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Infertility Related Stressors in Saudi Women Initiating In Vitro Fertilization (IVF)

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Abstract: *Infertility is a stressful experience, yet little is known about the specific issues confronting infertile women. In the present study, therefore,* ***the objective*** *of this study is to identify prevalence of stress of women going to infertility clinic in Riyadh.descriptive cross-section design was used,* ***Methods*** *.A convenient subject 150 women , the study conducted at king Fahd Medical City(KFMC) - Riyadh, in vitro fertilization clinic(IVF),* ***Tools*** *clients were interviewed individually using interview questionnaire sheet which formed by the researchers &composed of 2 parts ; The first one : is about the sociodemographic data as (age, Living Area, Accommodation, Job, Education, Family income, ..etc.). In the second part, DASS scale is a 42-item self-report instrument designed to measure the three related negative emotional states of depression, anxiety and tension/stress.in the current study we adopt DASS(STRESS)* ***Results****The study revealed high level of stress among studied subjects , also certain factors were noticed to be a predictor of stress as : age, family income , frequency of pregnancies and numbers of abortion . The researchers recommended that Psychological support should be a part of the medical treatment process, to improve mental health and quality of life among IVF women.*

Key words: *IVF, Infertility.DASS.*

I. Introduction

Child birth is considered as a major component of human life , especially in Arabic region , most men and women take parenthood for granted and look forward to it (Sohrabvand&Jafarabadi 2005).A couple is generally considered clinically infertile when pregnancy has not occurs after at least one year of regular unprotected sexual activity (**Bovin et all 2007**).

Infertility is considered as one of major health problem that arises at the last decade world wide . It is basically defined as the inability to conceive a baby (**Larsen 2005**).In other ward , it is the inability of one of the couple or both to contribute to conception , both male and female can be infertile for many reasons (Dubey& Singh 2014). In spite of this fact it is found that female are more prone to psychological stress than male , she is the one who is usually blamed from the family and society , is the one who usually face the stigma of being infertile (**Niaz& Hassan**).

Moreover, in Saudi Arabia infertility is a social onus for women who are expected to have children early in their marital life . Women without children often feel incomplete and this results in pressure from their families and society this leading to many psychological problems (Alhumidan2011).

In Vitro Fertilization (IVF)is the last restore for infertile women who fail in natural conception , ovulation induction , and intrauterine insemination .The average success rate of(IVF) was 35.3% for women less than 35 years old (**Center for diseases control and prevention (2009**)

In Vitro Fertilization treatment has many sources of stress , it can be related to the threat of being infertile and loss of hope , another source is the treatment itself as: coast, daily injections , blood draws and possibility of failure at any of the various phases .another source is the risk of spontaneous abortion and finally the most stressful source is the stage of pregnancy test (Kim et al. 2014) .

During the period of (IVF) treatment the women are occupied with uncertainty , burden , blame and vigorous desire for pregnancy .If the (IVF) failed, the infertile women experience severe emotional and relational changes and feel great losing hope for pregnancy (An et al 2013) .

Studies investigating the effects of psychological influences over reproduction have prominently dealt with the negative influence of psychological stress which is popularly believed to have a direct negative effect in infertility treatment (Ziag et all 2012) .

So , which comes first ? the stress of being unable to fulfill the need of parenthood will negatively affect the reproduction which will lead to additional infertility ,it is a closed cycle .So , it is very important to

pay attention to the psychological state of the infertile women as well as the attention paid to the pathological state of the that women during (IVF) treatment .

II. Aim of the study

The aim of this study was to assess the level of stress that the infertile women experience during IVF treatment This aim
achieved through:
(1) Assessment of the exposure to stress
(2) Identification of different levels of stress
(3) Correlatebetween exposure to stress, sociodemographic and gynecological factors .

