference between the two groups in terms of trait anxiety (TRAIT-ANX), $t(77) = 1.23$, $p > .05$. In terms of social support (SS), $t(130) = -.24$, $p > .05$, masculinity (BSRI-MAS)

[$t(120) = .05, p > .05$] and femininity (BSRI-FEM) [$t(125) = 1.43, p > .05$], there was also no statistical difference between the two groups.

Table 3. Means and Standard deviations of BDI, STATE-ANX, TRAIT-ANX, SS, CSSEI, BSRI-MAS, BSRI-FEM according to Infertility group and Control group.

	Infertility group	Control group
SS		
N	95	37
M	77,56	78,16
SD	12,92	13,05
BSRI-MAS		
N	88	34
M	91,78	91,65
SD	15,08	7,78
BSRI-FEM		
N	94	33
M	113,65	110,45
SD	11,24	10,20
CSSEI		
N	99	40
M	70,22	34,50
SD	21,16	13,52
BDI		
N	94	37
M	12,36	7,51
SD	9,33	4,55
STATE-ANXIETY		
N	47	30
M	40,79	36,47
SD	8,90	7,67
TRAIT-ANXIETY		
N	47	32
M	43,72	41,44
SD	8,67	7,20

The Descriptive Analysis of the Infertility Group

The analyses from this point onwards will be about the main sample group of the study which is consisted of infertility patients (Infertility group):

The Relationship Between Education Level, BDI, STATE-ANX, and TRAIT-ANX

The results of the ANOVA revealed that there was a significant difference among the levels of education with respect to trait anxiety (TRAIT-ANX), [$F(3,43) = 2,93$, $p < .05$]. Post hoc analysis of LSD was performed and “lise” education was found to be significantly different from “üniversite” education, ($p < .05$). When the categories of education level were investigated in relation to state anxiety (STATE-ANX) scores, the groups did not differ from each other, though the difference was close to significance, [$F(3,43) = 192,76$, $p = .057$]. In terms of depression (BDI) there was not a significant difference among the levels of education [$F(3,90) = 1,71$, $p > .05$]. The means and standard deviations of BDI, STATE-ANX and TRAIT-ANX for levels of education are presented below in Table 4.

Table 4. Means and Standard deviations of BDI, STATE-ANX, and TRAIT-ANX in terms of Education level.

	N	M	SD
BDI			
İlköğretim	14	10,93	9,24
Lise	37	15,03	10,07
Üniversite	27	10,48	9,49
Yükseklisans&üst	16	10,63	6,10
Total score	94	12,36	9,33
STATE-ANX			
İlköğretim	5	36,20	11,76
Lise	17	43,12	7,83
Üniversite	18	37,72	8,22
Yükseklisans&üst	7	46,29	8,04
Total score	47	40,79	8,91
TRAIT-ANX			
İlköğretim	17	44	8,76
Lise	16	47,19	9,68
Üniversite	17	6,05	6,05
Yükseklisans&üst	7	8,36	8,36
Total score	47	8,67	8,67

The Relationship Between Employment status, BDI, STATE-ANX, and TRAIT-ANX

The ANOVA was conducted to test the difference between the working status of the infertile subjects. The results showed that there was a significant difference between the groups in terms of BDI scores [$F(1,92)=8.97$, $p<.05$] and TRAIT-ANX scores [$F(1,45)=6.93$, $p<.05$]. Mean cells indicate that the subjects who work have lower depression scores, but higher trait anxiety scores in comparison to non-working subjects. The means and standard deviations of BDI, STATE-ANX and TRAIT-ANX scores with respect to the working status of the subjects are presented below in Table 5.

Table 5. Means and Standard deviations of BDI, STATE-ANX, and TRAIT-ANX in terms of Employment Status.

		N	M	SD
BDI	Working	40	9.99	11.08
	Not working	54	15.58	6.98
	Total	94	12.36	9.33
STATE-ANX	Working	20	42.5	8.10
	Not Working	27	39.52	9.40
	Total	47	40.79	8.91
TRAIT-ANX	Working	19	47.53	9.38
	Not Working	28	41.14	7.24
	Total	47	43.72	8.67

Correlations among Depression, State Anxiety, Trait Anxiety, Treatment Duration and the number of IVF Trials

Pearson correlation coefficients were computed to investigate the relationship between the dependent variables of the study (state/trait anxiety and depression) and the treatment duration and the number of IVF treatments. The results revealed a significant positive correlation between depression (BDI) scores and treatment duration ($r=.217$, $p<.05$). Depression was also significantly positively correlated with the number of IVF treatments

($r=.256$, $p<.05$). Another significant positive correlation was between trait anxiety (TRAIT-ANX) and the number of IVF treatments ($r=.360$, $p<.05$). The results are presented in Table 6.

Table 6. Correlations among BDI, STATE-ANX, TRAIT-ANX, Treatment Duration and Number of IVF Treatments

		STATE-ANX	TRAIT-ANX	BDI	Treatment Duration	No. of IVF Treatments
STATE-ANX	Pearson corr.	1	.607**	.495**	.000	.240
	Sig. (2-tailed)		.000	.000	.998	.104
	N	47			46	47
TRAIT-ANX	Pearson corr.	.607**	1	.479**	.215	.360*
	Sig. (2-tailed)	.000		.001	.156	.013
	N	42	47	47	45	47
BDI	Pearson corr.	.495	.479**	1	.217*	.256*
	Sig. (2-tailed)	.000	.001		.037	.013
	N	47	47	94	92	94
Treatment Duration	Pearson corr.	.000	.215	.217*	1	.747**
	Sig. (2-tailed)	.998	.156	.037		.000
	N	46	45	92	97	97
No. IVF Treatments	Pearson corr.	.240	.360*	.256*	.747**	1
	Sig. (2-tailed)	.104	.013	.013	.000	
	N	47	47	94	97	99

The Relationship between Depression, State-Trait anxiety, Social Support, Self-Esteem, and Sex Role Orientation

The results of the Pearson correlation coefficients which were computed to detect the relation among the dependent and independent variables of the study revealed significant positive and negative correlations (See Table 7).

As can be observed in Table 7, depression (BDI) scores were significantly positively correlated with both STATEANX ($r=.492, p<.01$) and TRAITANX ($r=.479, p<.01$) scores; and significantly negatively correlated with SOCSUP scores ($r=-.417, p<.01$), BSRIMAS ($r=-.247, p<.05$) and CSSCOREs ($r=-.441, p<.01$).

Social support (SOCSUP) was significantly positively correlated with BSRIMAS ($r=.276, p<.01$), CSSCOREs ($r=.405, p<.01$); and significantly negatively correlated with BDI scores, STATEANX ($r=-.492, p<.01$), and TRAITANX ($r=-.593, p<.01$).

STATEANX and TRAITANX scores were significantly negatively related with CSSCOREs, ($r=-.426, p<.01$) and ($r=-.692, p<.01$) respectively. There was also a significant negative correlation between TRAITANX and BSRIMAS ($r=-.525, p<.01$).

Moreover, in terms of the relation between CSSCOREs and BSRIMAS, the results revealed a positive significant relation ($r=.451, p<.05$).

Table 7. Correlations between Social support (SOCSUP), Masculinity (BSRIMAS) Femininity (BSRIFEM), Depression (BDI), State Anxiety (STATEANX), Trait Anxiety (TRAITANX), and Self-esteem (CSSORE)

Correlations								
		SOCSUP	BSRIMAS	BSRIFEM	BDISCORE	STATEANX	TRAITANX	CSSCORE2
SOCSUP	Pearson Correlatio	1	,276**	,095	-,417**	-,492**	-,593**	,405**
	Sig. (2-tailed)		,010	,363	,000	,000	,000	,000
	N	95	87	93	94	47	47	95
BSRIMAS	Pearson Correlatio	,276**	1	-,316**	-,247*	-,258	-,525**	,451**
	Sig. (2-tailed)	,010		,003	,022	,108	,000	,000
	N	87	88	87	86	40	41	88
BSRIFEM	Pearson Correlatio	,095	-,316**	1	,047	-,002	,030	-,023
	Sig. (2-tailed)	,363	,003		,658	,992	,842	,822
	N	93	87	94	92	46	46	94
BDISCORE	Pearson Correlatio	-,417**	-,247*	,047	1	,495**	,479**	-,441**
	Sig. (2-tailed)	,000	,022	,658		,000	,001	,000
	N	94	86	92	94	47	47	94
STATEANX	Pearson Correlatio	-,492**	-,258	-,002	,495**	1	,607**	-,426**
	Sig. (2-tailed)	,000	,108	,992	,000		,000	,003
	N	47	40	46	47	47	42	47
TRAITANX	Pearson Correlatio	-,593**	-,525**	,030	,479**	,607**	1	-,692**
	Sig. (2-tailed)	,000	,000	,842	,001	,000		,000
	N	47	41	46	47	42	47	47
CSSCORE2	Pearson Correlatio	,405**	,451**	-,023	-,441**	-,426**	-,692**	1
	Sig. (2-tailed)	,000	,000	,822	,000	,003	,000	
	N	95	88	94	94	47	47	99

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

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

The Relationship between Depression, State-Trait Anxiety, Social Support, Self-Esteem , the Types of Infertility Causality, and Sex role orientation

In order to investigate the effects of social support (SS), self-esteem (CSSEI), the types of infertility causality (female-factor, male factor, male+female factor and unexplained factor), and sex-role orientation (BSRI), depression and state/trait anxiety were submitted to separate ANOVA's. Social support (SS), and self-esteem CSSEI scores were categorized into three sub-groups as "low", "medium" and "high". Below, the results will be summarized for depression, state anxiety and trait anxiety separately (See also Figure 2, Figure 3, and Figure 4 in Appendix 1).

