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### Psychological evaluation of couples attending the infertility clinic in a tertiary care, teaching hospital

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#### KEYWORDS

Psychological evaluation;  
Infertile couples;  
anxiety;  
Depression

#### A B S T R A C T

Psychological evaluation of couples attending the infertility clinic in a tertiary care, teaching hospital were used to study the prevalence of anxiety, depression and the effect of infertility on the quality of life of infertile couples. Reproductive failure or involuntary childlessness is a significant loss for men and women worldwide. Psychopathological response is not a universal consequence in infertile couples. The data from India is very sparse and far. Although infertility is primarily a medical condition its diagnosis can greatly impact the emotional functioning of the couples and/or individuals dealing with the problem. The study was conducted from among the couples attending the infertility counseling clinic from August 2006 to October 2008 in Hyderabad. 50 couples were recruited into the study according to the inclusion and exclusion criteria and were administered after a diagnosis of anxiety and/or depression by the attending psychiatrist. The prevalence of mild to moderate anxiety was 76% in the recruited females suggesting that the prevalence of anxiety is higher in infertile couples and more so in the female groups who attempted infertility treatment at least once. The prevalence of mild to moderate depression was about 66% and for moderate to severe was about 37% in the recruited males as opposed to 26% and 74% in the recruited females. The prevalence of severe anxiety and depression was higher in infertile couples and more so in the female spouse (upto 4 years of marriage).

### Introduction

Infertility is the inability to conceive after twelve months of regular sexual relation

without the use of contraception or, carry to a live birth, a pregnancy (Morin-Davy,

1998). An estimated 5.3 million couples have been diagnosed with infertility and nearly one in six couples in the United States is affected with this (Ulbrich et al., 1990). The rate of infertility has increased in the last thirty years-the causes of this may be delayed child bearing, use of birth control and sexually transmitted diseases which can affect fertility adversely (McDaniel et al., 1992). The data from India is very sparse and far between; overall, 7% of currently married women in India are childless. Southern (10.9%) and western (10.7%) regions shows highest percentage of childless couples followed by eastern region (6.5%). However, central region exhibits lowest (4.7%) percentage of childlessness. Analyzing state wise Andhra Pradesh shows highest percent of childless couples (13.3%) in India followed by Goa (11.8%). Urban areas have more percentage of childless women than their rural counterparts (Agarwal et al., 2002).

Although infertility is primarily a medical condition its diagnosis can greatly impact the emotional functioning of the couples and/or individuals dealing with the problem. Menning described infertility as a developmental crisis that can threaten a couple's future goal (Menning, 1997). Shapiro described that the impact of infertility as a brutal and unanticipated shock (Shapiro, 1982). Couples routinely report a number of stressors associated with the medical treatment of infertility- these may include, but are not limited to stress related to their sexual functioning, stress related to their endurance and quality of their relationships and stress related to the endurance and quality of their relationship and related to their social and family networks (Newton et al., 1999).

Reproductive failure or involuntary childlessness is a significant loss for men

and women worldwide. Although certain degree of emotional distress in response to infertile is understandable and even acceptable that psychopathological response is not a universal consequence. Not all patients suffering from infertility have psychopathological morbidity and recent review of literature has concluded that there was no significant difference between infertile individuals and controls (Greil, 1997). At the same time, infertile individuals undergoing assisted conception appear to have an increased risk for psychopathological distress particularly if the treatment is unsuccessful; the general perception being that the last chance for the couple to have a biological child has also been wasted (Newton et al., 1990; Beaurepaire et al., 1994). Research has also shown that there are mood fluctuations in men and women undergoing infertility treatment- over the course of the assisted reproduction treatment cycles- anxiety and depression increase on the day of oocyte-retrieval, decrease on embryo-transfer day, and again rise on pregnancy-testing day: the severity of this emotional distress diminishes with repeated cycles (Newton et al., 1994; Kolonoff-Cohen et al., 2001).

In an attempt to assess the prevalence of psychiatric morbidity (pre-existing or newly emergent) in couples attending a fertile clinic, Guerra et al., (1998) concluded that 61.1% of women and 21% of men had a psychiatric disorder. Adjustment and anxiety disorder were the most common, with depression twice as prevalent in infertile women with a past history of depression as noted by Lapane et al., (1995).

Both acute and chronic alcohol use can lead to impotence in men. Increased blood alcohol concentrations lead to decreased sexual arousal, increased ejaculatory

latency, and decreased orgasmic pleasure. The incidence of impotence may be as high as 50% in patients with chronic alcoholism. Additionally, many chronic alcoholics develop testicular atrophy and decreased fertility. Sexual function in alcohol-dependent women is less clearly understood. Many female alcoholics complain of decreased libido, decreased vaginal lubrication, and menstrual cycle abnormalities. Their ovaries often are small and without follicular development. Some data suggest that fertility rates are lower for alcoholic women. The presence of comorbid disorders such as anorexia nervosa or bulimia can aggravate the problem. The prognosis for men and women who become abstinent is favourable in the absence of significant hepatic or gonadal failure (Michael et al., 2006).

In a very recent meta – analysis published in October 2008, the effects of cigarette smoking upon clinical outcomes of assisted reproduction was studied, it was found that patients who smoked demonstrated significantly lower odds of live birth per cycle, significantly lower odds of clinical pregnancy per cycle, significantly higher odds of spontaneous miscarriage and significantly higher odds of ectopic pregnancy however a systematic literature review revealed that fertilization rates were not significantly different between smoking and non-smoking groups in most studies. Hence this meta-analysis provides compelling evidence for a significant negative effect of cigarette smoking upon clinical outcomes of assisted reproduction treatment and should be presented to infertility patients who smoke cigarettes in order to optimize success rates (Waylen et al., 2008). In another study it was found that nicotine dependent women were likely to meet the criteria for at least one other mental disorder- dysthymia, major

depression, panic disorder and women who smoked gave birth to sons with lower sperm counts (Storgaard et al., 2003). Heroin addicts are relatively docile and compliant after taking heroin, but during withdrawal, they become irritable and aggressive.

