

Depression Among Infertile And Fertile women At A Tertiary Centre- A Comparative Study

Dr. Neha Garg¹, Dr. Navratan Suthar², Dr. Manu Goyal³,
Dr. Rakesh Pratap Khuteta⁴

^{1,3}(Department of obstetrics & Gynecology, All India Institute of Medical Sciences, Jodhpur, India)

²(Department of Psychiatry, All India Institute of Medical Sciences, Jodhpur, India)

⁴(Department of obstetrics & Gynecology, SMS Medical College, Jaipur, India)

Abstract

Objective(s): To determine the prevalence and severity of depression in infertile women and to establish the relationship of duration of infertility with depression amongst them as compared with fertile women.

Method: in this comparative cross-sectional study, 100 females with primary infertility and 100 healthy fertile females were assessed for depression. Subjects were completed a demographic form and self-administered questionnaire –Beck Depression Inventory (BDI). Mean BDI score measured and its relation with duration of infertility along with prevalence and severity of depression in defined population studied.

Result(s): 41% of the infertile women scored in the “depressed” range, in comparison with 19% of the fertile subjects, on the BDI ($p=0.005$). Infertile women had significantly higher depression scores (Mean BDI= 9.98) as compared to the fertile women (Mean BDI= 5.212) ($p=0.000$). Women with infertility duration between 3 to 4 years had higher BDI score as compared to women with infertility duration of < 3 year and > 6 year ($p=0.476$).

Conclusion(s): There was high prevalence and severity of depression among infertile females which was correlated with duration of infertility. So there is a need to implement Psychological interventions for the complete health of the couple.

Keywords: Depression, Severity, Infertile women, BDI, Psychological interventions

I. Introduction

Infertility is the failure to conceive after a year of frequent, unprotected intercourse in a couple of reproductive age group [1]. The WHO estimates that 8–12% of couples around the world, experience difficulty in conceiving a child [2]. Approximately one in five (20%) couples experience infertility. Prevalence rates show that 40% of infertility is primarily attributable to female factors (e.g., tubal factors, endometriosis), 40% is attributable to male factors (e.g., low sperm count, impotence), and the remaining 20% is attributable to an interaction between the two partners [3]. Almost 21% of the female population experience major depression in their life [4]. Twice as many females experience some form of depression when compared to males [5]. In female, depression has higher risk on first onset, can last longer, and often recur [6-7]. There is established relationship between life stress and depression [8].

Infertility is a stressful event in life of human being. In a comparison to patients with other medical conditions, psychological symptoms associated with infertility are similar to those related to cancer, hypertension, and cardiac rehabilitation [9]. Infertile women, in comparison with fertile group, showed higher scores on the depression (40.8%) and anxiety (86.6%) scales [10-11]. Grief reactions are common among infertile women, and the mourning process is considered important in order to resolve the infertility crisis. However, in certain women these normal grief reactions are sustained and turn into pathological grief, which is largely consistent with the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th edition) definition of major depression [12]. Depressive disorders are also associated with increased reporting of physical symptoms such as headache, fatigue, back pain and bowel complaints. Our understanding of the relationship between psychological issues and infertility has undergone major shift in emphasis over the past 10 years, and distress is now seen as the result rather than the cause of infertility.

Screening depression is a difficult task. The reason being is that there are numerous questionnaires for interpretation of psychological symptoms. Beck Depression Inventory (BDI) was developed and revised by Beck et al [13-14]. This 21-item self-report questionnaire was intended to assess the severity of current depressive symptomatology in the psychiatric population. Each item of the inventory describes a specific behavioral, emotional and somatic manifestation of depression. The 21 items cover sadness, pessimism, and sense of failure, dissatisfaction, guilt, expectation of punishment, self-dislike, self accusations, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work retardation, insomnia,

fatigability, anorexia, weight loss, somatic preoccupation and loss of libido. Scores on each item can range from 0, indicating no depressive symptomatology, to 3, indicating a severe level of symptomatology. Total scale scores can thus range from 0 to 63. It requires minimal time and no special training to administer. The BDI has been used, extensively, in clinical diagnosis and research [13-14]. Versions in other languages such as hindi, are confirmed and used, as well.

Although depression has been described as a common consequence of infertility, little has been documented concerning its prevalence and severity. Previous research has not documented a clear relationship between depression and infertility, possibly because of a lack of reporting of the numbers who fall outside of the normal range on depression inventories or because the psychological impact of infertility differs from other medical conditions. Previous research has uniformly failed to include a matched fertile sample.