The Effects of Social Support, Self-Esteem, Infertility Causality and Sex Role Orientation on Depression

The results of the ANOVA test showed that there was an overall significant relationship among infertility causality, social support (SS), self-esteem (CSSEI), depression (BDI) and sex role orientation (BSRI) [$F(9) = 3.89, p < .01$].

The results revealed a significant main effect for infertility causality, [$F(3) = 3.05, p < .05$]. Scheffe results indicated that there were no significant differences among the types of infertility causality with respect to BDI scores ($p > .05$). However, when LSD was performed, significant differences were found between the types of “female causality” and “male causality” ($p < .05$) and “female causality” and “male+female causality” ($p < .05$). The subjects who had female-causality for infertility scored higher on BDI than the other types of causality groups.

The results of ANOVA showed also a significant main effect for social support (SS), [$F(2) = 4.77, p > .05$]. Post hoc comparisons with Scheffe revealed that the subjects on the “low” category were significantly different from “medium” category ($p < .05$) and “high” category of social support (SS) ($p < .05$) in terms of depression (BDI) scores; but there was no significant difference between the “medium” and “high” categories of social support (SS) ($p > .5$) in terms of BDI scores. The “low” category of SS scored higher on BDI, when compared to medium and high category of SS. Means and standard deviations of the types of infertility causality, SS categories and BDI scores are shown on Table

Moreover, there was a main effect for self-esteem (CSSEI), [$F(2) = 4.25, p < .05$]. Results of Scheffe performed showed that, in terms of the three categories of self-esteem (CSSEI), there was a significant difference between the “low” and “high” categories. Subjects on the “low” category of self-esteem scored higher on BDI when compared to the subjects on “medium” category ($p < .05$) and “high” category ($p < .05$) of CSSEI.

However, the main effect for “sex role orientation” did not attain a significance [$F(2) = .524, p > .05$]. The cell means and standard deviations for depression (BDI) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 8.

Table 8. Means and Standard Deviations of Depression (BDI) Scores according to SS, CSSEI, Types of Infertility Causality and BSRI.

	M	SD	N
SS			
Low	19.70	11.91	17
Medium	11.22	7.65	51
High	9.59	9.91	17
CSSEI			
Low	17.81	11.97	27
Medium	10.68	6.58	34
High	9.42	8.41	24
Infertility causality			
Female factor	15.87	11.45	31
Male factor	10.30	10.71	20
Male+female factor	10.08	6.26	13
Unexplained	11.48	6.13	21
BSRI			
Feminine	15	10.33	21
Masculine	11.55	8.44	22
Androgynous	11.93	9.98	42
Total X	12.59	9.69	85

The Effects of Social Support, Self-Esteem, Infertility Causality and Sex Role Orientation on
State Anxiety

ANOVA was conducted to investigate the relationship among social support (SS), self-esteem (CSSEI), sex role orientation (BSRI) and the types of infertility causality with respect to state anxiety (STATE-ANX). The overall model was not found to be significant [$F(9) = 1.81, p > .05$], while the main effect of social support (SS) attained a significance level for state anxiety (STATE-ANX) [$F(2) = 4.10, p < .05$].

Post hoc comparisons with Scheffe showed that the subjects who had “low” levels social support (SS) scored significantly higher on state anxiety (STATE-ANX) in comparison to the subjects who had “high” levels of social support ($p < .05$). The subjects who had “low” social support did not differ significantly from the subjects who had “medium” level of social support ($p > .05$). Moreover, there was not a significant difference between the subjects from the categories of “medium” and “high” ($p > .05$). The means and standard deviations for state anxiety (STATE-ANX) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 9.

Table 9. Means and Standard Deviations of State-anxiety (STATE-ANX) Scores According to SS, CSSEI, Types of Infertility Causality and BSRI.

	M	SD	N
SS			
Low	46.23	5.54	13
Medium	40.67	9.15	21
High	31.83	7.80	6
CSSEI			
Low	46.17	5.90	12
Medium	40.00	8.55	16
High	37.67	10.71	12
Infertility causality			
Female factor	41,47	10.27	15
Male factor	40.50	6.65	8
Male+female factor	40.80	8.53	5
Unexplained	41.33	10.12	12
BSRI			
Feminine	40.00	10.34	9
Masculine	39.38	13.40	8
Androgynous	40.04	8.06	23
Total $\bar{x}$	44.29	8.70	41

The Effects of Social Support, Self-Esteem, the Types of Infertility Causality and Sex Role

Orientation on Trait Anxiety

The results of the ANOVA test showed that there was an overall significant relationship among infertility causality, social support (SS), self-esteem (CSSEI), and sex role orientation (BSRI) in terms of trait anxiety (TRAIT-ANX) [$F(9) = 5.93, p < .05$].

The results revealed a significant main effect for social support (SS), [$F(2) = 4.92, p < .05$]. Post hoc comparisons with Scheffé revealed that the subjects who had “low” levels social support (SS) scored significantly higher on trait anxiety (TRAIT-ANX) in comparison to the subjects who had “high” levels of social support ($p < .05$). Also, there was a significant difference between the subjects from the “low” level of social support category and “medium” level of social support category ($p < .05$) with respect to TRAIT-ANX scores. However, the subjects who had “medium” level of social support did not differ from the subjects who had “high” level of social support ($p > .05$).

The results of ANOVA also indicated that there was a significant main effect for self-esteem (CSSEI), [$F(2) = 4.32, p < .05$]. Scheffé results showed that in terms of the three categories of self-esteem (CSSEI), there was a significant difference between the “low” and “high” categories of CSSEI ($p < .05$). The subjects within the category of “low” self-esteem scored higher than the subjects within the category of “high” self-esteem, in terms of trait anxiety (TRAIT-ANX). There was also a significant difference between the “medium” self-esteem group and “high” self-esteem group ($p < .05$). Moreover, the difference between “low” and “medium” self-esteem groups attained a close significance level in terms of trait anxiety ($p = .052$).

The results of ANOVA also showed a significant main effect for sex role orientation, [$F(2) = 3.85, p < .05$]. According to the performed post hoc analysis (Scheffé), there was a significant difference between the “feminine” group and “masculine” group ($p < .05$) and

between the “feminine” and “androgynous” group ($p < .05$). The subjects who had feminine sex role orientation had higher scores of trait anxiety (TRAIT-ANX) when compared to the masculine and androgynous types of sex role orientation. The main effect for “the types of infertility causality” did not attain a significance, [$F(23) = 1.26, p > .05$]. The cell means and standard deviations for trait anxiety (TRAIT-ANX) scores with respect to SS, CSSEI, BSRI and Types of Infertility Causality are shown in Table 10.

Table 10. Means and Standard Deviations of Trait Anxiety Scores according to SS, CSSEI, Types of Infertility Causality and BSRI

	M	SD	N
SS			
Low	51.92	8.33	12
Medium	41.95	6.06	20
High	39.33	8.17	9
CSSEI			
Low	50.46	9.41	13
Medium	44.82	5.88	17
High	36.19	4.29	11
Infertility causality			
Female factor	43.46	9.10	14
Male factor	43.45	8.56	11
Male+female factor	40.33	4.08	6
Unexplained	43.90	9.31	10
BSRI			
Feminine	49.25	8.88	12
Masculine	43.00	8.21	7
Androgynous	43.27	7.74	22
Total $\bar{x}$	44.29	8.70	41

CHAPTER 4

DISCUSSION

The first aim of this study was to make a comparison between the infertility group and the control group in terms of depression and anxiety. After checking whether the two groups were similar in terms of demographic variables, they were then compared in terms of anxiety and depression. The aim was to understand if the depression and anxiety expressed by infertile women could be attributable to infertility problems. The second aim was to provide an empirical description of the infertility group. The relationships among treatment duration, number of IVF treatments, depression, anxiety, and self-esteem were analyzed in order to understand the infertility period better. Lastly, this study aimed to investigate the role of social support, self-esteem, infertility causality, and sex role orientation on depression and anxiety levels of infertile women who were under IVF treatment.

