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Original Article

Happiness and Related Factors in Infertile Women

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ABSTRACT

Infertility could be considered as one of the diseases which cause many psychological problems such as low level of happiness. Beside the direct effects of infertility, other factors could affect the happiness level of the infertile women. This study was conducted to investigate these factors. In this descriptive-analytic study, a total of 130 women who visited our center in Kermanshah, Iran, were selected by using convenience sampling method. Demographic data questionnaire, the *Spiritual Intelligence Self-Report Inventory (sisri-24)*, *Oxford happiness inventory (OHI)* and *Satisfaction with life scale (SWLS)* were used to collect the data. In this study, the mean score for happiness level of the infertile women was found to be 30.98. The results, also, showed that there is a positive significant correlation between happiness with income, wife and the husband's education level, life satisfaction and spiritual intelligence and its three subscales. Moreover, a significant but negative correlation was found to exist between the length of the infertility period and the happiness level of these women. Finally, the education level factor was found to be the most effective in predicting the happiness level of the infertile women. Based on the findings of this study, the happiness level of the infertile women was lower than the rest of the population within the society. Considering the fact that some factors affects the happiness level of these people; therefore, interventions which could target these factors could increase these women's happiness level.

Keywords: Happiness, Infertility, Spiritual Intelligence, Life Satisfaction, Income.

Introduction

Infertility is an unpleasant experience for many people who want to have children. Infertility is clinically defined as "a disease in the reproductive system which causes

failure to achieve a clinical pregnancy after one year or more after having regular sexual intercourse without any protection" (Zegers-Hochschild et al., 2009).This disease is a common problem all over the world. Based on the publications, as of 2007, 72.4 million women are infertile in the world (Boivin et al., 2007). Worldwide rates of infertility range from 5 to 30 percent and affect about 12 percent of the population who have reached the age of productivity (Hall & Burt, 2012).

Infertility is not just a physical problem; however, it is regarded as a bio-psychosocial crisis (Van den Broeck et al,. 2010). It is known that many problems and disorders are related to infertility. It seems that due to the psychological factors and social pressures, the negative effects of infertility on women are more than men. In a prevalent Italian study, 14.7 percent of the infertile women and just 4.7 percent of infertile men had anxiety symptoms. Moreover, the same study showed that 17.9 percent of the infertile women and 6.9 percent of the infertile men displayed symptoms of depression (Chiaffarino et al., 2011). In a Chinese study, the results showed that when both of the couple are infertile, marital and sexual satisfaction in wives is less than the husbands(Lee et al., 2001).

Moreover, 20.7 percent of the infertile women had criteria of eating disorder at one point in their life. This is 5 times more than its lifetime prevalence rate in the U.S. (Freizinger et al., 2010). The women with primary infertility, in comparison with fertile women, have lower scores in health-related quality of life and sexual function (Hassanin et al., 2010). These women, in comparison with the fertile women, display higher number of psychiatric disorders, especially adjustment disorder with mixed anxiety and depressed mood and binge eating disorder (Sbaragli et al., 2008). In addition, their mental disturbances are more severe than the fertile women (Jamilian et al., 2011). With regard to past studies, infertile women experience many psychological disorders. Psychological problems in addition to other effects of infertility can reduce subjective well-being and happiness in these people. Some factors may be having positive effect on happiness of infertile women. One of these factors can be spirituality and especially spiritual intelligence.

One of several types of intelligence is spiritual intelligence and it can be developed relatively independently. This intelligence also can help a person to differ reality from Illusion (Vaughan, 2002). Spiritual intelligence combines the concepts of "spirituality" and "intelligence" in a new concept and it makes whole and gives integrity (Bagheri et al., 2010). Researches show that there is a positive correlation between spirituality and religion with people's mental health. In a study, the results showed that there is a significant positive relationship between marital satisfaction and religious attitudes (Hosseini Dowlatabadi et al,. 2013). A study which was conducted on 12643 Hungarians, showed that those who practiced religion had a better mental health (Konkolÿ Thege et al., 2012). Moreover, a negative correlation between depression and anxiety with spiritual well-being was reported (Kandasamy et al., 2011). The results of another study showed that there is a relationship between levels of life satisfaction and spirituality (Brillhart, 2005). In addition, existential And Religious Well-Being significantly predict life satisfaction (Jafari et al., 2010). In an Iranian study on 125 nurse, results showed significant correlation between spiritual intelligence and happiness (Bagheri et al., 2010). It is

obvious; many other factors may relate to infertile women happiness.

Life satisfaction is a cognitive and judgmental process and this judgment is based on comparison of Individual circumstances with an appropriate standard (Diener et al., 1985). In a study which was conducted by Callan& Hennessey (1988), it was found that the infertile women were less satisfied with their lives than the fertile ones. Since concept of life satisfaction is one of the components of happiness (Argyle & Lu, 1990), relation between them is probable. A positive correlation between happiness and life satisfaction was reported in 2008 (Singh & Jha, 2008). Results of the past studies showed a positive relationship between income and happiness (Ball & Chernova, 2008), and education and happiness (Chen, 2012). Furthermore, the age of infertile women and infertility duration may be important factors in predict of happiness in this people.

Considering the fact that the infertile women are prone to various types of mental disorders and mental health problems, conducting research in this area is a necessity. Moreover, since no study was found to have been conducted on the happiness level of the infertile women and the factors affecting their happiness, this study aimed to investigate the issue.