In the present study, the prevalence and severity of depression in infertile women was explored and compared with a group of healthy fertile women to determine whether or not infertile women have higher depression scores than fertile women and if the severity of depression scores varied with the duration of infertility. The results of this study should help identify status of depression among infertile women and enhance development of psychological programs for prevention and treatment.

II. Materials And Methods

2.1 Subjects

The infertile subjects were recruited for this study before a scheduled visit with their infertility specialists. 100 infertile women were enrolled to participate in the study and also 100 fertile healthy women of reproductive age group with no major medical, surgical or gynaecological illness awaiting a routine gynaecological examination or family planning clinic were recruited for study.

2.2 Materials

The scale used in this study was the Beck Depression Inventory (BDI). The BDI measures the intensity of depression and has high reliability and validity. This scale have been successfully used cross-culturally and with a wide variety of ages and ethnic backgrounds. The BDI is reliable when self-administered. A demographic form was created for this study. It included questions about age, current day of cycle, duration of infertility, length of infertility treatment, types of current or past treatment, infertility diagnosis, and history of current or pre-infertility psychotherapy. The fertile subjects completed a similar form that omitted the specific infertility-related questions. Total participation time per subject was approximately 15 to 20 minutes, which included providing verbal consent, completing the BDI and the demographic form.

2.3 Methods

Potential subjects were approached as they waited for a scheduled appointment. The purpose and procedures were explained. After agreed to participate, they read the consent form, which was approved by the institutional ethics committee before the start of the study. After that each subject completed the demographic form and the BDI. Cutoff scores of 9 for the BDI was utilized to indicate the presence of depressive symptoms, according to the respective test guidelines. In addition, the severity of symptoms was assessed on the BDI according to the test manual guidelines as follows: scores of 10 to 15 were classified as mild, 16 to 23 as moderate, and a score of 24 or above as severe depression.

The data was analysed statistically. Quantitative data was summarized in mean and standard deviation. Qualitative data was summarized in proportion and analysed using Chi-square test. A p value of <0.05 was considered statistically significant. All the statistical analysis was done keeping power of study at 80% and 95% confidence level.

III. Results

A total of 200 women were evaluated in two groups of infertile and fertile females with 100 women in each group. Forty-one percent (41%) of the infertile women scored in the “depressed” range on the BDI (score > 9) compared with 19% of the fertile women, a statistically significant difference ($p=0.005$). Twenty-one percent (21%) of the infertile women had mild depression, 13% had moderate and 7% had severe depression. Eighteen percent (18%) of the fertile subjects who scored in the depressed range on the BDI had mild to moderate scores and only 1% had severe depression (“Table 1” & “Fig. 1”). Forty eight percent (48%) of infertile females in 21-25 yrs, 34% in 26-30 yrs, 41% in 31-35 yrs, and 50% in 36-40 years age group were found to be suffering from depression. Severe depression was found to be more in females with low socio economic status (18%) as compared to those with high socio economic status. Similarly percentage of infertile women with severe depression was more in housewives (8%) than working women (4%), where as it was only 1.1% in fertile housewives group. and more in rural area (11.1%) than urban (5.4%). We found that depression was more among females, when infertility was associated with male factor (40%) as compared to those with normal semen

parameters (20%) (“Table 2” & “Fig. 2”). There was nonlinear relationship between the duration of infertility and depression. Mean BDI score was maximum (11.17) when duration of infertility was 3-4 years followed by 10.15 when duration was 4-6 years. It decreased when duration was >6 years and < 3 years (“Table 3” & “Fig. 3”). It is evident from the scatter diagram that number of infertile women with depression was more falling in the category of 3-4 yrs of depression (“Fig. 4”).