Addictions also refer to psychological, impulse control behaviors (gambling, pornography) which are less likely to be physically addictive; however these can still affect fertility. An individual addicted to sex or pornography may have frequent ejaculations or may indulge in high-risk sexual behavior and practices predisposing him to sexually transmitted disease and HIV. Further the social and material discords associated with these behaviors and the risk of co- morbidity with other mental disorders illustrates how these addictions can be destabilizing and impair an individual's or couples fertility plans (Levenson et al., 2007).

Sexual dysfunction in infertile women may be due to hormonal changes, anatomic or physical factors, medical or surgical organic diseases interfering with general and sexual health and well-being (Burns, 2006). Female sexual pain may be a major cause for infertility – it may be the cause if not the result, and sometimes be intense enough to halt intercourse.

The commonest sexual dysfunctions in the male are erectile dysfunction, premature ejaculation, retarded or inhibited ejaculation. Erectile dysfunction is the commonest cause of male factor infertility although it is very rarely volunteered to the care-giver by the patient himself (ESHRE, 2006). Treatment for secondary erectile dysfunction has been found to be effective- phosphodiesterase-5 inhibitors-slidenafil, verdenafil are found to be effective.

Additionally they have also been found to improve sperm motility. Sildenafil citrate has been found to be helpful in males using sexual intercourse as a means to conceive or pursuing infertility treatment involving semen collection (Lanzi et al., 2003).

Infertile men and women are most vulnerable to psychopathological morbidity especially if they have a history of the same in the past; this holds good for them individually or as a couple or potential parents and hence it is imperative that their psychiatric needs be addressed on an urgent and emergent basis. Psychiatrists should work in this area either as infertility counselors or collaborate with infertility counselors.

Psychiatrists are typically called in by the reproduction medicine team to evaluate psychiatric readiness of an individual for undergoing infertility treatment, to treat a patient who has an active psychopathological condition, to evaluate a patient's prescription of psychotropic medications, to assess a patient's mental status to provide informed consent, to help exclude individuals from the infertility treatment programme (as reproductive collaborators) due to confounding mental health diagnosis or psychopharmacological contraindications, to explain the side-effects of infertility treatment medications and their impact on already pre-existing psychopathological illness and the hormonal shifts and their effects on psychological well-being particularly in individuals with already pre-existing psychopathological illness.

Professionals in the field of assisted conception should be aware of the importance of psychological factors in consumers of fertility treatment, the need to make available a rapid and reliable

screening instrument for identifying patients at greater demand for psychological support, and the inclusion of counseling and supportive psychotherapy in the general therapeutic framework of infertility.

## **Materials and Methods**

### **Study design**

The study was conducted from among the couples attending the infertility counseling clinic from August 2006 to October 2008 at Owaisi Hospital and Research Center and Princes ESRA Hospital attached to Deccan College of Medical Sciences, Hyderabad attached to Deccan College of Medical Sciences, Hyderabad. 50 couples were recruited into the study according to the inclusion and exclusion criteria and were administered after a diagnosis of anxiety and/or depression was made initially by a personal interview by the attending psychiatrist. The baseline data, included demographic details of the couple, duration of married life, details of family structure, educational and monetary status, history of present and past medical, surgical illness, years since the diagnosis of infertility was made, type of infertility and type of treatment opted for, number of failed attempts and history of current medications usage.

The depression and anxiety of couples were defined in terms of level of scores. In terms of depression, scores 0-9 was considered with no depression, 10-18 with mild to moderate depression, 19-29 with moderate to severe depression and >30 was considered with extremely severe depression. The anxiety score 0 was considered with no anxiety, 1 with mild anxiety, 2 with Moderate anxiety, 3 with

severe anxiety and 4 with very severe or grossly disabling anxiety.

### **Inclusion criteria**

Couples providing informed consent for the study-if uneducated or unable to read, the informed consent was read out to the interviews and their complete understanding and grasp of the articles ascertained completely before obtaining their left thumb impression

Couples presenting to the clinic with both partners present, at the time of the interview (at the time of administration of the scales)

Couples presenting with primary infertility  
Couples in whom the either spouse has no pre-existing psychiatric morbidity (except addictions)

Couples in whom the either spouse is not on psychotropic medications

### **Exclusion criteria**

Couples not providing informed consent to the study

Individuals not presenting with their spouses, at the time of the interview (as the evaluation was for a couple)

Couples presenting with secondary infertility

Couples in whom the either a spouse had a pre-existing psychiatric morbidity (except addictions)

Couples in whom the either spouse was on psychotropic medications

The aim of the study- psychological evaluation of couples attending the infertility clinic in a tertiary care, teaching hospital were

To study the prevalence of anxiety infertile couples.

To study the prevalence of depression in infertile couples.

To study the effect of infertility on the quality of life of infertile couples.

A total of 50 couples were recruited into the study between august 2006 and October 2008. Of the 50 males included in the study, the average age of the interviewees was 30.64 years, of whom 2 were in the 21-25 years age group, 25 were in the 26-30 years age group, 19 were in the 31-35 year age group and one had an age of >40 years. Of the 50 females included in the study, the average age of the interviewees was 25.2 years, of whom 1 had an age of <21 years; 30 were in the 21-25 years age group and 19 were in the 26-30 years age group, 19 were in the 31-35 years age group (Table 1).

Among the interviewees, recruited into the study, 40 were urbanities and 10 were from rural areas. The educational status of the interviewees, recruited into the study is provided in table 2.

### **Result and Discussion**

Among the interviewees, recruited in the study, the average duration after diagnosis of infertility was 3.66 years in which 4 were found married for about 2 years, 16 for about 2-4 years, 21 for 4-6 years and 9 were married for >6 years (Fig. 1).

Among the interviewees, recruited in the study, 4 attempted no infertility treatment, 28 attempted infertility treatments and failed once, 10 attempted it twice and failed, 6 thrice and 2 failed four times and more. The average number of failed attempts was about 1.5.

The interviewees enrolled in the study were administered to the Hamilton Anxiety Rating Scale. The scale resulted in more

number of males in no anxiety and mild anxiety categories whereas more females were found in moderate to very severe anxiety. However, males and females both were found significantly high in moderate anxiety as compared to the females (Fig. 2).