Comparison of Infertility Group with Control Group

The control group was constituted with the criterion of including patients from other clinics who make frequent visits to hospital due to medical conditions other than infertility. Gastrointestinal patients were chosen as the subjects of the control group since they also visit hospital several times during their treatments as the infertility patients. This way, two groups were similar in that they were both medicalized, and have made several visits to hospital, so any difference in terms of their depression and anxiety levels can be due to infertility.

Infertility and control groups were found to be comparable in terms of age, education level, employment status and years of marriage. Since there was similarity between infertile women and the women with gastrointestinal problems in terms of demographic variables stated above, higher levels of depression and anxiety on the part of infertile women can be due to infertility.

There was a significant difference between the gastrointestinal patients and infertility patients with respect to depression. The infertility patients had more depressive symptomatology than gastrointestinal patients and showed moderate levels of depression. The results confirmed the hypothesis that infertility group will differ from the control group in terms of depression. This difference was also an expected result in the line of other studies which emphasized that depressive symptoms are more commonly observed in infertile women when compared to fertile women (Hynes et al., 1992; Domar, Seibel, 1990; Domar et al., 1992; Greil, 1997; Wischmann, Stammer, Scherg, Gerhard, Verres, 2001; Oddens et al., 1999). Being infertile has an impact on almost every aspect of their lives like partner relationships, sex life, employment, relationships with fertile family members and friends, financial conditions, and even religious beliefs which can be considered as stress factors that threaten the well-being of women with infertility problems.

On the basis of recent studies, it appears that the major difficulty facing patients during infertility is anxiety (Cook et al., 1989). Infertile participants of the present study had higher state-anxiety in comparison to the control group. This result was also confirmed in several other studies which compared infertile patients with other normative group of subjects in terms of anxiety (Ozkan and Baysal, 2006; Beaurepaiere et. al, 1993; Downey and McKinney, 1992). However, infertility and control group patients were not found to be different with respect to trait-anxiety. This finding shared a similarity with Beaurepaiere et. al's (1993) study's results which also indicated that infertile patients had higher levels of state anxiety when compared to a normative group, while trait anxiety levels of the groups were comparable.

The high levels of state-anxiety of infertility patients can be understandable when one considers the distress infertility creates on women's lives. Rather than being only a medical treatment, IVF treatments carry psychological burdens (Domar, 2002). In fact, most IVF

patients report that treatment is more of a psychological than a physical stressor (Eugster and Vingerhoets, 1999). Golombok (1992) mentions the patients' prevalent fear that treatment will fail. Even though there is a hope of successful pregnancy, most women feel grief for the biological child they have not yet had (Domar, 2002), so unresolved grief can be a major source of anxiety. Moreover, uncertainty about the outcome of treatment and future is one of the significant factors causing anxiety for infertile women. They invest financially, physically and psychologically without knowing whether they will conceive or not.

Descriptive Analysis of The Infertility Group

Education Level, Depression and State-Anxiety

Education level was another factor that was found to be related to trait-anxiety of the infertile subjects. This result supports the findings of Ramezanzadeh et al., 2004; Domar et al., 1992) There was a significant decrease of trait anxiety on the part of the subjects when they had a university/college degree. However, education level was not found to be a factor that differentiated the depression and state-anxiety levels of the subjects. This result indicates that, even for women whose are high and who have contributed to their lives in a productive way, having an infertility problem can be tough and hard to handle when they undergo IVF treatments.

Employment status, Depression and State-Anxiety

Being employed seems to be a protective factor appearing in this study, that helps women in terms of showing depressive symptoms; also supporting Facchinetti et al.'s (1997) findings. The results of the study revealed that working women are less depressed in comparison to women who do not work. This may be due to being able to spend their time during the day without focusing on infertility-related feelings and thoughts. Having a job also

seems to be leading to self-confidence and a contribution to their views about themselves as being productive and competent. Having a job may be a gate leading women to joyful aspects of their life other than maternity. It should also be noted that some of the non-working infertile women may be once working but quit because of the IVF treatments. Some of the patients see having a child as the first priority in their lives, so if their occupations are stress-provoking or not allowing them to spare time for the requirements of IVF treatments, they may stop working. But, after a while they may start to lose their self-esteem and get more prone to depressive and anxiety symptoms if they can't find ways to fulfill their productive sides, but focusing only on infertility issues.

It is interesting that although education level does not make a difference in terms of depression, working status of women make a difference. Education level and working status may be better conceptualized differently. That is, a woman's not being employed may be interpreted as a more distress-provoking condition when compared to the education level per se. Working status and education level of a woman may be representing two different things. Education level may not mean a protection against depression and state anxiety if the woman is not working. If the woman is not working and also has a reproduction problem in the form of infertility, she may feel more depressed because of losing productivity in two different ways: She can not produce both in the outer realm and also inside her body. Thus, she becomes more disadvantageous in comparison to a working-woman with respect to stress. Another argument with respect to the different results for education level and working status may also be proposed in terms of cultural factors. In Turkey, after a woman gets married, especially when she starts to consider having children, it is more observable to see her giving up working even if she has a high education level. It has been stated by Arin (2002), when women are married, their husbands do not want their wife work out of the house. Moreover, the husbands might say that they are in love with their wives, and they do not want them to

get more tired. After some time, these women may feel unproductive and less self-confident. Thus, it should be considered that even for the women with high education level, the differentiating factor for the occurrence of depression and anxiety will be their working status.

Correlational Analyses among Treatment duration, Number of IVF cycles, Depression, State/Trait Anxiety and Self-Esteem

Treatment duration, Number of IVF treatments, Depression, and Anxiety

As the results indicated, there is a significant positive relationship between the treatment duration and the number of IVF treatments that the infertile patients have had. This is an expected result since as the time passes, infertility treatments also follow one another. In accordance with the previous research (Beaurepaire et al., 1993; Berg and Wilson, 1991; Lok et al., 2002; Guz et al., 2003) and Domar et al., 1992), results of the present study indicate that the depression levels increase as the duration of treatment increases, for the infertile patients. This finding is comprehensible because throughout time, if they still couldn't conceive, the infertile women feel more despair and hopelessness. The infertility process was found to be similar to other chronic medical problems like chronic pain, cancer and heart diseases in terms of the distress experienced (Domar et al., 1993). It seems clear that prolonged treatment duration brings along hopelessness and women feel a great deal of isolation, then depressive symptoms may likely to occur. Moreover, because of the uncertainty of whether a pregnancy will occur or not, infertile women begin to rely on the pessimistic views that they will never be able to become mothers.

As the results of the study indicate, there is a strong relation (.747) between treatment duration and number of IVF treatments, so they share a similarity in terms of their relation with depression and anxiety. The number of IVF treatments and level of depression and trait-anxiety are significantly related. This finding was supported by a previous research conducted

by Newton et al. (1999) which indicated a significant increase in the prevalence of mild to moderate levels of depression after a failed IVF treatment. Hynes et al. (1992) also reported a similar result in that, after a failed IVF treatment, the subjects had more depressive mood in comparison to the beginning of treatment. Furthermore, Leiblum et al.'s (1987) findings revealed that women who had one or more failed IVF trials had increased anxiety and depression levels. This finding indicates that repeated failures of conceiving worsens the infertility crisis, and the symptoms of depression and anxiety become especially prominent which is also in accordance with other studies (Eugster, 1999; Baram, 1988; Newton, 1990). Whiteford and Gonzalez (1995) use the metaphor of an emotional roller coaster to describe the process of coping with infertility. Moreover, because infertility treatment is tied to the menstrual cycle, women begin each month feeling hopeful that this month the treatment will be successful. Often this hopefulness turns to hopelessness if pregnancy does not occur after having invested a large amount of time, energy, hope, and money (Olshansky, 1988). Recurrent disappointments and uncertainty regarding conceiving is hard to tolerate, as the results of this study indicate.

Relationship among Depression, State-trait anxiety, and Self-esteem

As a result of investigating the relationship among depression, state-trait anxiety, and self-esteem, significant results were obtained:

There was a positive relation between depression and state-trait anxiety; and they were negatively related with self-esteem, which confirmed the hypothesis of the present study and was in the same line with previous research studies (Abbey et al. 1991; Bolter, 1997; Connolly, & Cook, 1987; Greil, 1997; Grover, Gannon, Sherr, and Abel, 1996; Hjelmsteadt, Andersson, Skoog-Svanberg, Bergh, Boivin and Collins (1999); Morin-Davy, 1998; Myers, 1990; Newton, Sherrard, and Glavac, 1999; Sadler & Syrop, 1998). The more depressed the

patients were, the more they experienced both acute and chronic anxiety. The presence of one of the distress variables stands as an indicator of the other distress variables. Previously conducted studies suggest that anxiety and depression are characteristics of the infertility period for most women. Fertility testing involves more complicated, uncomfortable medical procedures for women. With IVF and superovulation techniques, women report greater anxiety about the effects of hormonal treatment on their bodies and often experience mood swings. Surgical procedures for egg retrieval create anxiety for both partners about the consequences of general anesthesia, the number of eggs that will be retrieved and the quality of the eggs, both of which affect the possibility that the eggs will be fertilized. Women seek infertility treatment more often and at a greater frequency than their partners, and are more committed to treatment (McGrade and Tolor, 1981). The majority of medical tests and infertility treatments involve the woman's reproductive system, and as a consequence of such treatment, her life may be more disrupted than her partner's (Abbey et al., 1994).