III. Research methodology

Design: An analytic cross-section design was followed in this study.
Subjects 150 women non randomly select from group of women with the same characteristic come to infertility clinic from January till the end of May 2014 ,the women's selected accidental/ convenience.
Setting: the study was conducted in king FahadMedical City(KFMC) - Riyadh, in vitro fertilization clinic(IVF)
Tools and data collection.
The tool of the current study composed of two parts :
The first part : is about the sociodemographic which character the sampling maser of (age, Living Area, Accommodation, Job, Education, Family income, Family type, Live children, No. of pregnancy, No abortions, No. of IVF and Years trying to be pregnant)
The secondpart : DASS, the Depression Anxiety Stress Scales,[11] is made up of 42 self-report items to be completed over five to ten minutes, each reflecting a negative emotional symptom.[12] Each of these is rated on a four-point Likert scale of frequency or severity of the participants' experiences over the last week with the intention of emphasizing states over traits. These scores ranged from 0, meaning that the client believed the item "did not apply to them at all", to 3 meaning that the client considered the item to "apply to them very much, or most of the time".
DASS STRESSscales composed of 14 items, divided into subscales of 2-5 items with similar content. In the current study, we adopt stress subscale .
Regarding Stress subscale which composed of 14 Items namely 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, 39.which quantifies the difficulty in relaxing, nervous arousal and being easily upset or agitated or irritable. The respondents rate the extent to which they have experienced the symptoms over the previous week on a four-point rating scale. The sum of scores obtained from the 14 items in scale and the scale severity is **interpreted as show:**

Level of stress	Grades
Normal	0-14
Mild	15-18
Moderate stress	19-25
Sever stress	26-33
Extremely sever	34+

Internal consistency for stress subscale are typically high (egCronbach's α of 0.90 to 0.95 for DASS-Stress **(Lovibond 1995,Brown et al 1997, Antonyet al 1998, Clara 2001, Page 2007**. There is good evidence that the scales are stable over time**Brown et al 1997**
Statistical Methods Used inData Analysis
The researcher, using the statistical package for social sciences, (SPSS) version (17) as percentages and arithmetic means to describe the trends of the cases and the study variables.
Pearson's correlation*:* The researcher conducted the Bivariate Correlations procedure, which computes Pearson's correlation coefficient, with their significance levels. Since correlations measure how variables or rank orders are related.Before calculating a correlation coefficient.
Alpha (Cronbach's): represents a model of internal consistency, based on the average inter-item correlation (measurement of the reliability analysis).
One Way ANOVA*:* was conducted to test the hypothesis that several means are equal, In addition to determining that if there were differences exist among the means.

Fieldwork
An official permission to carry out the study wassecured by sending official letters toking Fahad MedicalCity.
Each participant wasinterviewed individually by the researchers and afterexplaining the aim of the study her oral consent toparticipate in the study was obtained. Conduction ofinterviews was done individually

and development ofcommunication and trusting relationship was importantas women who undergo IVF be reticent aboutdisclosing information in the presence of staff members or other patients. The interview was started with general questions about the perceptions of infertility then, the interviewermoved on.The interviewer turned to specific questions about IVF ,NO. OF abortion, pregnancy and .stress using the study tools. Each interview lastedfor about 30 to 45 minutes according to participant'sresponse. Data were collected for about five monthsfrom January until the end of May 2014

IV. Results:

Table (1): Socio-demographic characteristics of the studied subjects (n= 150)

Variables	Frequency	percent
age		
Less than 20 years	6	4%
From 20 – 25 years	54	36%
From 25 – 30 years	30	20%
From 30 – 35 years	60	40%
Living Area		
Middle Riyadh	115	76.7%
East Riyadh	20	13.3%
North Riyadh	5	3.3%
West Riyadh	10	6.7%
Occupation		
Employee	46	30.7%
House wife	104	69.3%
Education		
Don't read	3	2%
Primary	12	8%
Secondary	59	39.3%
University	76	50.7%
Family income		
Low	28	18.7%
Moderate	119	79.3%
High	3	2%