On administration of the Hamilton Anxiety Rating Scale to the male interviewees-following pattern of anxiety rating emerged:

Among those married for two years and less, two had no anxiety and one had mild and one had moderate anxiety, those married for two to four years, 7 had no anxiety, two had mild and six had moderate anxiety, those married between four and six years, 5 had no anxiety, 10 had mild and 9 had moderate anxiety and among those who were married for more than six years, 1 had mild, 1 had moderate, 2 had severe and 3 had very severe debilitating anxiety (Fig. 3).

On administration of the Hamilton Anxiety Rating Scale to the female interviewees-following pattern of anxiety rating emerged:

Among those married for two years and less, one had no anxiety and one had mild and two had moderate anxiety, those married for two to four years, 1 had no anxiety, 6 had mild, 6 had moderate anxiety and 2 had severe anxiety, those married between four and six years, 3 had mild anxiety, 12 had moderate anxiety, 7 had severe anxiety and 2 had severe anxiety and among those who were married for more than six years, 1 had mild, 1 had severe and 6 had very severe debilitating anxiety (Fig. 3).

On administration of the Hamilton Anxiety Rating Scale to the male interviewees-

following pattern of anxiety rating emerged:

From among the couples who had not attempted infertility treatment, 3 had no anxiety, from those who attempted it once, 8 had no anxiety, 7 had mild anxiety, 11 had moderate anxiety and 1 had severe anxiety. From among those who attempted it twice, 1 had no anxiety, 5 had mild, 4 had moderate anxiety and 1 had severe anxiety. From those who attempted it thrice, 1 had mild anxiety, 2 had moderate anxiety, 1 had severe anxiety and 3 had very severe anxiety and from those who attempted it four times, 1 had moderate anxiety and 1 had very severe debilitating anxiety (Fig. 4).

On administration of the Hamilton Anxiety Rating Scale to the female interviewees-following pattern of anxiety rating emerged:

From among the couples who had not attempted infertility treatment, 2 had no anxiety and 1 had mild anxiety. From those who attempted it once, 9 had mild anxiety, 16 had moderate anxiety, 1 had severe anxiety and 1 had very severe anxiety. Among those who attempted it twice, 3 had moderate anxiety, 6 had severe anxiety and 2 had severe anxiety. From those who attempted it thrice, 3 had severe anxiety and 4 had very severe anxiety and from those who attempted it four times, 2 had very severe debilitating anxiety (Fig. 4).

The interviewees were administered the Beck Depression Inventory and found that among males, 21 had no depression, 12 had mild depression, 11 had moderate depression and 6 had severe depression. Whereas, among females, 4 had no depression, 9 had mild depression, 18 had moderate depression and 19 had severe depression (Fig. 5).

During the correlation of Beck Depression Inventory with the duration of married life following results were observed:

Among the male interviewees, who were married for two years and less, 3 had no depression and one had moderate depression, among those married for two to four years, 5 had no depression, 6 had mild depression, 4 had moderate depression and 1 had severe depression, those married between four and six years, 10 had no depression, 6 had mild, 4 had moderate depression and 1 had severe depression and among those who were married for more than six years, 2 had no depression, 2 had moderate depression and 5 had severe depression (Fig. 6).

Among the female interviewees, who were married for two years and less, 1 had no depression and 3 had moderate depression, among those married for two to four years, 2 had no depression, 3 had mild depression, 6 had moderate depression and 5 had severe depression, those married between four and six years, 5 had mild depression, 7 had moderate depression and 9 had severe depression and among those who were married for more than six years, 3 had moderate depression and 6 had severe depression (Fig. 6).

During the correlation of Beck Depression Inventory with the number of failed attempts at infertility treatment to the male interviewees, the following results were observed:

From among the couples who had not attempted infertility treatment, 4 had no depression, from those who attempted it once, 12 had no depression, 7 had mild depression, 9 had moderate depression and 1 had severe depression. From among those

who attempted it twice, 5 had no depression, 3 had mild depression, 2 had moderate depression and 1 had severe depression. From those who attempted it thrice, 1 had no depression, 1 had mild depression, 1 had moderate depression and 3 had severe depression and from those who attempted it four times, 1 had moderate depression and 1 had severe depression (Fig. 7).

On administration of Beck Depression Inventory with the number of failed attempts at infertility treatment to the female interviewees, the following results were observed:

From among the couples who had not attempted infertility treatment, 3 had no depression and 1 had moderate depression, from those who attempted it once, 1 had no depression, 8 had mild depression, 14 had moderate depression and 6 had severe depression. From among those who attempted it twice, 1 had mild depression, 1 had moderate depression and 9 had severe depression. From those who attempted it thrice, 3 had moderate depression and 3 had severe depression and from those who attempted it four times, 1 had moderate depression and 1 had severe depression (Fig. 7).

While correlating the results of the World Health Organization Quality of Life Index (WHOQOL-BREF) with Hamilton Anxiety Rating Scale in the male interviewees following results were observed:

From among the interviewees with a WHOQOL index of <40, 1 had moderate anxiety, 2 had severe anxiety and 2 had very severe anxiety, likewise 1 had moderate depression and 4 had severe depression. From among those who had a WHOQOL index of between 41-60, 1 had

no anxiety, 3 had mild anxiety, 5 had moderate anxiety, 1 had severe anxiety and 1 had very severe anxiety likewise 2 had no depression, 4 had mild depression, 2 had moderate depression and 3 had severe depression, from those who had a WHOQOL index of between 61-90, 7 had no anxiety, 8 had mild anxiety, 9 had moderate anxiety, likewise 12 had no depression, 6 had mild depression and 6 had moderate depression and from among those who had a WHOQOL index of greater than 90, 4 had no anxiety, 3 had mild anxiety, 2 had moderate anxiety, likewise 7 had no depression, 1 had mild depression and 1 had moderate depression (Fig. 8 and Fig. 9).

While correlating in females from among the interviewees with a WHOQOL index <40, 1 had moderate anxiety, 5 had severe anxiety and 7 had very severe anxiety, likewise 1 had mild depression, 3 had moderate depression and 9 had severe depression. From among those who had a WHOQOL index between 41-60, 1 had mild anxiety, 11 had moderate anxiety, 5 had severe anxiety and 1 had very severe anxiety likewise 2 had mild depression, 6 had moderate depression and 10 had severe depression. From among those who had a WHOQOL index between 61-90, 7 had mild anxiety and 7 had moderate anxiety, likewise 1 had no depression, 4 had mild depression, and 9 had moderate depression and from among those who had a WHOQOL index >90, 2 had no anxiety, 2 had mild anxiety and 1 had moderate anxiety, likewise 3 had no depression, 1 had mild depression and 1 had moderate depression (Fig. 8 and Fig. 9).