The Effects of Social Support, Self-esteem, Infertility Causality and Sex Role Orientation on Depression

The effects of social support, self-esteem, infertility causality and sex role orientation on depression were investigated. An overall significant relationship among these variables was obtained. The research design conceptualized a multi-factor relationship between social support, self-esteem, sex role orientation and types of infertility causality and depression, which is a comprehensive way of conceptualizing depression in the infertility literature. The hypothesis of the study were confirmed by this model of the present study, in that social support, self-esteem, the types of infertility causality had significant effects on depression.. The patients who had female causality of infertility, low levels of social support, and low levels of self-esteem had the highest level of depressive symptoms. However, sex role

orientation was not found as a significant factor on this relationship which did not support the hypothesis that feminine sex role orientation will be leading to depression more when compared to the other types of sex role orientation.

Below, the variables of this relationship will be described in terms of their relation to depression under different sections:

The Effect of Infertility Causality on Depression

The role of infertility causality on creating depression has been investigated by various researchers (Miall, 1986; Demyttenaere et al., 1988; Bernt et al, 1992; Lee et al, 2001; Wright et al., 1991; Daniluk, 1992; Khademi, Alleyassin, Aghahosseini, Ramezanzadeh, and Abhari, 2005). The results of the present study is similar to Miall's (1986) findings which also indicated that women with "female" causality of infertility had more difficulty coping with infertility distress in comparison to women who had "male" causality of infertility. The results of this study indicated a relation between infertility causality and depression - within a model, including other variables - in that, women who had female causality for infertility were the most depressed among the types of infertility causalities. The link between female causality and depression was also emphasized in Demyttenaere et al.'s (1998) research study which showed that, for women with a female indication for IVF increasing depressive symptoms were related with lower pregnancy rates. Khademi et al. 's (2005) study also relates female type of infertility with higher depression level. It has been stated that women experience infertility as a loss on many levels (Taylor, 1995) which may lead to depression in some cases, and considering the findings of the present study, having a personal causing factor in terms of infertility diagnosis seems to be an extra risk factor for depressive symptomatology. Socially, women report feeling a sense of loss when infertility seems as a barrier to be pregnant. They report missing the social experience of being pregnant and sharing that

experience with others (Forrest & Gilbert, 1992). Another major loss brought on by infertility is a sense of control. Because infertility can be seen by women as an inability to carry out a major life goal, they may not feel confident in their ability to make short and long term plans (Mahlstedt, 1985). These feelings of loss in different ways remain as contributing factors to depression and being the person who has the causing factor for infertility problem appears to worsen their well-being. On the basis of this finding of the study, the presence of a female cause of infertility appears to be a factor to be considered by clinicians when offering psychological support to the patient.

The Effect of Social Support on Depression

Results of this study confirm the findings of Güz et al. (2003) and Amir et al.'s (1999) studies, which indicated social support as a protective factor in terms of appearance of depressive symptoms. There has been an emphasis on the significance of social support for individuals with infertility problems in the literature. In coping with infertility, as with other major life stressors, seeking social support is an important coping mechanism used by individuals undergoing infertility treatment. In addition, because of the stressful nature of IVF treatments, presence of a social support network is crucial factor for the well-being of the infertile women.

The Effect of Self-Esteem on Depression

The results also showed a negative relation between depression and self-esteem, which was also supporting evidence for previously conducted studies (Wright et al., 1991; Xu, Ke and He, 1994; Lee and Sun, 2000). Physically, infertility may cause a woman to feel her body as ineffective or inadequate resulting in feelings of inadequacy and shame as Mahlstedt (1985) stated. Motherhood, cross culturally, is seen as a central and defining role for women.

Infertility has been considered as a failure to reproduce, which socially stigmatizes women desiring to have children. Thus, infertility can be seen as a threat to the nature of being a woman and to the ability of a woman to fulfill a social role.

The Effect of Sex Role Orientation on Depression

The result of the study is in accordance with Cook's (1993) study, in that there is no difference in depression, between feminine gender-typed women and masculine gender-typed women. This may be interpreted as, even though a woman has masculine gender type this does not have any influence on the level of distress she feels. Due to limited amount of research on this relationship in the literature, the result associated with sex role orientation is better to be perceived as a contribution to the literature.

The Effects of Social Support, Self-esteem and Sex Role Orientation and Infertility Causality on State Anxiety

In terms of state-anxiety, a similar model was hypothesized as in depression, in which social support, self-esteem and sex role orientation and infertility causality were expected to have significant effects on state anxiety. The other hypotheses of the model were not supported by the results of the study. That is, self-esteem, infertility causality, and sex-role orientation did not have significant effects on state-anxiety. This finding indicated that factors other than social-support (self-esteem, and sex role orientation) did not have a role on the level of state-anxiety. Women within all categories of self-esteem, and sex role orientation were not different from each other in terms of showing state-anxiety. Also, the type of infertility causality did not have a role on the level of state-anxiety.

The Effect of Infertility Causality on State-Anxiety

The hypothesis that infertility causality will have a significant effect on level of state anxiety was not supported by the results of the study. Result of this study indicates there is no difference among women with any type of infertility causality regarding state-anxiety. It can be stated that infertility affects all women on this respect. Cook et al. (1989) stated that the major difficulty the patients face is anxiety, and this result confirms that statement. Without considering the source of the problem, all women feel anxious probably due to psychological and social reasons.

The Effect of Social Support on State-Anxiety

The results supported only the hypothesis that social support has significant effect on level of state-anxiety of the infertility patients. The women with high level of social support had lower state-anxiety, while low social support brought more state-anxiety for the patients. This finding confirms the findings of Matsubaytashi et al. (2004) who found that anxiety was associated with lack of husbands' and other relatives' support and feelings of stress. The finding of the present study is important in the sense that it indicates social support as a protective factor in coping with state-anxiety.

The Effect of Self-Esteem on State-Anxiety

The results failed to confirm the results of Van Balen and Trimbos-Kemper (1994), Koropatnick, Daniluk, Pattinson (1993) and Guz et al. (2003) in which high levels of anxiety were related to low self-esteem. The result of the study did not also support the hypothesis which proposed that self-esteem will have a significant effect on state-anxiety.

The Effect of Sex Role Orientation on State-Anxiety

The hypothesis that sex role orientation will have a significant effect on level of state

anxiety was not supported by the results of the study. There is no difference between masculine and feminine gender-typed infertile women regarding state anxiety. Sex role orientation does not seem to be affecting the level of anxiety when the issue is trying to conceive. Even the women who have more masculine tendency feel the same way as the feminine ones. This may show us how strong the wish for conceiving is. Since the majority of studies in literature on sex role orientation and infertility are based on investigating the couple and reporting the differences between them, this finding of the study can be considered as a contribution to the literature.

The Effects of Social Support, Self-esteem, Infertility Causality and Sex Role Orientation on Trait Anxiety

Anxiety has been shown to be significantly higher in infertile couples when compared to the general population, with 8%-28% of infertile couples reporting clinically significant anxiety (Anderson, 2003; Chen 2004; Parikh 2000). The process of assisted reproduction itself is also associated with increased levels of anxiety (Leiblum, 1987). The results of the present study showed that social support, self-esteem, infertility causality, and sex role orientation are found to be affecting trait-anxiety. The hypotheses of the study which proposed social support, self-esteem, infertility causality and sex role orientation had a role in role on trait-anxiety were confirmed. Trait anxiety is considered as more stable form of anxiety, and the results are different in comparison to state anxiety. This difference helps us to underline the influence of social support, self-esteem and sex role orientation on the level of trait anxiety. Even though the level of social support stands as a factor for both state and trait anxiety, self-esteem and sex role orientation have contributing roles only on trait-anxiety.

The Effect of the Types of Infertility Causality on Trait-Anxiety

Infertility causality did not appear as a significant factor influencing trait-anxiety for infertile women. In other words, there is no difference among women with different types of infertility causality in terms of trait-anxiety. Since there is not a previously conducted study investigating this relationship among infertile women, this finding will also a contributing role.

The Effect of Social Support on Trait-Anxiety

Standing as one of the significant contributing factors on psychological distress in this study, social support is found also to be related with trait-anxiety. Having a high level of social support is associated with low level of trait-anxiety, and low level of social support is associated with high level of trait-anxiety. This result is in accordance with previous research which also have proposed social support as having role on the level anxiety experienced by infertile women (Domar, 1992; Güz et al. 2003; Shatford et al., 1988).