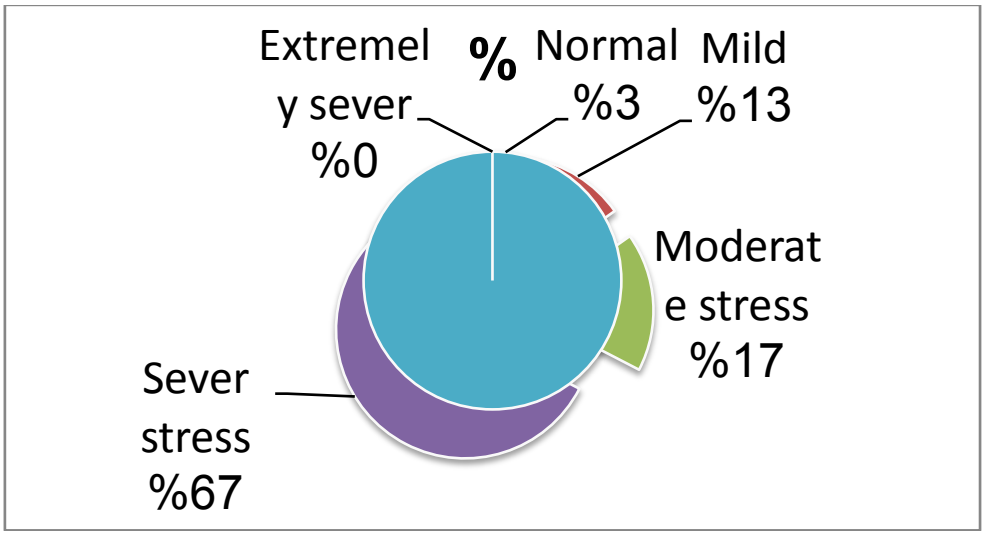
Table (1) Revealed in relation to socio-demographic characteristics of studied subjects that 40 % of them was between 30-35 years old, and only 4% were less than 20 years of age. 76% of the participants were living in Middle Riyadh. In relation to occupation, 69.3% of the subjects were housewives. According to family income, the majority of the studied subjects had moderate family income.

Table (2): Clinical and gynecological characteristics of the studied subjects (n= 150)

Variables	Frequency	Percent
No. of pregnancies		
None	39	26%
Once	77	51.3%
Twice	18	12%
3 times	16	10.7%
No. of failures		
None	69	46%
Once	61	40.7%
Twice	13	8.7%
3 times	7	4.7%
No. of tube-babies		
None	39	26%
Once	76	50.7%
Twice	27	18%
3 times	8	5.3%
Years trying to be pregnant		

Less than 1 year	23	15.3%
1-2 years	23	15.3%
3-4 years	49	32.7%
5-6 years	16	10.7%
7-8 years	11	7.3%
More than 8 years	28	18.7%

Table (2) showed that about half (51.3%) of the studied subjects got pregnancy only for once. In relation to number of failures, minority (4.7%) of the studied subjects had three times failures. Also minority (5.3%) of the subjects tried three times tube babies. According to the years trying to be pregnant, about (18.7%) of subjects tried more than 8 years



This table (figure1) illustrate more than two third (67.4%) of the studied subject suffering from severe stress while (12.6%, 17.4%) either have mild or moderate stress respectively

Table (3): Correlate between levels of stress among members and study subjects' age (n= 150)

Variables	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	4889.66	3	1629.89	2.72	0.043*
Within Groups	87499.43	146	599.31		
Total	92389.09	149			

** The differences are significant at 0.05*

The above table clarified that the value of sig (0.043), which was statistically significant at the level of significance (0.05), indicating that there was significant statistical differences between levels of stress and study subjects' age group (Table, 3).

Table (4): Comparison between levels of stress and study subjects' place of residence to the hospital (n= 150)

Variables	N	Mean	Std. deviation	T-test	Sig.
Near	43	30.33	26.43	1.445	0.150
Away	107	23.85	24.14		

** The differences are significant at 0.05*

Table (4) showed that the value of significance (0.150), which was statistical insignificant at the level of significance (0.05), indicating that there was no significant statistical differences between levels of stress between levels of stress and study subjects and their place of residence to the hospital.

Table (5): Comparison between levels of stress among study subjects and their family income (n= 150)

Variables	Sum of Squares	DF	Mean Square	F	Sig.
Between Groups	4871.78	2	2435.89	4.09	0.019*
Within Groups	87517.32	147	595.36		
Total	92389.09	149			

** The differences are significant at 0.05*

Table (6) revealed that the value of sig. (0.019), which was statistically significant at the level of significance (0.05), indicating that there was significant statistical differencesbetween levels of stress and study subjects' family income.

Table (6) Correlate between levels of stress and study subjects' gynecological variables (n= 150)

Variable	Between Groups	Within Groups	F	Sig.
Sum of Squares				
Number of living children	7681.15	84707.94	6.66	0.002**
Frequencies of pregnancies	10331.51	82057.58	6.13	0.001**
No. of abortion	7852.88	84536.21	4.52	0.005**
No. of test tube babies	7148.75	85240.34	4.08	0.008**
Years of trying to have children	4306.22	88082.87	1.41	0.225

** The differences are significant at 0.05*

Table (6) showed that there were significant statistical differences regarding studied subjects levels of stress and frequencies of pregnancies, number of abortions and number of test-tube babies. While, there was no significant statistical difference between studied subjects levels of stress and the years of trying to have children

V. Discussion

In the current study ,150 Saudi female undergone to IVF intervention were investigated for the IVF related stressors .