Anxiety disorders - phobias, obsessive compulsive disorder and disorders with concomitant anxiety symptoms (depression) are highly prevalent among

infertile men and women and this understandable because anxiety symptoms typically increase during times of stress leading to exacerbations of pre-existing conditions, triggering of phobias or a first time full-blown anxiety disorder in response to the diagnosis of infertility or infertility treatment (Williams et al., 2006). Theoretically it is believed that increases in the levels of progesterone during pregnancy actually should cause decrease in the incidence of anxiety disorders however it has been observed that not all women with anxiety, hyper vigilance, panic attacks and obsessive compulsive disorders improve symptomatically after completing infertility treatment and becoming pregnant. As with depression the post-partum period is the most vulnerable period for relapse or escalation of anxiety disorders (Miller, 1994).

The prevalence of mild to moderate anxiety was about 52% and the prevalence of moderate to very severe anxiety was about 48% in the recruited males as opposed to 24% and 76% in the recruited females suggesting that the prevalence of anxiety is higher in infertile couples and more so in the female groups.

The prevalence of anxiety is directly proportional to the duration of married life and hence the duration after the diagnosis of infertility is made; this was about 38% in both the sexes till upto 4 years of marriage and this drastically went upto 62% in the next two years.

Max Hamilton Anxiety rating scale or The Hamilton Anxiety Scale (HAS or HAM-A) is a 14-item test measuring the severity of anxiety symptoms.

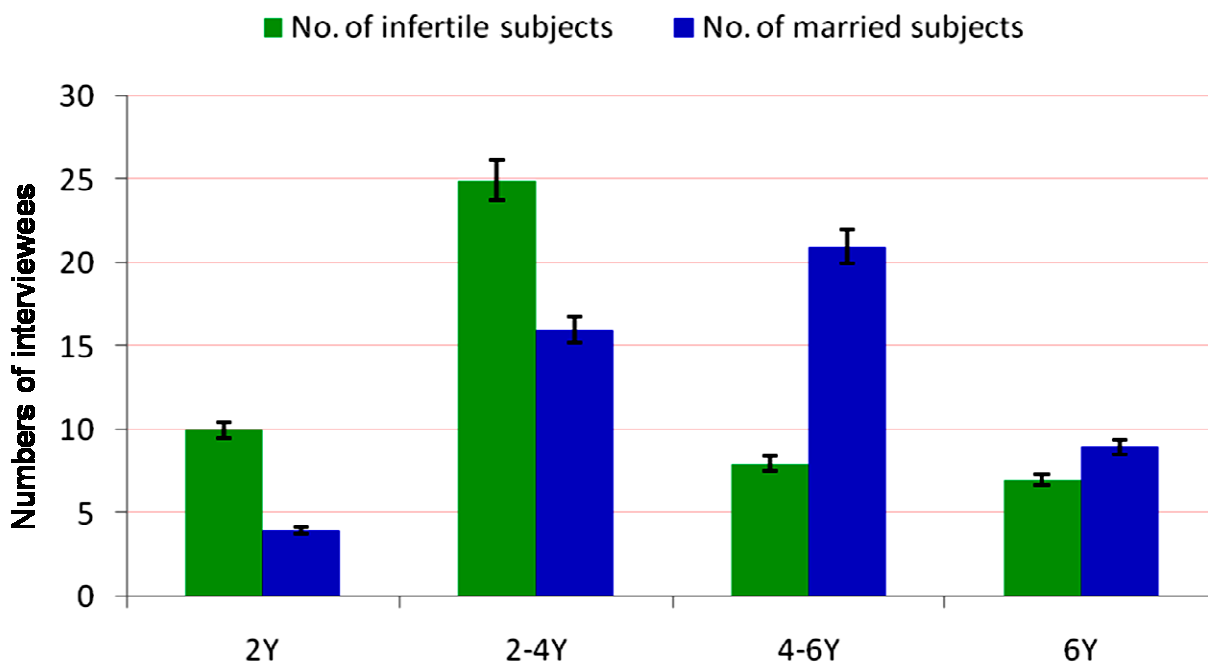


**Table.1** Average age of the interviewees recruited into the study

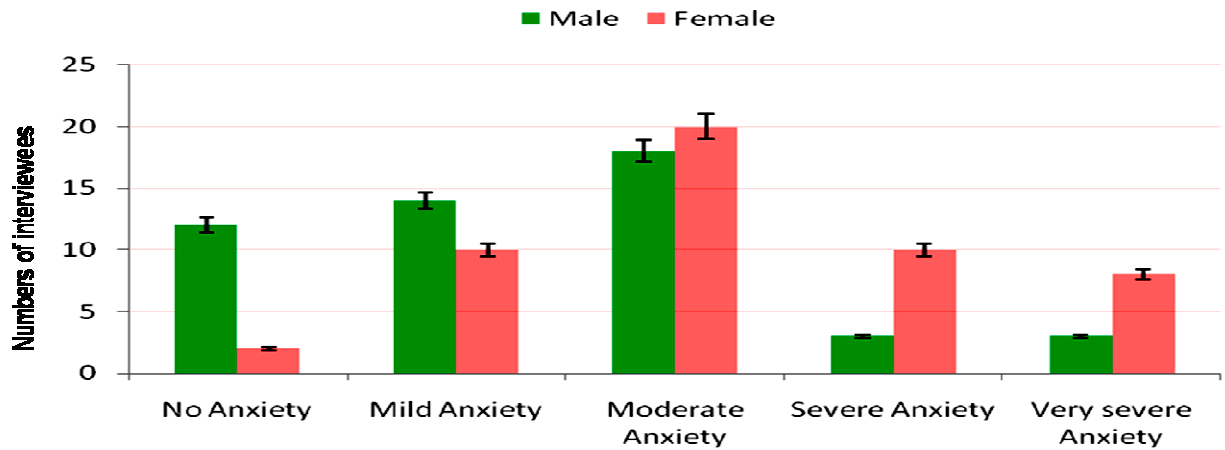
Age	Male	Female
<21 years	None	1
21-25 years	2	30
26-30 years	25	19
31-35 years	19	None
36-40 years	3	None
>41 years	1	None
<b>Average age</b>	30.64 years	25.2 years