The Effect of Self-esteem on Trait-Anxiety

Low self-esteem was related with increased levels of anxiety in many other studies (Wright et al.,1991; Xu, Ke and He, 1994; Lee and Sun, 2000) and the findings of this study confirm those study's findings. Women who had low levels self-esteem had the highest level of trait-anxiety for every type of infertility causality which confirms the hypothesis for trait-anxiety that there will be a negative correlation between self-esteem and anxiety for every category of infertility causality.

The Effect of Sex Role Orientation on Trait-Anxiety

One other interesting finding is the sex role orientation's role on trait-anxiety. Femininity appears to be as a risk factor for high levels of trait-anxiety. This result is in the

same line with Cook's (1993), and is contradictory to Collard's (1999) and Edelman and Connolly's (1996) studies. Since the topic of sex role orientation has not been investigated much in terms of its relation to anxiety in infertility literature, this finding stands as a supporting evidence in emphasizing the significance of sex role orientation: Having a more feminine sex role orientation is related with experiencing trait-anxiety. It has to be noted that femininity is not found to be related with state-anxiety. It seems that, femininity is more related to the durable and stable form of anxiety. Feminine infertile women may be much more eager to fulfill their wish of becoming mothers when compared to masculine women. Since feminine women act according to their gender-roles which emphasizes more domestic and feminine kind of thinking and behaving, infertility can be experienced as a significant barrier to becoming mothers. Along with the "uncertainty" of their treatment situation, they may be anxious in a more chronic way, which is supported by the results of this study.

Contributions and Limitations of the Study and Suggestions for Future Research

The present study is the first study in Turkish literature of infertility psychology which has a broad scope of investigation and which explores depression and anxiety by proposing a model of investigation including the role of infertility causality, self-esteem, social support and sex role orientation.

This study has several implications, which may be relevant to future research on psychological distress. This study proposed a model of studying depression and anxiety while taking social support, self-esteem, sex-role orientation, and the types of infertility causality in terms of their effect on depression and anxiety.. This model of conceptualizing psychological distress through multi-variables is significant because there are various kind of reactions manifested by infertile women who undergo IVF treatments, in coping with infertility. Including factors that are thought to be affecting anxiety and depression, may provide

researchers and clinicians with a picture that will show more unique way of being affected by infertility period by infertile individuals. It is crucial to understand the factors contributing to anxiety and depression and this model stands as a comprehensive model for this. It can serve as an example for other researchers in investigating depression and anxiety along with other relevant psychological variables.

The findings of the study raise important points relevant to clinicians. Infertile patients undergoing IVF treatments are better to be monitored especially when their treatment duration is prolonged, the number of treatments are increased and when they are not working. Moreover, after the significant findings that were obtained in the present study related with social support, it is strongly suggested that the patients who have low levels of social support are identified and helped accordingly. Since, self-esteem and sex role orientation of the patients seem to play role on different aspects of distress, psychological counseling services are better to consider the results of this study, so they may take preventive actions. On the other hand, having a female causality of infertility remains as a risk factor for depression. Thus, counseling may be offered to those patients and help them to cope with the negative feelings.

As a drawback of the study, the anxiety scales were distributed to 50 of infertile patients but not to all of them because of including “anxiety” as a measure to study afterwards. Hence, half of the infertility patients in this study received anxiety scale while the other half did not.

In terms of suggestions for future research, the results of the present study and especially, the model of investigation can be taken account by other researchers in raising new questions with respect to infertility-related psychological issues. Psychological reactions to infertility can not be reduced to one or two factors; but in order to understand the psychological make-up of women with infertility problems, it is crucial to think through a

perspective of multi-variables. Hence, for future research, some new and related variables may be included in the research design which will provide us with a more detailed and thorough picture of infertility period on the part of infertile individuals.

Moreover, further research may include an another control group from normal population outside hospital setting which may serve as another point of comparison for the analyses of depression and anxiety.

APPENDIXES

APPENDIX 1

FIGURES

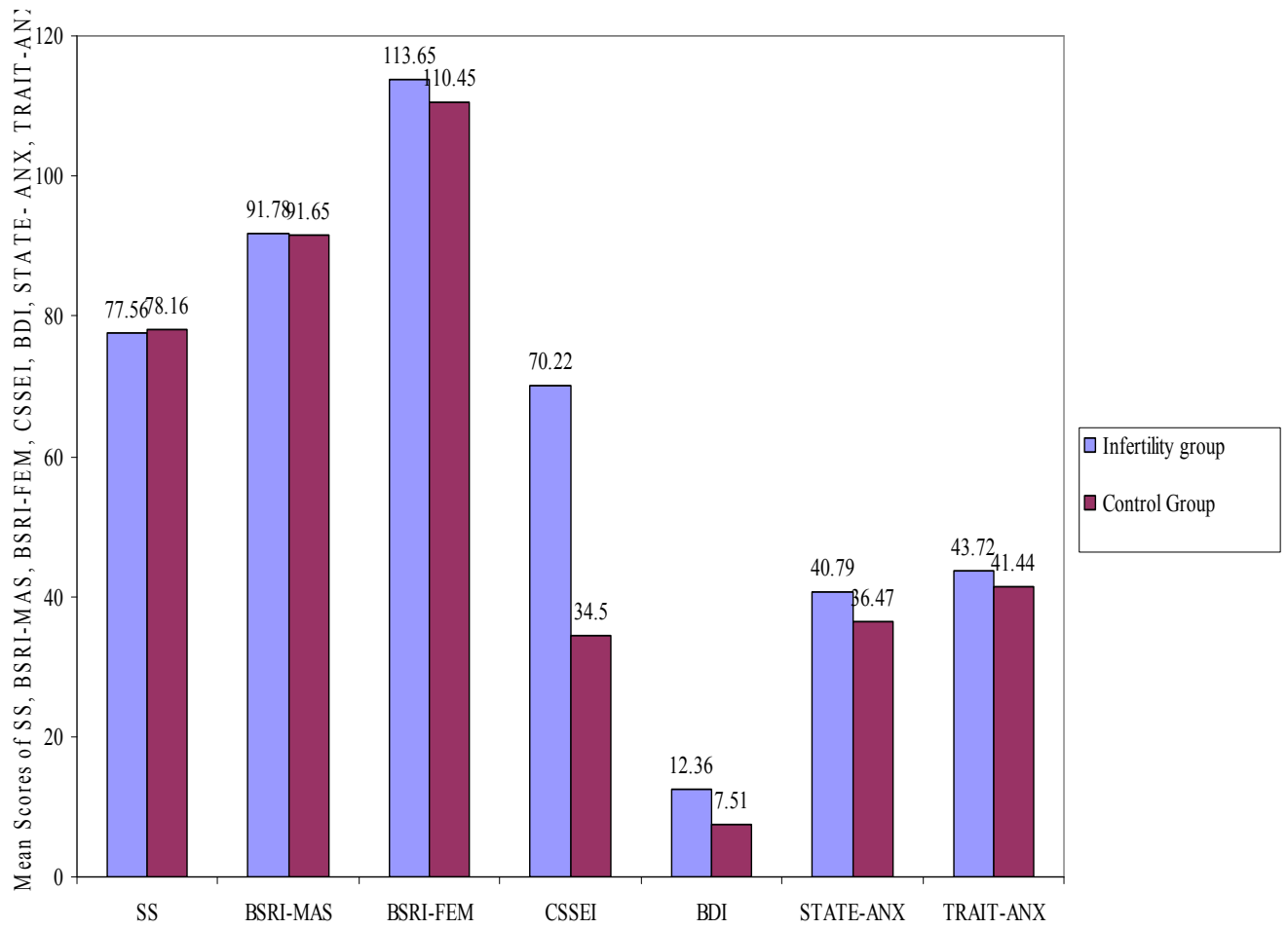


Figure 1: Group Means According to SS, BSRI-MAS, BSRI-FEM, CSSEI, BDI, STATE- ANX, TRAIT-ANX Scores

