

## Comparing depression in fertile and infertile couples

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### ABSTRACT

Need to have child is an inherent needs in all humans. Infertile couples are experiencing whit serious psychological problems such as depression, due to common social reactions. This has a significant influence on all aspects of their lives. In this study, depression rates in infertile couples and also comparing depression in fertile and infertile couples were studied to simple sampling (available) on 60 fertile and 60 infertile women in Isfahan fertility and infertility center. Data were collected by using the Beck Depression Inventory (BDI). Mean comparison of independent groups was analysis statistical by using the t test and variance analysis. Results showed that the mean and standard deviation in the infertile group was 21.3 and 9.41, and mean and standard deviation in the fertile group was 12.73 and 8.34 respectively. There was a significant difference between two groups in scores of depression. According to the results approximately 66% of infertile couples had clinical depression, which had require consultation with a psychiatrist. As a result, presence of clinical psychologist and psychiatrist seem to be necessary in centers in diagnosis and treatment of infertility.

**KEYWORDS:** Infertile, fertile, depression, psychologist.

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### INTRODUCTION

Fertility phenomenon is a physiological process in living organisms that in human in addition to physiological aspects has social and psychological dimensions. Although many factors such as cultural, social and economic have effects on the lives, and resulting pregnancy and child growth has been costly and problematic in recent years, but pregnancy is still a major event in the lives of many people. Women often know childbirth as their personality stabilizer (Kazandi *et al.*, 2011; Alice, 2003), also when a woman knows her as complete that be fertile and have children. She knows her biological, psychological and social success in function to her ability to breed children largely, and feel inadequate and depressed if not be fertilized (Wilson and Kopitzke, 2002; Domar *et al.*, 1992; Karahasanoglu *et al.*, 1972). Not fertility and pregnancy during a specified period is defined as infertility. When a person is infertile that symptoms of fertility in her is not clear after 12 months of intercourse or insemination. Even if a woman becomes pregnant and has no power to maintain it, is infertile (Alice, 2003). As regards expected to birth a child during cohabitation is one of the important reasons for every couples, when couples are deprived to get important product of their common life the fact is birth of a child, not only the concept of their lives, but also concept of relationship between them is questioned. In fact, infertility is a complex crisis in life that is threatening and stress in terms of psychological (Ramezanzadeh *et al.*, 2004; Matsubayashi *et al.*, 2001). Infertile couples in addition to being are faced with various physically problems, also faced with many economically and socially problems, such as: anxiety, depression, difficulty in interpersonal relationships, curiosity, and people around pressure, failure, suppressed aggression, humiliation, rejection, unconscious guilt, feeling jealous than women that have children, social isolation and low self-esteem (Ramazanzadeh *et al.*, 2009; Ozkan and Baysal, 2006; Ramazanzadeh and Abedinia, 2004; Wischmann *et al.*, 2001; Kopitzke *et al.*, 1991). Depression is known as a set of signs and symptoms psychological caused by infertility (Cwikel *et al.*, 2004). The prevalence of depression and low self-esteem in infertile patients is far more than fertile couples (Noorbala *et al.*, 2007; Andrews *et al.*, 1992). Currently, infertility and depression are both common problems that young and active population is more affected by it. The prevalence of depression is also mentioned 15% of the total population in the various statistics. On the one hand, one of every 6 couples is infertile, and is deprived of having children. Depression developing and increase the annual incidence will cause that depression in future years, be at the forefront of world health problems (Guz *et al.*, 2003; Greil, 1997). Infertile women in society are vulnerable to psychological and personality. No feeling in fertility ability and common social responses than this group in society is underlying psychological pressure (Ashkani *et al.*, 2006; Abbey *et al.*, 1992). In a survey conducted by Beaurepaire and colleagues (1994) results showed that there was 28.3% mild to moderate depression, 7.2% moderate to severe depression, and 1.2% major depression in infertile women based on Beck Depression Inventory. Also the findings showed that 40.8% depression and 86.8% anxiety in

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infertile women. Purpose of this study was finding depression in infertile patients and logical connection and statistical between infertility and depression on Isfahan fertility and infertility center patients.