Regarding Sociodemographic characteristics of the studied subjects more than one third in the age group from 30-35 years , most of them live in middle Riyadh, house wife and with moderate family income . More than half of the sample were with university education .

In relation to the overall stress perception among the studied subjects , more than two thirds of the subjects perceived high level of stress ,it can be explained by the fear of uncertain outcomes , and the societal stigma which may follow those female regarding her infertility , this result comes in line with **Volgsten et al,2010**who said that undergirding IVF treatment is considered to be multidimensional stressors ,the treatment may evoke anxiety and the unpredictable out come of IVF may induce a depressive mood , Moreover, **Schimidi 2007** founded that infertility is a chronic stressor that the infertile female has to cope with . Also **Kamel2010** stated that infertility and its treatment attempts places a huge psychological burden on the infertile couple, especially on the woman, and it may lead to depression, suicidal tendencies, and other pathologic psychological conditions.

Regarding the age of the studied subjects, the results revealed that there is a statistical differences between stress level and the age of the studied subjects which indicate the level of stress in women with the young age experienced lower level of stress than the women of older age , it can be due to the fact that there is a limited fertile time during the long life of any women and the chances decreased with the advanced of age ., also the result of IVF treatment usually depend on certain factors after the God's well among them the young age which is mainly is considered as a positive predictor of the out come , So the female of young age group has a chances to make other attempts rather than the old one .

The current study showed no statistical differences between level of stress of the study subjects and their places of residencies , this finding is contradict with the finding of **Jin et al.2013** , who find that living away the big cities is considered as a factor that affect the female either initial seeking treatment or making a second attempt which may add additional stressors and psychological problems to those female .

The results of the current study indicated a statistical difference between level of stress and family income of the studied subjects ,these differences are for the level of mid – income versus the level of low income ,therefore the stress level among female with low income is lesser than the female of mid-income in their level of stress , it could attributed to the fact that female of low income try to be accustomed with their living condition more than those of the level of mid income which represents the most of the study sample , On the other hand **Sun 2011** stated that the cost of infertility treatment is considered a cause that make couple hesitate to seek treatment in both low ,mid –income and less educated couple which can add extra psychological burden .

This study revealed that there is a significant differences between level of stress and number of living children , it was noticed that the stress level is lower among female having living children than who has not , it is logically and can be explained by the fact that female having living children usually face lower societal and family blame as well as she practiced the mother role ,and satisfied her need to be a mother of baby even if it is once .than who have not at all .

Regarding the number of pregnancies and abortion, the result of the study revealed that there is a statistical difference between the number of pregnancies, abortion and the level of stress , it can be attributed by with the frequency of pregnancies and abortion in every attempt of IVF treatment the fear of uncertain outcomes is increased and doubt of the success become dominant in expectation which will lead to stress and psychological strains .

Finally this study indicated no statistical difference between level of stress and the years of trying to have children , this result is may explained by the virtue of Islamic rules which commit the Saudi women to not loss her hope and already she knows that each thing in life goes according the God's well and therefore their future perspective and hope is strong .

VI. Conclusion

The current study was carried out to assess the stressors among Saudi women undergoing to IVF treatment and to investigate the effect of selected personal characteristics and variables on the level of stress .

The study revealed high level of stress among studied subjects , also certain factors were noticed to be a predictor of stress as : age, family income , frequency of pregnancies and numbers of abortion

VII. Recommendations

Based on the results of the current study , recommendations are summarized in :

1- Further studies are needed using large sample size and different geographical region in Saudi Arabia .
2- Effective strategies and nursing interventions are in demand to help infertile women overcome their psychological conflicts and find appropriate resolution .

Limitations of the study:

Certain limitations in this study were noticed as:

1- Small sample size didn't permit with generalization of the results
2- All study subjects were limited to Riyadh region ,so there are many factors were ignored .
3- Another limitations of the current study is , its focus only on the assessment of stress neglecting the other psychological aspects

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