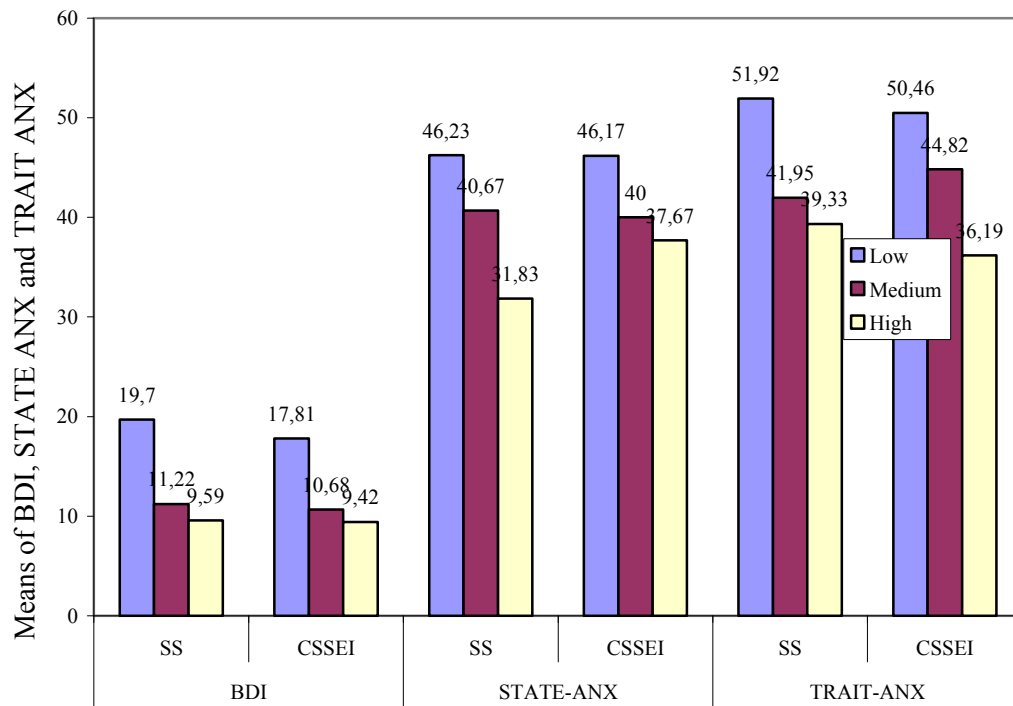


Figure 2: Means of BDI, STATE ANX, TRAIT ANX According to SS and CSSEI

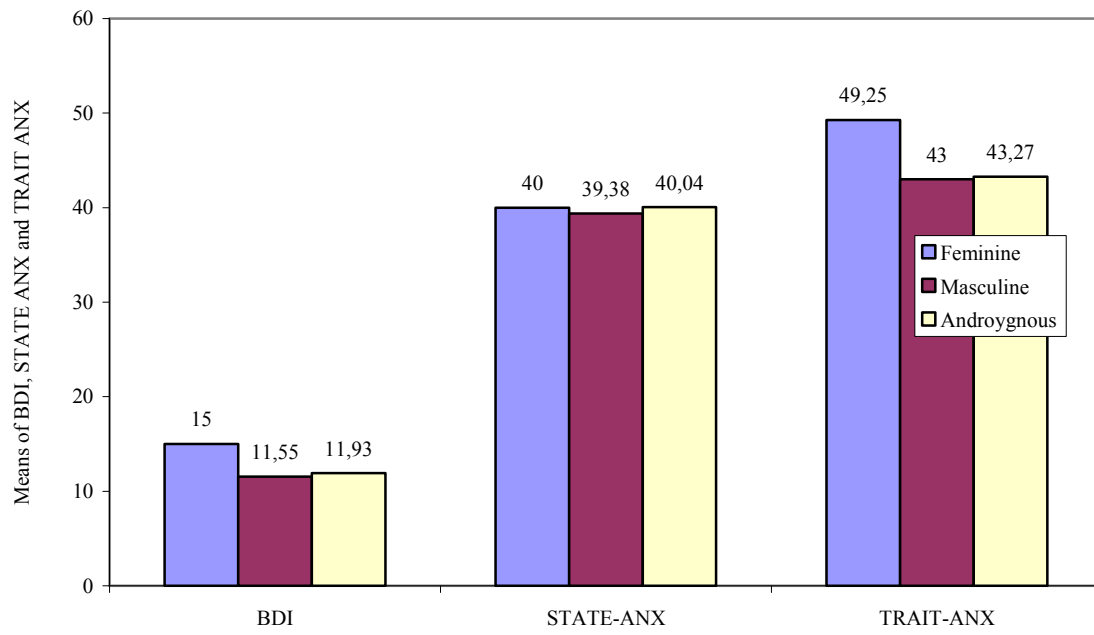


Figure 3: Means of BDI, STATE ANX and TRAIT ANX According to BSRI

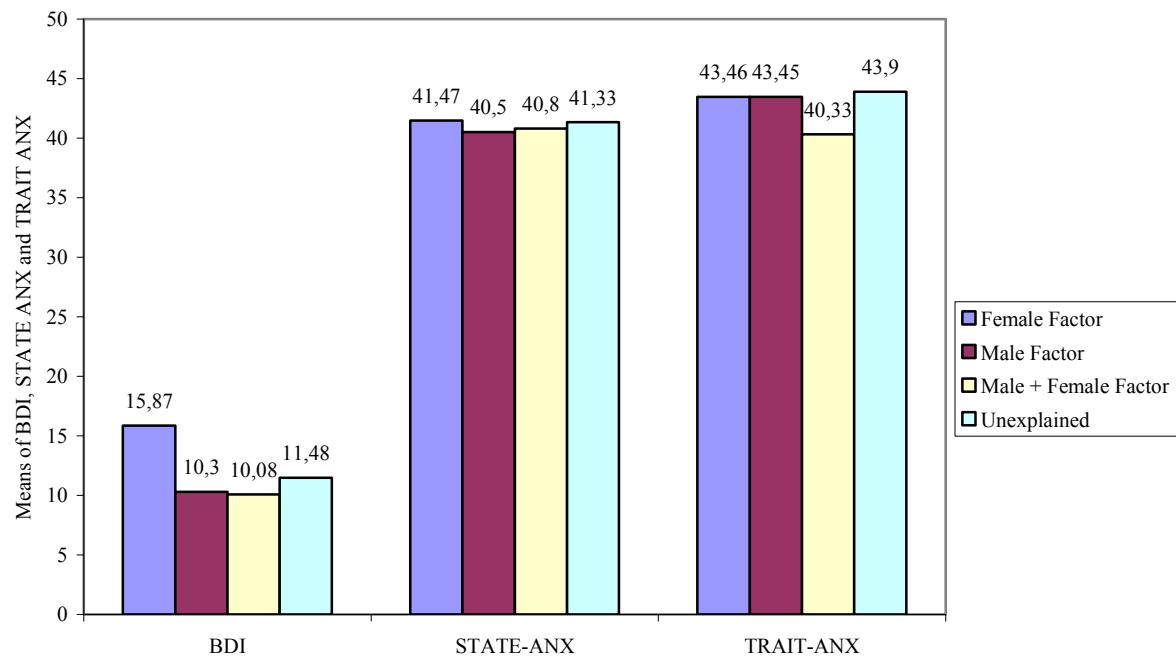


Figure 4: Means of BDI, STATE ANX and TRAIT ANX According to Infertility Causality

APPENDIX 2

DEMOGRAPHIC INFORMATION SHEET

1-Ad Soyad:

2-Yaş:

3-Eğitim durumu: (İlkokul) (Ortaokul) (Lise) (Üniversite) (Yüksek lisans ve üstü)

4-Yaşadığınız şehir/kasaba/köy:

5-Kaç yıllık evlisiniz?

6-Mesleğiniz:

7-Şu an çalışıyor musunuz?

8-Ailenizin yaklaşık geliri

0-1000 YTL

2000-4000 YTL

5000 ve üstü

9-Kaç ay/yıldır infertilite tedavisi görmektesiniz?

10-Şu an kaçınıcı tüp bebek tedavinizi olmaktadır?

11-İnfertilite nedeni: Aşağıda şıklardan sizin durumunuza uygun şıkkın yanına X işareti koyunuz.

(Kadından kaynaklanan faktör)

(Erkekten kaynaklanan faktör)

(Kadın+Erkekten kaynaklanan faktör)

(Nedeni bilinmeyen faktör)

12-Varsa, infertilite nedeni olarak doktor tarafından konulan teşhis

.....
.....
.....

APENDIX 3

BECK DEPRESSION INVENTORY

Beck Depresyon Envanteri

Aşağıda gruplar halinde bazı cümleler yazılıdır. Her gruptaki cümleleri dikkatle okuyunuz. **Bugün dahil, geçen hafta içinde** kendinizi nasıl hissettiğinizi en iyi anlatan cümleyi seçiniz. Seçmiş olduğunuz cümlelerin yanındaki numarayı daire içine alınız. Eğer bu grupta durumunuzu anlatan birden fazla cümle varsa her birini daire içine alıp işaretleyiniz.

Seçiminizi yapmadan önce her gruptaki cümlelerin hepsini dikkatlice okuyunuz.