**MATERIAL AND METHODS**

There were two independent samples and two subjects groups in this study, which were selected randomly from similar community or two communities. Independent groups have no influence on the selection of cases or subjects in other groups. These are two samples that are completely independent of each other group. Data analysis was same in both conditions. In this study, the statistical community was all infertile women (60 persons) that were referred to Isfahan fertility and infertility center for treatment in 2008, and all fertile women (60 persons ) that referred to Isfahan fertility and infertility center as the patient associate in the same year. Ages and education levels frequency of infertile subjects is shown in figure 1 and 2.

Tools for data collection included Beck Depression Inventory (BDI), which was presented to all subjects. Beck depression inventory is a short and easy tool to measure depression in clinical trials. Beck inventory is includes 21 symptoms of depression with 94 questions in 21 question groups. Classify the severity of depression on this scale is as table 1:

Table 1. Classify the severity of depression according to Beck Depression Inventory (BDI)

Rates of depression	Total Points
Natural	1-10
Slightly depressed	11-16
Require consultation with a psychiatrist	17-20
Relatively depressed	21-30
Severe depression	31-40
Too much depressed	More than 40

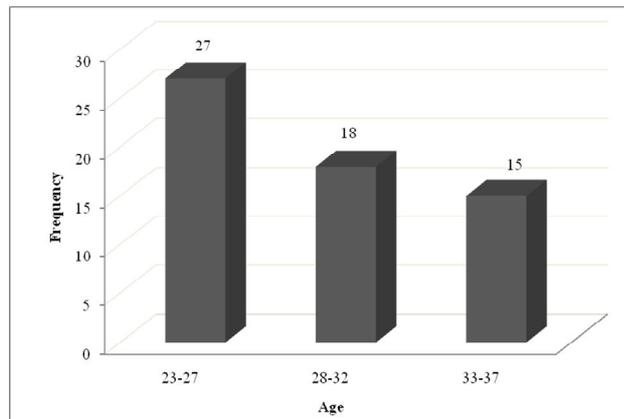


Figure 1. Age frequency of infertile subjects

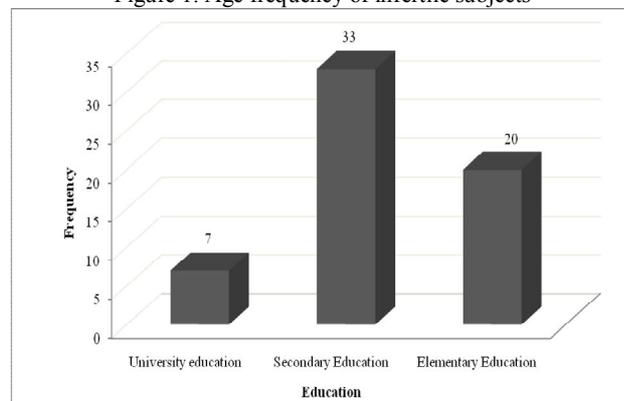


Figure 2. Education frequency of infertile subjects

The measure of Beck depression is one of the most popular and respected of psychological tests, and is applicable to all classes of society and social environment and not dependent on culture. 21 components were measured in this test the most important components include: Sad, pessimism, feeling defeated, dissatisfaction, guilt, self-loathing, self-abuse, withdrawal, indecision, fatigue, anorexia, changes the self concept, etc.

Beck depression test has 21 questions about how the subject has been feeling in the last week. Each question has a set of at least four possible answer choices, ranging in intensity. For example:

- (0) I do not feel sad.
- (1) I feel sad.
- (2) I am sad all the time and I can't snap out of it.
- (3) I am so sad or unhappy that I can't stand it.

When the test is scored, a value of 0 to 3 is assigned for each answer and then the total score is compared to a key to determine the depression's severity. Depression scores in fertile and infertile couples are shown in table 2 and 3.

Table 2. Depression scores infertile subjects

Subjects	Degree of depression						
1	15	16	19	31	20	46	15
2	30	17	20	32	13	47	16
3	23	18	13	33	16	48	38
4	20	19	33	34	10	49	41
5	9	20	37	35	20	50	26
6	16	21	19	36	19	51	17
7	8	22	8	37	40	52	7
8	18	23	25	38	18	53	30
9	26	24	5	39	29	54	12
10	14	25	17	40	23	55	18
11	21	26	18	41	30	56	5
12	37	27	34	42	14	57	28
13	20	28	11	43	17	58	19
14	35	29	29	44	10	59	42
15	26	30	29	45	19	60	15