**Table.2** Educational status of the interviewees

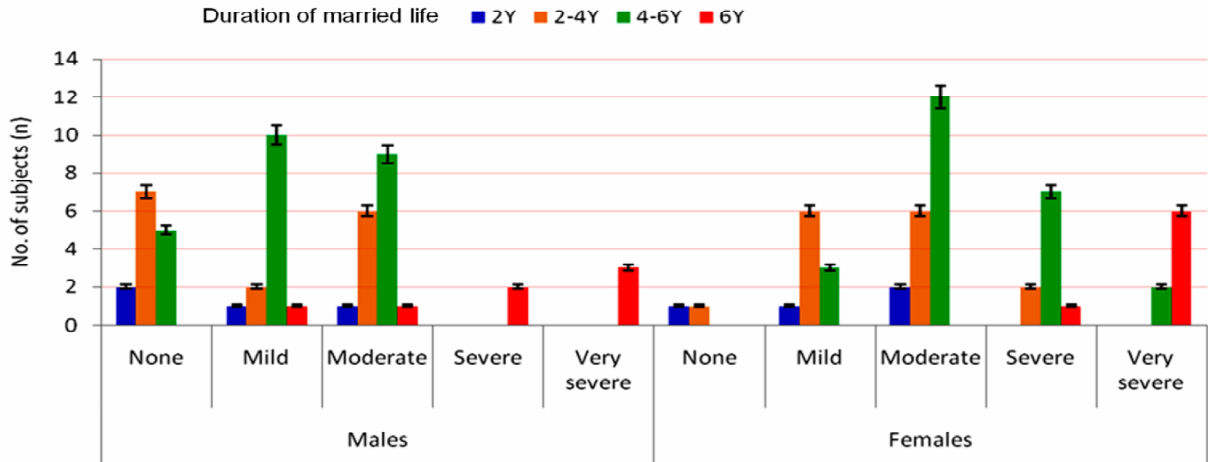
Educational status	Males	Females
Nil	2	19
<4 <sup>th</sup> standard	7	3
5 <sup>th</sup> - 7 <sup>th</sup> standard	5	5
8 <sup>th</sup> - 10 <sup>th</sup> standard	4	5
10 <sup>th</sup> standard +	15	8
Graduation and +	15	10
Professional	2	-



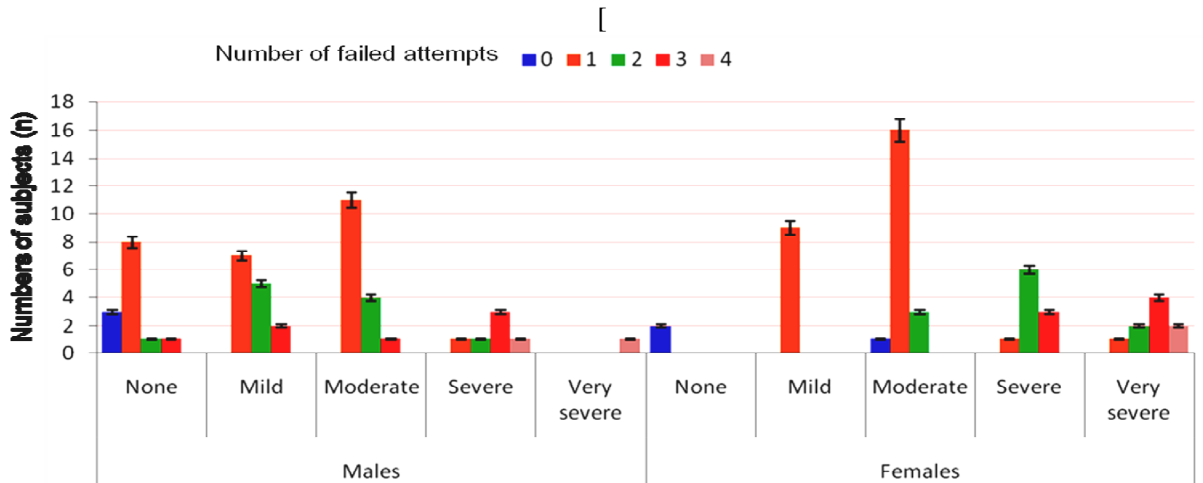
**Fig.1** Duration of married life and diagnosis of infertility



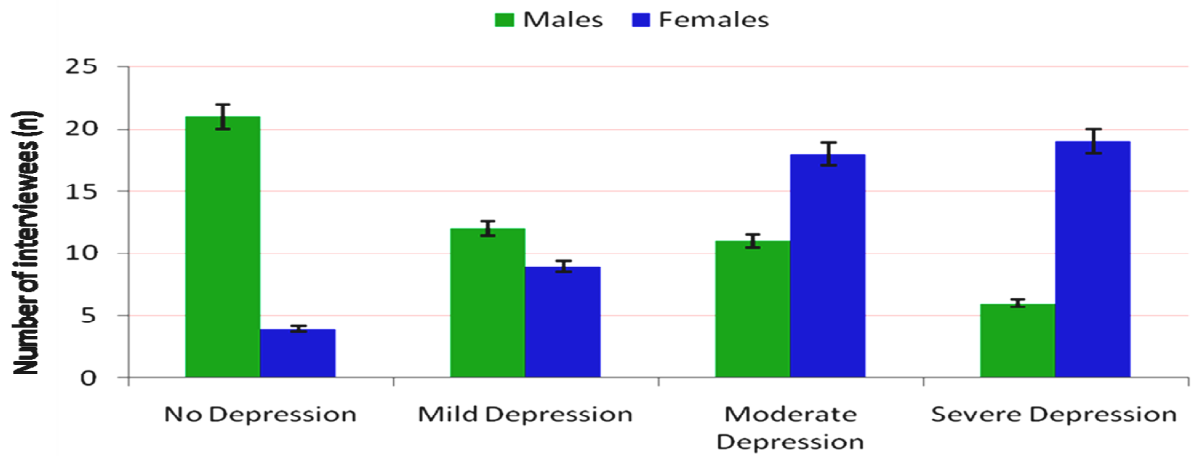
**Fig.2** Results of the Hamilton Anxiety Rating Scale