- 0 Kendimi üzüntülü ve sıkıntılı hissetmiyorum.
 - 1 Kendimi üzüntülü ve sıkıntılı hissediyorum
 - 2 Hep üzüntülü ve sıkıntılıyım. Bundan kurtulamıyorum.
 - 3 O kadar üzüntülü ve sıkıntılıyım ki artık dayanamıyorum.
-
- 0 Gelecek hakkında umutsuz ve karamsar değilim.
 - 1 Gelecek hakkında karamsarım.
 - 2 Gelecekte beklediğim hiçbir şey yok.
 - 3 Geleceğim hakkında umutsuzum ve sanki hiçbir şey düzelmeyecekmiş gibi geliyor.
-
- 0 Kendimi başarısız bir insan olarak görmüyorum.
 - 1 Çevremdeki birçok kişiden daha çok başarısızlıklarım olmuş gibi hissediyorum.
 - 2 Geçmişe baktığımda başarısızlıklarla dolu olduğunu görüyorum.
 - 3 Kendimi tümüyle başarısız bir kişi olarak görüyorum.
-
- 0 Bir çok şeyden eskisi kadar zevk alıyorum.
 - 1 Eskiden olduğu gibi her şeyden hoşlanmıyorum.
 - 2 Artık hiçbir şey bana tam anlamıyla zevk vermiyor.
 - 3 Herşeyden sıkılıyorum.
-
- 0 Kendimi herhangi bir şekilde suçlu hissetmiyorum.
 - 1 Kendimi zaman zaman suçlu suçlu hissediyorum.
 - 2 Çoğu zaman kendimi suçlu hissediyorum.
 - 3 Kendimi her zaman suçlu hissediyorum.
-
- 0 Kendimden memnunum.
 - 1 Kendimden pek memnun değilim.
 - 2 Kendime çok kızıyorum.
 - 3 Kendimden nefret ediyorum.

- 0 Başkalarından daha kötü olduğumu sanmıyorum.
- 1 Zayıf yanlarım veya hatalarım için kendimi eleştiririm.
- 2 Hatalarımdan dolayı her zaman kendimi kabahatli bulurum.
- 3 Her aksilik karşısında kendimi kabahatli bulurum.

- 0 Kendimi öldürmek gibi düşüncelerim yoktur.
- 1 Zaman zaman kendimi öldürmeyi düşündüğüm oluyor fakat yapamıyorum.
- 2 Kendimi öldürmek isterdim.
- 3 Fırsatını bulsam kendimi öldürürüm.

- 0 Her zamankinden fazla içimden ağlamak gelmiyor.
- 1 Zaman zaman içimden ağlamak geliyor.
- 2 Çoğu zaman ağlıyorum.
- 3 Eskiden ağlayabilirdim, şimdi istesem de ağlayamıyorum.

- 0 Şimdi her zaman olduğundan daha sinirli değilim.
- 1 Eskişine kıyasla daha kolay kızıyor ya da sinirleniyorum.
- 2 Şimdi hep sinirliyim.
- 3 Bir zamanlar beni sinirlendiren şeyler şimdi hiç sinirlendirmiyor.

- 0 Başkaları ile görüşmek, konuşmak isteğimi kaybetmedim.
- 1 Başkaları ile eskisinden daha az konuşmak, görüşmek istiyorum.
- 2 Başkaları ile konuşmak ve görüşmek isteğimi kaybettim.
- 3 Hiç kimse ile görüşüp konuşmak istemiyorum.

- 0 Eskiden olduğu kadar kolay karar verebiliyorum.
- 1 Eskiden olduğu kadar kolay karar veremiyorum.
- 2 Karar verirken eskisine kıyasla çok güçlük çekiyorum.
- 3 Artık hiç karar veremiyorum.

- 0 Aynada kendime baktığımda bir değişiklik görmüyorum.
- 1 Daha yaşlanmışım ve çirkinleşmişim gibi geliyor.
- 2 Görünüşümün çok değiştiğini ve daha çirkinleştiğimi hissediyorum.
- 3 Kendimi çok çirkin buluyorum.

- 0 Her zamanki gibi iyi uyuyabiliyorum.
- 1 Eskiden olduğu gibi iyi uyuyamıyorum.
- 2 Her zamankinden 1-2 saat daha erken uyanıyorum ve tekrar uyuyamıyorum.
- 3 Her zamankinden çok daha erken uyanıyorum ve tekrar uyuyamıyorum.

- 0 Her zamankinden daha abuk yorulmuyorum.
 - 1 Her zamankinden daha abuk yoruluyorum.
 - 2 Yaptığım hemen herşey beni yoruyor.
 - 3 Kendimi hiçbirşey yapamayacak kadar yorgun hissediyorum.
-
- 0 İştahım her zamanki gibi.
 - 1 İştahım eskisi kadar iyi değil.
 - 2 İştahım ok azaldı.
 - 3 Artık hiç iştahım yok.
-
- 0 Son zamanlarda kilo vermedim.
 - 1 İki kilodan fazla kilo verdim.
 - 2 Dört kilodan fazla kilo verdim.
 - 3 Altı kilodan fazla kilo verdim. Daha az yiyerek kilo vermeye alışıyorum.
Evet..... Hayır.....
-
- 0 Sağlığım beni fazla endişelendirmiyor.
 - 1 Ağrı, sancı, mide bozukluğu veya kabızlık gibi rahatsızlıklar beni endişelendiriyor.
 - 2 Sağlığım beni endişelendirdiği için başka şeyleri düşünmek zorlaşıyor.
 - 3 Sağlığım hakkında o kadar endişeliyim ki başka hiçbirşey düşünemiyorum.
-
- 0 Son zamanlarda cinsel konulara olan ilgimde bir deęişme farketmedim.
 - 1 Cinsel konularla eskisinden daha az ilgiliyim.
 - 2 Cinsel konularla şimdi ok daha az ilgiliyim.
 - 3 Cinsel konulara olan ilgimi tamamen kaybettim.
-
- 0 Bana cezalandırılmışım gibi gelmiyor.
 - 1 Cezalandırılabilceğimi seziyorum.
 - 2 Cezalandırılmayı bekliyorum.
 - 3 Cezalandırıldığımı hissediyorum.

APPENDIX 4

STATE/TRAIT ANXIETY INVENTORY (STAI)

KENDİNİ DEĞERLENDİRME FORMU (STAI-I)

Aşağıda kişilerin kendilerine ait duygularını anlatmada kullandıkları birtakım ifadeler verilmiştir. Her cümleyi okuyun, sonra da şu anda nasıl hissettiğinizi ifadelerin sağ tarafındaki parantezlerden uygun olanını işaretlemek suretiyle belirtin. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenin üzerinde fazla zaman sarfetmeksizin anında nasıl hissettiğinizi gösteren cevabı işaretleyin.

	Hiç	Biraz	Çok	Tamamiyle
1. Şu anda sakinim.	()	()	()	()
2. Kendimi emniyette hissediyorum.	()	()	()	()
3. Şu anda sinirlerim gergin.	()	()	()	()
4. Pişmanlık duygusu içindeyim.	()	()	()	()
5. Şu anda huzur içindeyim.	()	()	()	()
6. Şu anda hiç keyfim yok.	()	()	()	()
7. Başıma geleceklerden endişe ediyorum.	()	()	()	()
8. Kendimi dinlenmiş hissediyorum.	()	()	()	()
9. Şu anda kaygılıyım.	()	()	()	()
10. Kendimi rahat hissediyorum.	()	()	()	()
11. Kendime güvenim var.	()	()	()	()
12. Şu anda asabım bozuk.	()	()	()	()
13. Çok sinirliyim.	()	()	()	()
14. Sinirlerimin çok gergin olduğunu hissediyorum.	()	()	()	()
15. Kendimi rahatlamış hissediyorum.	()	()	()	()
16. Şu anda halimden memnunum.	()	()	()	()
17. Şu anda endişeliyim.	()	()	()	()
18. Heyecandan kendimi şaşkına dönmüş hissediyorum.	()	()	()	()
19. Şu anda sevinçliyim.	()	()	()	()
20. Şu anda keyfim yerinde.	()	()	()	()

KENDİNİ DEĞERLENDİRME FORMU (STAI-II)

Bir önceki sayfada, “şu anda” kendinizi nasıl hissettiğiniz konusunda birtakım ifadeleri cevapladınız. Aşağıda verilen ifadeleri ise tüm hayatınız boyunca, genel olarak nasıl hissettiğinizi belirtecek şekilde cevaplayınız. Doğru ya da yanlış cevap yoktur. Herhangi bir ifadenizin. n üzerinde fazla zaman sarfetmeden genel olarak nasıl hissettiğinizi gösteren cevabı işaretleyiniz.