IV. Discussion

In resource poor countries, children are highly valued for cultural, social and economic reasons; childlessness often creates huge problems for couples; especially for the women who are generally blamed for the infertility. The stigma of childlessness is so great that infertile women are socially isolated and neglected even by the people who are suppose to support them such as their husbands and extended family. Motherhood is often the only way for women to enhance their status within their family and community. These societal pressures may have some psychosocial impact on the infertile women in the society. The purpose of the present study was to compare the prevalence and severity of depression among fertile and infertile females and to correlate the severity of depression score with the duration of infertility. The findings of a high depression prevalence of 41% with mean depression score of 9.98 among the infertile women in the present study buttresses the psychological challenges that childless women are confronted with. This finding is consistent with the work of Ramezanzadeh et al. [10] which showed a prevalence of 40.8% among infertile women in Iran. These findings were similar to some previous studies, carried out by Homaidan et al, Ashkani et al, Domar et al and Najmi et al [9,15,16,17]

The high prevalence of depression in the present study could be attributable to the societal and family demand on women to have their own children because children are seen as a form of social security in old age and as a means of perpetuating the family lineage. The prevalence of psychiatric morbidity, specially depression in infertile patients have been assessed in several countries. Jones et al 1993 [18] in his study, found that, there was mild to moderate depression in 28.3% of infertile women, moderate to severe depression in 7.2% and 1.2% had most severe depression based on BDI. Comparing these results with our study the overall prevalence and severity of depression among the infertile females has risen from 7.2% to 13% cases of moderate depression and 1.2% to 7% case of severe depression. Also the number of depressive females was statistically significant among cases than controls ($p=0.005$). Mean BDI score of infertile females has increase from 8.31 (normal range) to 9.98 (mild depression). This suggests the overall increment in depressive score of infertile females.

Oddsens et al 1999 [19] reported that 24.9% of the infertile women had depressive disorders. Prevalence of depressive disorder was 33% (Hong Kong), 32 % (Scotland) in infertile women [20]. In our study there was no significant relationship was found between age and education with rate of depression. According to Beutel et al [21] age and education level have no significant relationship with depression. Another study by Domar et al [11] showed that there was positive correlation between them. In our study, depression was found more in homemakers than women who are having a job but the difference was not significant. Facchinetti F et al [22] found that having a job may reduce stress. It seems that being preoccupied with other jobs decreases psychological stress. Based on previous researches [23], infertile women showed higher rates of psychiatric symptoms than their partners. Women were necessarily more deeply involved in treatment procedures and it is expected for them to be more affected.

The results of this study justify the nonlinear relationship between duration of infertility and depression as observed in previous studies also. The 3rd year of trying to conceive was associated with the highest depression scores; as they are optimistic during the first 1 to 2 years then begin to feel hopeless and finally start to resolve their feelings and move on to other alternatives such as adoption or “childfree” living. On application of ANOVA test, mean BDI score with respect to duration of infertility was not found significantly different ($p=0.476$).

The results of this analysis could highlight an important and growing mental disorder among infertile couples that cannot be ignored. Depression, as a major mental disorder, should be the focus of special attention by gynaecologists, who manage infertile couples, as policy makers, who plan preventive programs. However, many individual, social, and cultural characteristics play important role in both occurrence and exacerbation of depression especially among infertile couples. The media should educate people about infertility so that there will be less pressure on infertile couples. The media should make family members of infertile women aware of the help and support they can give in order to decrease mental stress.

V. Conclusion

Depression is more common and severe in infertile women with duration of infertility affecting the severity of depression. Findings of the study would be useful for parents, counsellors, psychiatrists, social workers, policy makers, educationists and researchers to gain deeper understanding regarding emotional aspects of infertility and to cope with it. Therefore, it is desirable to establish psychological and psychiatric services in infertility treatment centres, which undoubtedly would facilitate the treatment and follow-up procedures in order

to reduce the psychological problems of infertile women and their families. Further studies with larger sample size may better explain the above relationship. The study was done in a limited area and therefore may not necessarily reflect the characteristics of the general population.