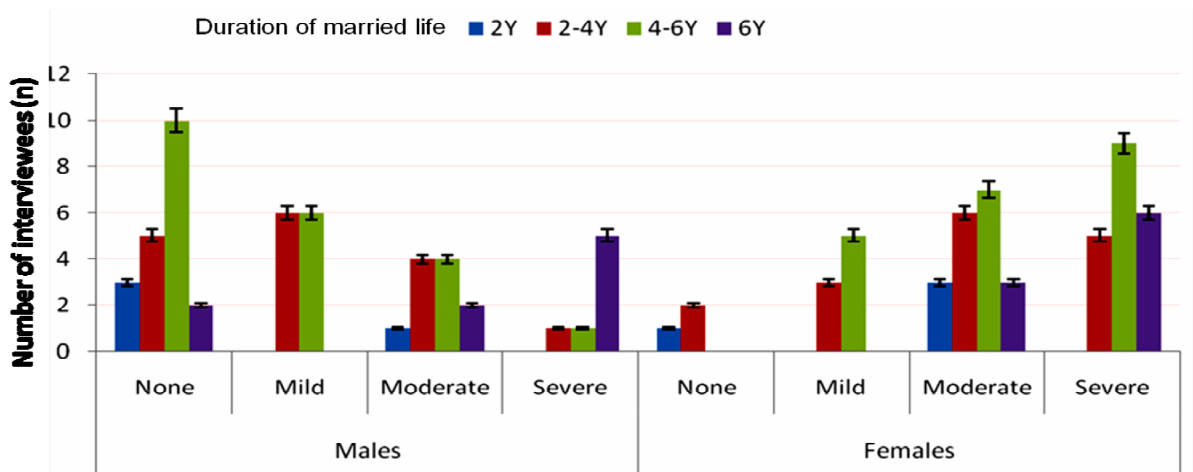
**Fig.3** Correlating the results of the Hamilton Anxiety Rating Scale with the duration of married life (and hence the duration of infertility)



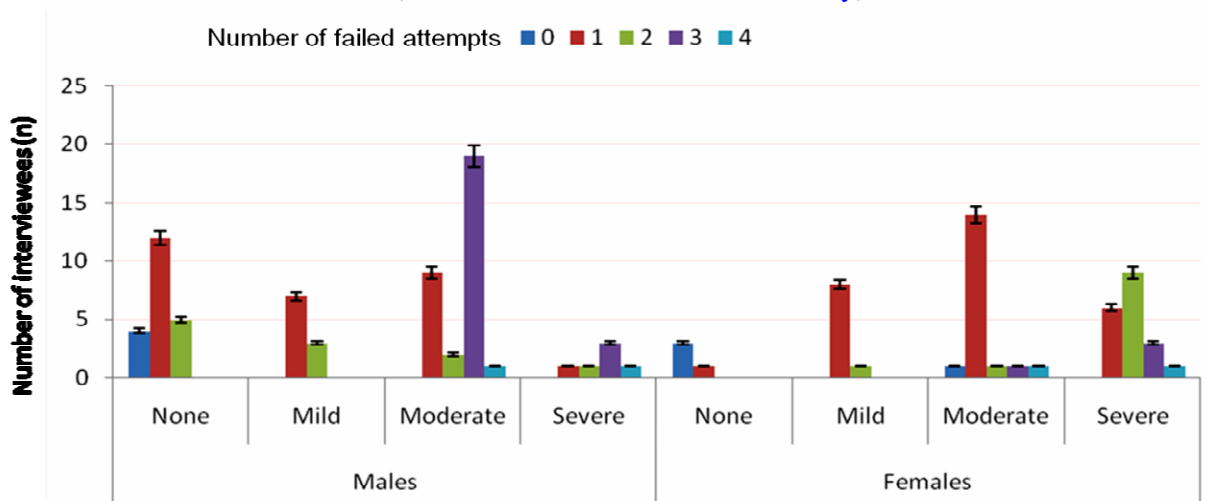
**Fig. 4** Correlating the results of the Hamilton Anxiety Rating Scale with the number of failed attempts at infertility treatment



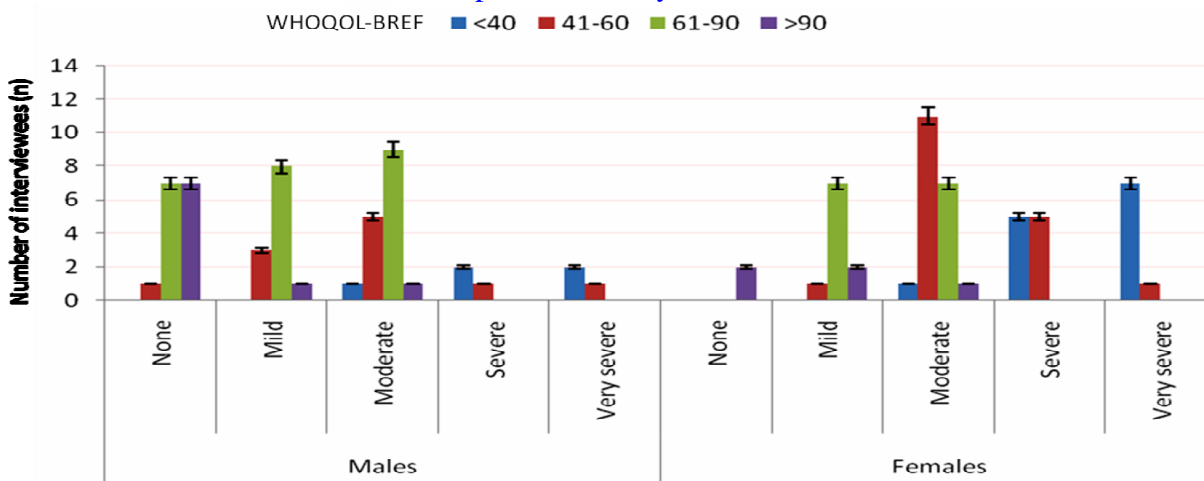
**Fig. 5** Results on administration of the Beck Depression Inventory