	Hiç	Biraz	Çok	Tamamiyle
21.Genellikle keyfim yerindedir.	()	()	()	()
22. Genellikle çabuk yoruluyorum.	()	()	()	()
23. Genellikle kolay ağlarım.	()	()	()	()
24. Başkaları kadar mutlu olmak isterim.	()	()	()	()
25. Çabuk karar veremediğim için fırsatları kaçıyorum.	()	()	()	()
26. Kendimi dinlenmiş hissedirim.	()	()	()	()
27.Genellikle sakin, kendime hakim ve soğukkanlıyım.	()	()	()	()
28. Güçlüklerin, yenemeyeceğim kadar biriktiğini hissedirim.	()	()	()	()
29.Önemsiz şeyler hakkında endişelenirim.	()	()	()	()
30.Genellikle mutluyum.	()	()	()	()
31.Herşeyi ciddiye alır ve etkilenirim.	()	()	()	()
32.Genellikle kendime güvenim yoktur.	()	()	()	()
33.Genellikle kendimi emniyette hissedirim.	()	()	()	()
34.Sıkıntılı ve güç durumlarla karşılaşmaktan kaçınıyorum.	()	()	()	()
35.Genellikle kendimi hüzünlü hissedirim.	()	()	()	()
36.Genellikle hayatımdan memnunum.	()	()	()	()
37.Olur olmaz düşünceler beni rahatsız eder.	()	()	()	()
38.Hayal kırıklıklarını öylesine ciddiye alırım ki, hiç unutmam.	()	()	()	()
39.Aklı başında ve kararlı bir insanım.	()	()	()	()
40.Son zamanlarda kafama takılan konular beni tedirgin eder.	()	()	()	()

APPENDIX 5

BEM SEX ROLE INVENTORY (BSRI)

Aşağıda sıralanan özelliklerin size ne kadar uygun olduğunu (1)den (7)ye kadar bir ölçekte, uygun bulduğunuz şıkka ‘X’ işareti koyarak belirtiniz.

	Bana hiç uygun değil (1)	Bana uygun değil (2)	Bana pek uygun değil (3)	Emin değilim (4)	Bana biraz uygun (5)	Bana uygun (6)	Bana çok uygun (7)
1.Liderlik eden							
2.Saldırgan							
3.Sevecen							
4.Neşeli							
5.Şartlara uyan							
6.Kendini beğenmiş							
7.Hırslı							
8.Olayları tahlil eden							
9.Çocuksu							
10.Şefkatli							
11.Vicdanlı							
12.Geleneksel							
13.Kendi fikrini ortaya koyan.....							
14.Atletik							
15.Sert söz söylemeyen							
16.Gönül almaya istekli							
17.Dost							
18.Yetersiz							
19.Rekabetçi							
20.İnançlarını savunan							
21.Kadınsı							
22.Pohpohlanmaktan etkilenen.....							
23.Mutlu							

	Bana hiç uygun değil (1)	Bana uygun değil (2)	Bana pek uygun değil (3)	Emin değilim (4)	Bana biraz uygun (5)	Bana uygun (6)	Bana çok uygun (7)
24.Kıskanç							
25.Hükmeden							
26.Güçlü							
27.Nazik							
28.Kolay aldanan							
29.Yardımsever							
30.Günü gününe uymayan							
31.Lider yeteneği olmayan							
32.Bağımsız							
33.Çocuk seven							
34.Sadık							
35.Sevimli							
36.Düşünce ve duygularını gizleyen							
37.Bireyci							
38.Kolay karar verebilen							
39.Başkalarının gereksi- nimlerine duyarlı							
40.Utangaç							
41.Güvenilir							
42.Asık suratlı							
43.Erkeksi							
44.Kendine güvenen							
45.Tatlı dilli							
46.Derde ortak olabilen							
47.Samimi							

APPENDIX 6

SOCIAL SUPPORT SCALE

Sosyal hayatınızla ilgili sorulardan oluşan bu ankette her bir soruyu sadece arkadaş ve aile ortamınızı düşünerek cevaplayınız. Sizin durumunuza uygun düşen cevap basamağının altındaki boşluğa çarpı (X) işareti koyunuz.

	Hiçbir zaman	Çok nadir	Bazen	Çoğu zaman	Her zaman
1.İhtiyacınız olduğunda duygu ve düşüncelerinizi paylaştığınız dertleştiğiniz kişileri ne sıklıkta bulabiliyorsunuz?	-----	-----	-----	-----	-----
2.İhtiyacınız olduğunda yakınlarınız size sevgilerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
3.Sarılma, öpme, dokunma gibi yollarla fiziksel olarak sevgi görme ihtiyacı hissettiğinizde yakınlarınız bunu ne sıklıkta yaparlar?	-----	-----	-----	-----	-----
4.Herşeyin iyiye gideceği hakkında temin edilme ve teselli edilme ihtiyacını hissettiğinizde yakınlarınız bunu ne sıklıkta yaparlar?	-----	-----	-----	-----	-----
5.İhtiyacınız olduğunda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söyler?	-----	-----	-----	-----	-----
6.Zor bir durumla karşılaştığınızda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söylüyor?	-----	-----	-----	-----	-----
7.İhtiyacınız olduğunda size gerekli bilgileri veya yardımı nereden alabileceğinizi yakınlarınız ne sıklıkta söylüyor?	-----	-----	-----	-----	-----
8.İçinde bulunduğunuz zor durumlarda yakınlarınız ne sıklıkta çare buluyor veya çözümler üretiyorlar?	-----	-----	-----	-----	-----
9.Gelecekle ilgili planlar yaparken yakınlarınızın görüşlerine ihtiyaç duyduğunuzda size ne sıklıkta katkıda bulunuyorlar?	-----	-----	-----	-----	-----
10.Maddi yardıma ihtiyacınız olduğunda yakınlarınızdan bu yardımı ne sıklıkta bulabiliyorsunuz?	-----	-----	-----	-----	-----

	Hiçbir zaman	Çok nadir	Bazen	Çoğu zaman	Her zaman
11.İhtiyacınız olduğunda yakınlarınız size araba veya benzeri değerli eşyaları ne sıklıkta ödünç verebiliyorlar?	-----	-----	-----	-----	-----
12.Yakınlarınız size işlerinizde ne sıklıkta yardım ediyorlar?	-----	-----	-----	-----	-----
13.Yakınlarınızın sizinle birlikte gideceğiniz yerlere gelmesine ve size eşlik etmesine ihtiyaç duyduğunuzda bunu ne sıklıkta yapıyorlar?	-----	-----	-----	-----	-----
14.Hastalık, iş gezisi, tatil vb. gibi nedenlerle evden uzak kalmanız gerektiğinde yakınlarınız ne sıklıkta aile bireylerinizle ilgileniyor?	-----	-----	-----	-----	-----
15.Yakınlarınız size değer verdiklerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
16.Yakınlarınız yaptığınız işlere değer verdiklerini ne sıklıkta hissettiriyorlar?	-----	-----	-----	-----	-----
17.Uzun süren ve çözümlenmesi güç bir sorunla karşı karşıya olduğunuzda yakınlarınız ne sıklıkta sizin yanınızda olduklarını hissettiriyorlar?	-----	-----	-----	-----	-----
18.Yakınlarınız sizi ne sıklıkta yaptığınız yanlışlara rağmen kabul ediyorlar?	-----	-----	-----	-----	-----
19.Yakınlarınız size ne sıklıkta boş zamanlarınızda beraber olmayı, bir arada birşeyler yapmayı teklif ediyorlar?	-----	-----	-----	-----	-----

APPENDIX 7

COOPERSMITH SELF-ESTEEM INVENTORY (CSSEI)

Aşağıda insanların kendileri ile ilgili bazı duygularını açıklayan ifadeler yer almaktadır. Bu cümlelerden size uygun olanlarını “Aynen benim gibi”, uygun olmayanlarını ise “Benim gibi değil” sütununa X işareti koyarak belirtiniz.

	Aynen benim gibi	Benim gibi değil
1.Çevremde olup bitenlerden genellikle rahatsız olmam.	()	()
2.Başkalarının önünde konuşmak bana zor gelir.	()	()
3.Eğer elimde olsaydı kendimdeki pek çok şeyi değiştirmek isterdim.	()	()
4.Karar vermede fazla zorluk çekmem.	()	()
5.İnsanlar benimle olmaktan hoşlanırlar.	()	()
6.Evde kolayca moralim bozulur.	()	()
7.Yeni şeylere kolay alışamam.	()	()
8.Yaşıtlarım arasında sevilen bir kişiyim.	()	()
9.Ailem genellikle duygularıma önem verir.	()	()
10.Başkalarının söylediğini kolaylıkla kabul ederim.	()	()
11.Ailem benden çok şey bekler.	()	()
12.Benim yerimde olmak oldukça zordur.	()	()
13.Hayatımın karmakarışık olduğuna inanıyorum.	()	()
14.Genellikle başkaları düşüncelerimi kabul eder.	()	()
15.Kendimi yetersiz buluyorum.	()	()
16.Sık sık evden kaçmayı düşünüyorum.	()	()
17.Yaptığım işten çoğunlukla memnun olmam.	()	()
18.Başkaları kadar güzel değilim.	()	()
19.Söylenecek sözüm varsa onu söylemekten çekinmem.	()	()
20.Ailem benim duygularımı anlar.	()	()
21.Çok sevilen bir kişi değilim.	()	()
22.Genellikle ailemin beni dışladığını hissediyorum.	()	()
23.Yaptığım şeyler genellikle cesaretimi kırar.	()	()
24.Sık sık keşke başka biri olsam diye düşünürüm.	()	()
25.Güvenilir bir kişi olmadığımı düşünüyorum.	()	()

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