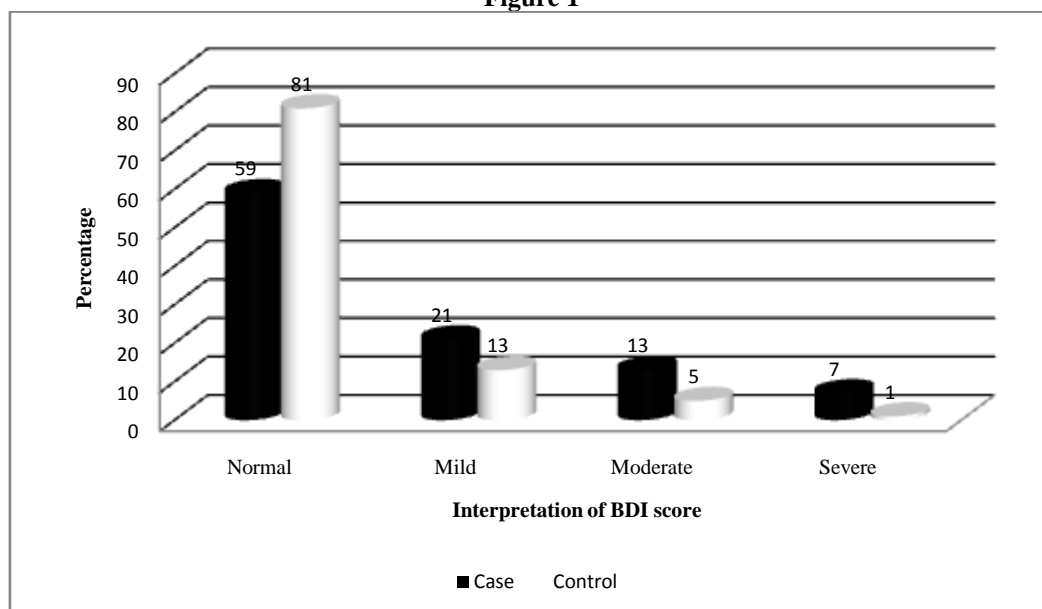
Future research could be carried out to find the other emotional aspects related to infertility like stress, distress, anger, sexual satisfaction, coping styles and socio cultural attitude towards infertility. A longitudinal research study can be undertaken to track changes in anxiety and depression of infertile couples and their coping strategies over time. Cross sectional designs that replicate this study using infertile population's not pursuing treatment or who recently completed treatments can be undertaken which will allow researchers to more fully understand the relationship between infertility, anxiety, depression and marital satisfaction across the various phases of the infertility experience. Study can be extended to other socioeconomic categories and age-groups and comparative studies can also be conducted between rural and urban population.

Table 1
Distribution of patients according to their BDI score

Interpretation of BDI	Cases (n=100) .	Control (n=100) .	Total	
			No.	%
Normal (0-9)	59	81	140	70.00
Mild (10-15)	21	13	34	17.00
Moderate (16-23)	13	5	18	9.00
Severe (>23)	7	1	8	4.00
Total	100	100	200	100.00

Chi-Square = 13.395 with 3 Degrees of Freedom; P = 0.005

Figure 1

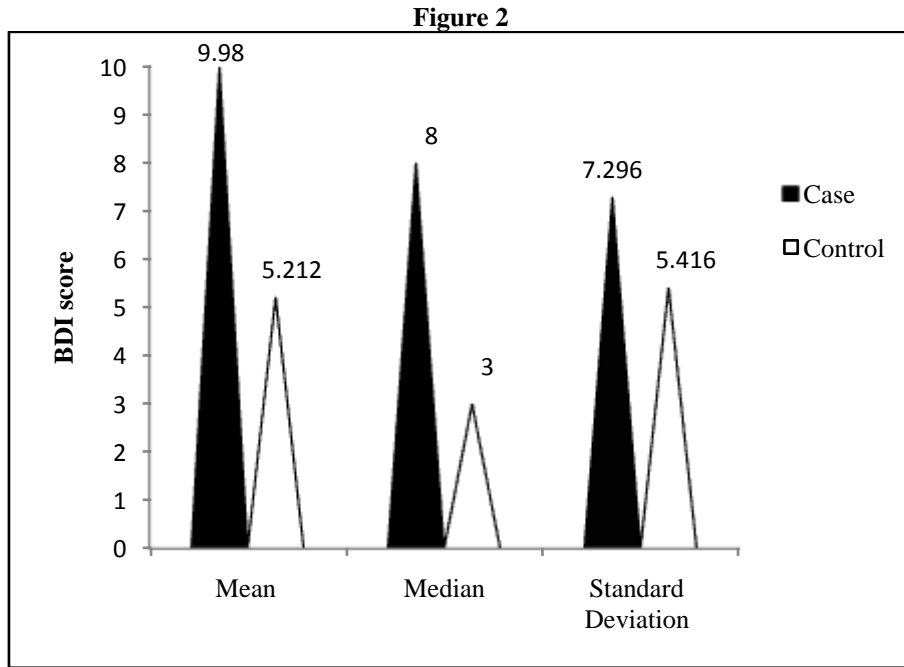


distribution of patients according to their BDI score interpretation

Table 2 Distribution Of Patients According To Their Mean, Median And Standard Deviation Of BDI Score