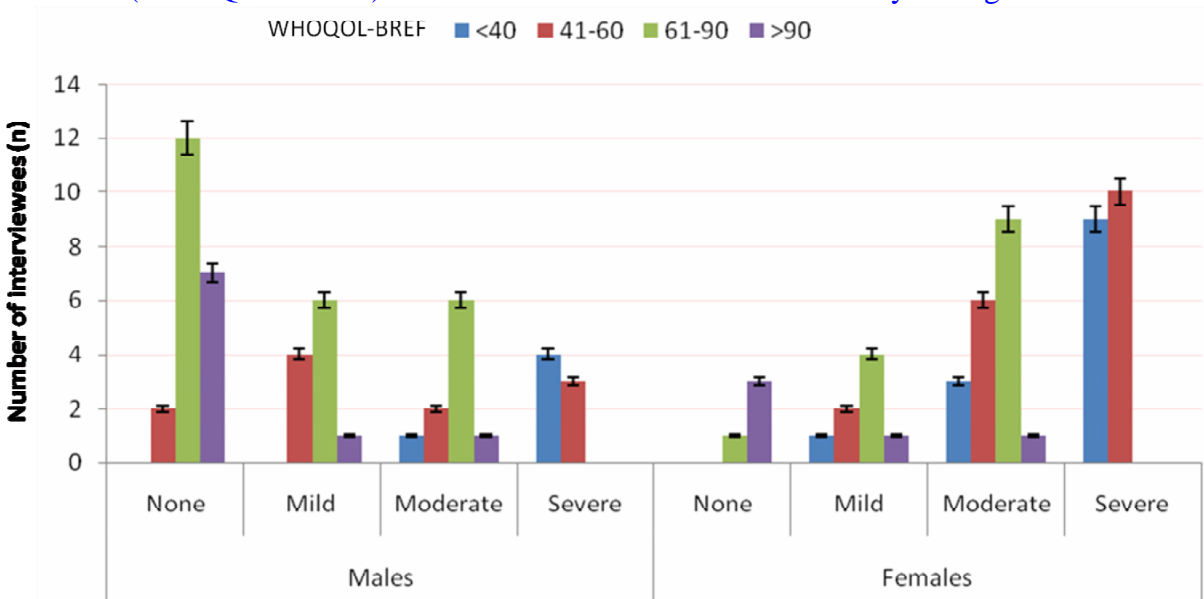
**Fig. 6** Correlating the results of the Beck Depression Inventory with the duration of married life (and hence the duration of infertility)



**Fig. 7** Correlating the results of the Beck Depression Inventory with the number of failed attempts at infertility treatment



**Fig. 8** Correlating the results of the World Health Organization Quality of Life Index (WHOQOL-BREF) with the results of the Hamilton Anxiety Rating Scale



**Fig. 9** Correlating the results of the World Health Organization Quality of Life Index (WHOQOL-BREF) with the results of The Beck Depression Inventory

It is also sometimes called the Hamilton anxiety Rating Scale (HARS). It is used to assess the severity of anxiety symptoms in children and adults as an outcomes measure when assessing the impact of anti anxiety medications, therapies, and treatments - as a standard measure of anxiety in evaluations of psychotropic drugs; it can be administered prior to medication being

started and then again during follow-up visits, so that medications dosage can be changed in part based on the patient's test score to provide measures of overall anxiety, psychic anxiety (mental agitation and psychological distress), and somatic anxiety (physical complaints related to anxiety).

The total anxiety score ranges from 0 to 56. The seven psychic anxiety items elicit a psychic anxiety score that ranges from 0 to 28. The remaining seven items yield a somatic anxiety score that also ranges from 0 to 28.

Correlating the results of the Hamilton Anxiety Rating Scale with the number of failed attempts at infertility treatment, it was noticed that the severity of anxiety was directly proportional to the number of failed attempts-46% of the males and 76% of the females who attempted infertility treatment at least once had increased prevalence of anxiety.

World Health Organization (WHO) defines Quality of life as an individual's perception of their position in life in the context of, the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. WHO, with the aid of 15 collaborating centers around the world, has therefore developed two instruments for measuring quality of life (the WHOQOL-100 and the WHOQOL-BREF), that can be used in a variety of cultural settings whilst allowing the results from different populations and countries to be compared.

Likewise patients with a lower Max Hamilton Anxiety Rating had a better World Health Organization Quality of Life Index (WHOQOL-BREF), this was also in correlation with the duration after diagnosis of infertility was made and failed attempts at infertility treatments.

Traditionally it has been believed that infertile women experienced greater levels of distress, depression and anxiety as compared to infertile male, especially when there was a diagnosis of female-factor infertility. Conversely men with male –

factor infertility have been reported to experience significant levels of depression, social isolation and stigma, but were less likely to identify themselves as depressed or distressed and seek medical assistance as compared to an infertile women (Hardy et al., 2002; Berg et al., 1991; Connolly et al., 1987; Daniluk, 1997).

In another recent landmark article published in *Human reproduction* (Peronace et al. 2007). This study challenges the long –held traditional notions that infertile men are not as emotionally vulnerable to psychopathological morbidity in response to infertility (regardless of diagnosis) as compared to an infertile women- in fact the rates of psychopathological responses are comparable if not equal.

Women with a history of depression are twice as likely to develop a recurrence during infertility, reproductive treatment, and pregnancy and in the post-partum period; they may often experience greater distress experiencing infertility treatment than the loss of a dear one or divorce. Depression in infertile women is as common as that seen in other females with chronic diseases (Dammar et al., 1992).

Interpersonal therapy and cognitive behavioral therapy are the two forms of psychotherapy shown to be helpful in the treatment of mild to moderate depression (Levenson et al., 2007). A psychiatric plan must be drawn with the women, her partner, obstetrician and her reproductive endocrinologist. The patient should be made aware of the risks an increased risk of congenital malformations associated with the usage of mood stabilizers- the risks of maintaining the patient on the medications through infertility treatment, pregnancy and post- partum period must be weighed

carefully against the risk of withdrawing the medications (Baram et al., 1998).

The prevalence of mild to moderate depression was about 66% and for moderate to severe was about 37% in the recruited males as opposed to 26% and 74% in the recruited females.