Table 3. Depression scores fertile subjects

Subjects	Degree of depression						
1	8	16	2	31	16	46	16
2	16	17	30	32	29	47	9
3	10	18	10	33	8	48	12
4	19	19	14	34	25	49	7
5	6	20	5	35	11	50	14
6	28	21	25	36	8	51	18
7	9	22	9	37	19	52	8
8	15	23	12	38	9	53	41
9	3	24	1	39	14	54	5
10	20	25	5	40	10	55	12
11	10	26	17	41	1	56	33
12	5	27	4	42	6	57	6
13	11	28	24	43	13	58	22
14	7	29	13	44	11	59	6
15	16	30	7	45	4	60	10

Research hypotheses were analyzed by using inferential statistics, t-test and variance analysis. To calculate the ratio of t-test can be using the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sum x_1^2 + \sum x_2^2}{N_1 + N_2 - 2} - \left[ \frac{1}{N_1} + \frac{1}{N_2} \right]}}$$

In the above equation:  $N_1$  is number of the first group (infertile subjects),  $N_2$  is number of the second group (fertile subjects),  $\bar{x}_1$  is the first group average,  $\bar{x}_2$  is the second group average,  $\sum x_1^2$  is sum of squares of residuals in first groups, and  $\sum x_2^2$  is sum of squares of residuals in second groups.

Average score of depression in infertile couples is:

$$\bar{x}_1 = \frac{\sum x_1}{N_1} = \frac{1262}{60} = 21.03$$

Average score of depression in fertile couples is:

$$\bar{x}_2 = \frac{\sum x_2}{N_2} = \frac{764}{60} = 12.73$$

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\delta_1^2 + \delta_2^2}{N}}} \Rightarrow t = \frac{21.03 - 12.73}{\sqrt{\frac{(9.41)^2 + (8/34)^2}{60}}} = 5.11$$

Intermediate values used in calculations:

t = 5.11

df = 118

Standard error of difference = 1.623

By conventional criteria, this difference is considered to be extremely statistically significant. Confidence interval: The mean of first group minus second group equals 8.30. 95% confidence interval of this difference: From 5.09 to 11.51.

### RESULTS AND DISCUSSION

Result showed that there were significant differences between two groups in depression scores. The mean and standard deviation in the infertile group was 21.3 and 9.41, and mean and standard deviation in the fertile group was 12.73 and 8.34 respectively (Table 4). Thus there was a difference between fertile and infertile women in Isfahan fertility and infertility centre in terms of depression. About 40 subjects (66%) of infertile couples were suffering from depression (Table 5). These subjects were depressed at clinically which were requires to consult with psychiatrists and psychologists; so there must be a psychologist at the center of infertility.

Table 4. Comparing depression in fertile and infertile couples

Group	First groups (infertile subjects)	Second groups (fertile subjects)
Mean	21.3	12.73
SD	9.41	8.34
SEM	1.22	1.08
N	60	60

Table 5. Rates of depression in infertile and fertile couples

Rates of depression	Number of Subjects	
	Infertile couples	fertile couples
Natural	8	29
Slightly depressed	12	17
Require consultation with a psychiatrist	17	5
Relatively depressed	14	7
Severe depression	6	1
Too much depressed	3	1
Total subjects	60	60

### DISCUSSION

Infertility is one of the important problems in depression. Find predisposing factors for depression in infertile patients and screening patients at risk, and support of them can improve result of infertility treatment. Domar *et al.*, (1992) in their study reported depression in infertile couples was doubled than the fertile women. Anxiety and

depression are the main results of infertility. Many studies indicated that incidence of major depression is higher at infertile couples than fertile couples and it ranges 15-54%. Psychological distress caused by infertility at women was higher than men. Infertile women compared with infertile men have significantly higher trait anxiety levels (Sreshthaputra *et al.*, 2008; Greil *et al.*, 1997). Child bearing can be meaning of life and marriage for many women. Psychological distress in infertile couples is significantly higher than control group (Wischmann, 2005; Wilson and Kopitzke, 2002). Kazandi *et al.*, (2011) in their study reported the levels of anxiety of infertile women are higher significantly than fertile women. For many couples, infertility causes several serious social and psychological consequences such as, personal distress, reduced self-esteem and loss of correct partner relationship, these results differ in different cultures (Schmidt, 2009; Noorbala *et al.*, 2007). As a result, presence of clinical psychologist and psychiatrist seem to be necessary in centers in diagnosis and treatment of infertility.

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