	N	Mean	Std Dev	Median	'p' Value*
Case	100	9.98	7.296	8	0.000
Control	100	5.212	5.416	3	

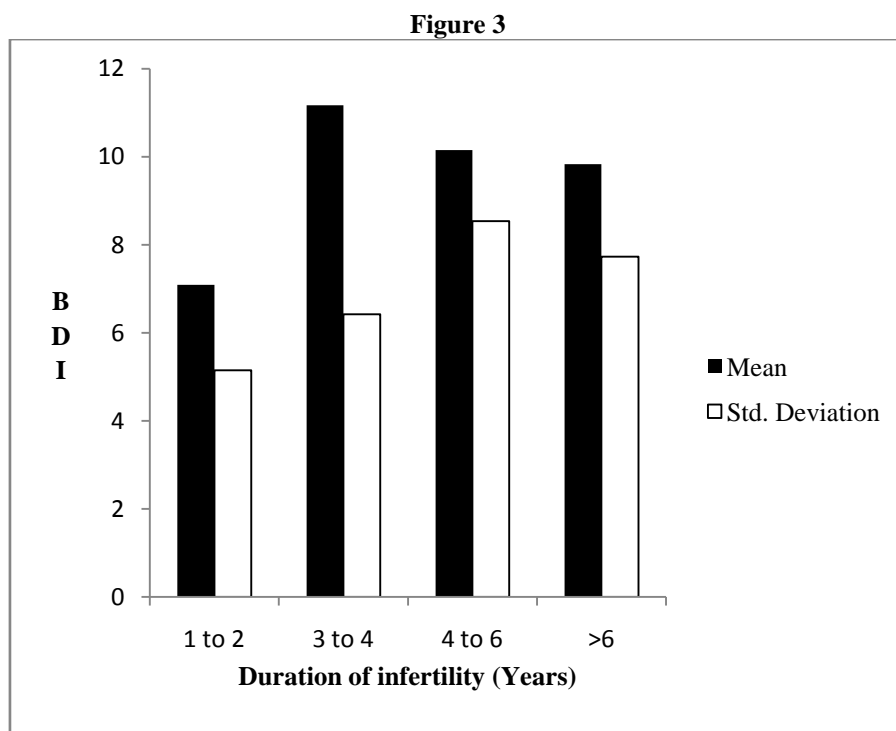
*Mann-Whitney Rank Sum Test



Distribution Of Patients According To Their Mean, Median And Standard Deviation Of Bdi Score

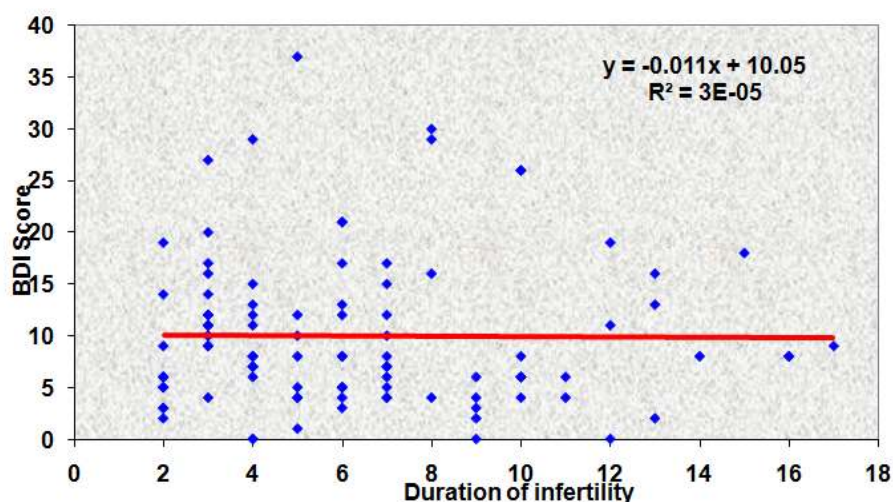
Table 3: Comparison of BDI Score with respect to duration of infertility

Duration of infertility (Years)	N	Mean	Std. Deviation	ANOVA	
				F	'p' Value
1-2	11	7.09	5.15		
3-4	29	11.17	6.42		
4-6	20	10.15	8.54		
>6	40	9.83	7.73		
Total	100	9.98	7.30	0.839	0.476



Comparison Of BDI Score With Respect To Duration Of Infertility

Figure 4



Comparison Of Bdi Score With Respect To Duration Of Infertility

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