The prevalence of depression is directly proportional to the duration of married life and hence the duration after the diagnosis of infertility is made; this was about 34% in males. Both the sexes till about 4 years of marriage going upto 66% in the next two years; in females it was 28% after the first four years of marriage and went upto 72% in the next two years.

The Beck Depression Inventory (BDI) was developed in 1979 by Beck, Rush, Shaw and Emery to assess the severity of depression. It is a 21-item survey and has been substantiated by a huge body of evidence. Each item has four response options ranging from zero to four with a higher rating indicating a more severe symptom of depression. The range of potential scores varies between 0 and 52.

It reliably measures the severity of depression in non-psychiatric samples, correlates highly with the clinical rating of depression and differentiates depression from anxiety.

Correlating the results of the Beck Depression Inventory with number of failed attempts at infertility treatment, it was noticed that the severity of depression was directly proportional to the number of failed attempts-38% of the males and 74% of the females who attempted infertility treatment at least once had increased prevalence of anxiety.

Likewise patients with a lower Beck Depression Inventory had a better World

Health Organization Quality of Life Index, this was also in correlation with the duration after diagnosis of infertility was made and failed attempts at infertility treatment.

## References

- Agarwal PK and Sayeed U. 2002 Spatial variation and socio-economic and demographic correlates of childlessness in India. National family health Survey Data-2 (NHFS-@). [Unpublished] "Socio-Medical Perspective on Childlessness", Panaji, India, September 13: 23-27.
- Baram D, Tourtelot E, Mueschler E, et al. 1998 Psychological adjustment following unsuccessful in vitro fertilization. *J Psychosom Obstet Gynaecol* 9:181-190.
- Beaurepaire J, Jones M, Theiring P et al. 1994 Psychological adjustment in infertility and its treatment: male and female responses at different stages of IVF/ET treatment. *J Psychosom Res* 38:229-240.
- Berg BJ, Wilson JF, Weingartner PJ. 1991 Psychological sequelae of infertility treatment: the role of gender and sex-role identification. *Soc Sci Med* 33:1071-1080.
- Burns LH. 2006 Sexual counseling: a comprehensive handbook for clinicians. 2<sup>nd</sup> edition. New York: Cambridge University Press 212-236.
- Connolly KJ, Edelman RJ, Cooke ID. 1987 Distress and marital problems associated with infertility. *J Reprod Infant Psychol* 5:49-57.
- Dammar AD, Broome AD, Zuttermeister PC, et al. 1992 The prevalence and predictability of depression in infertile women. *Fertil Steril* 58:1158-1163.
- Daniluk JC. 1997 Gender and infertility. In: Leiblum SR, editor. *Infertility: psychological issues and counseling strategies*. New York: John Wiley & Sons 103-125.

- Greil AL. 1997 infertility and psychological distress: a critical review of literature. *Soc sci Med* 45:1679-1704.
- Guerra D, Lliobera A, Veiga A, et al. 1998 Psychiatric morbidity in couples attending a fertile service. *Human Reprod* 13:1773-1776.
- Hardy A and Makuch MY. 2002 Gender, infertility and ART. In: Vayena E, Rowe P Griffin PD editors. *Current practices and controversies in assisted reproduction*. Geneva, Switzerland : WHO 272-280.
- Kolonoff-Cohen H, Chu E, Natarajan L, et al. 2001 A prospective study of stress among women undergoing in vitro fertilization or gametocyte intra-fallopian transfer. *Fertile Steril* 76:75-87.
- Lanzi A, Lombardo F, Salacone P., et al. 2003 Stress, sexual dysfunction and male infertility. *J Endocrinol Invest* 25:72-76.
- Lapane KL, Zierler S, Losater TM, et al. 1995 A history of depressive symptoms associated with increased risk of infertility in women? *Psychosom Med* 57:509-513.
- Levenson JL, Gitlin DF, Crone C. 2007 Psychiatric aspects of infertility and infertility treatments. *PCNA* 30:689-710.
- McDaniel SH, Hepworth J, Doherty W. 1992 Medical family therapy with couples facing infertility. *Am J Family Ther* 20:101-122.
- Menning BE. 1997 *Infertility: the guide to the childless couple*. New Jersey: Prentice-Hall, Inc.
- Michael FS, John M, Harris RA, et al. 2006 *The pharmacological Basis of Therapeutics* 11.
- Miller IJ. 1994 Psychiatric medication during pregnancy: understanding and minimizing the risk. *Psychiatr Ann* 24:69-75.
- Morin-Davy L. 1998 Infertility: a couple's lived experiences of hope and spirit. *Dissert Abs Intl* 58:4462.
- Newton CR, Hearn MT, Yuzpee AA. 1990 Psychological assessment and follow-up after in vitro fertilization: assessing the impact of failure. *Fertile Steril* 54:879-886.
- Newton CR, Sherrad W, Houle P. 1994 Comparing women for oocyte retrieval. *Fertile Steril* S27.
- Newton CR, Sherrard MA, Glavac I. 1999 the fertility problem inventory: measuring perceived infertility-related stress. *Fertil Steril* 72:54-62.
- Peronace L, Biovin J, Schmidt L. 2007 Patterns of suffering and social interactions in infertile men 12 months after unsuccessful therapy. *Human Reprod* 22:86.
- Shapiro CH. 1982 The impact of infertility on the marital relationship. *J Contemp Soc Work* 9:387-393.
- Storgaard L, Bonde JP, Ernst E, et al. 2003 does smoking during pregnancy affect son's sperm count? *Epidemiology* 14:278-286.
- The ESHRE Capri Workshop Group. 2006 Nutrition and reproductive in women. *Human Reprod Update* 12(3):193-207.
- Ulbrich PM, coyle AT, Coyle AT, Llabre MM. 1990 Involuntary childlessness and marital adjustment: his and hers. *J Sex and Mar Therapy* 16:147-158.
- Waylen AL, metwally M, jones GL, Wikinson AJ, Ledger WL. 2008 Effects of cigarette smoking upon clinical outcomes of assisted reproduction: a meta-analysis. *Human Reprod Update* 46:1-13.
- Williams KE and Zapper LN. 2006 Psychopathology and pharmacology in the infertile patient. In: Covington SN, Burns LN, editors. *Infertility counseling: a comprehensive handbook for clinicians*. 2<sup>nd</sup> edition. New York: Cambridge University Press 97-116.