Material and methods

Procedure and Participants

In this descriptive-analytic study, a total of 130 women who visited our center between May and September 2012 were selected by using convenience sampling method. The selected participants signed a written consent form before the questionnaire was given to them. The women's age ranged from 17 to 51 (mean=32.03, SD=5.15). The husbands' age mean was 36.82 with SD 7.01. 29.2 percent (38 people) had elementary education, 22.3 percent (29 people) had completed junior high, 33.1 percent (43 people) had high school education and 15.4 percent (20 people) had university education. Mean of the duration of infertility in these women was 8.32 with SD 5.22, also the lowest was 1 and the highest was 20 years.

Instruments

Demographic data questionnaire: in this questionnaire, there were questions related to factors such as: age, husband's age, income, and duration of infertility, education level and the husband's education level.

The Spiritual Intelligence Self-Report Inventory (sisri-24): this questionnaire contained 24 questions and was designed to measure the spiritual intelligence. Each item scored between 0 and 4. The possible scores in this scale were between 0 and 96 and consisted of four subscales as follows: Critical Existential Thinking (CET) with 7 items, Personal Meaning Production (PMP) with 5 items, Transcendental Awareness (TA) with 7 items and Conscious State Expansion (CSE) with 5 items. These items had an alpha value of 0.92. Furthermore, the "Individual subscales of CET, PMP, TA, and CSE displayed adequate alpha coefficients, 0.78, 0.78, 0.87, and 0.91, respectively. These analyses suggest excellent psychometric properties of the SISRI-24 (King & DeCicco, 2009).

Oxford happiness inventory (OHI): Oxford happiness inventory in 1989 was built by Argyle, Martin, &Crossland. This questionnaire has 29 items that each item has 4 states and scores range from 0 to 3 (Hills & Argyle, 2002). For the Iranian population, alpha was 0.91 for this questionnaire and its other properties

were appropriate (Alipour & Agah Heris, 2007).

Satisfaction with life scale (SWLS): Satisfaction with life scale was built by Diener and et al in 1985 (Diener, et al., 1985). This scale is a widely used tool for measuring subjective well-being. This scale has 5 items and each item, using the likert scale, with scores ranging from 1 to 7 (Wu et al., 2009). In Iranian population, alpha was 0.83 and the test-retest validity was 0.69 (Bayani, et al., 2007).

Statistical analysis

To analyze the data, descriptive statistics such as means, standard deviation, frequency and percentages were used. To study the association between the demographic variables, life satisfaction and spiritual intelligence with the happiness level of infertile women, Pearson and Spearman correlation was used. In other words, the Pearson Correlation was used for the normally distributed data, and the Spearman Correlation was used for the others. Furthermore, to find out which one of the variables has the highest capability to predict the happiness level, step-wise regression was used. Ultimately, to compare the happiness level between the infertile women and the rest of the population, one sample t-test was used.

Results

The first result from this study was the mean score of happiness in infertile women, 30.98 with SD of 13.27;in a prior study, the mean score of the Iranian participants in OHI was 42.07 (Alipour & Agah Heris, 2007). One-sample t-test showed a statistically significant difference between happiness in infertile women and the Iranian participants ($t=9.07$, $p<0.001$).

The results showed that there is a positive significant correlation between happiness with income, wife and the husband's education level, life satisfaction and spiritual intelligence and its three subscales. There is also a negative significant correlation between happiness and duration of infertility. However, there was no significant correlation between the ages of the infertile women and *SISRI* Critical Existential Thinking subscale and their happiness level (table 1).

Table 1. Correlation between infertile women's happiness level with demographic variables, life satisfaction and spiritual intelligence

variable	R	*P* value	variable	R	*P* value
age[a]	-0.116	0.215	Critical Existential Thinking[a]	0.141	0.144
Infertilityduration[a]	-0.236	0.010	Personal Meaning Production[a]	0.474	p<0.001
income[a]	0.302	0.001	Transcendental Awareness[a]	0.314	0.001
Education[b]	0.476	p<0.001	Conscious state expansion[a]	0.370	p<0.001
husband's education[b]	0.404	p<0.001	Total spiritual intelligence score[a]	0.407	p<0.001
SWLS[a]	0.430	p<0.001			

[a]Pearson correlation [b]Spearman correlation SWLS=Satisfaction With Life Scale

To find out which one of the variables provide the highest capability to predict the happiness level, step-wise regression was used. The ability of the variables to predict the variance of happiness was found to be 35 percent. Among the variables, the education variable had the highest prediction capability. The Personal

Meaning Production subscale of *SISRI* and life satisfaction came after the education factor (Table 2).

Table 2. The result of the step-wise regression analysis for the happiness variable

step	variable	R	R-squre	R_{Adj}	Std.Error	Beta	t	*P* value
first	education	0.473	0.215	0.215	10.70	0.473	5.01	P<0.001
second	education	0.568	0.322	0.307	10.06	0.362	3.84	P<0.001
	PMP					0.332	3.53	P=0.001
third	education	0.61	0.373	0.35	9.73	0.274	2.81	P=0.006
	PMP					0.332	3.64	P<0.001
	SWLS					0.241	2.60	P=0.011

PMP= Personal Meaning Production SWLS=Satisfaction With Life Scale

Discussion

Infertility which afflicts many in the world, could affect many aspects of the mental health, especially in women, all over the world. Since no research was found on the factors which influenced happiness of the infertile women, this study aimed to investigate the effect of age, the length of infertility, income level, education, life satisfaction and spiritual intelligence on the happiness level of the infertile women. The first thing the findings of the study pointed out to was that the level of these women's happiness was lower than the average level of happiness of the society. Considering the effects of infertility on the other psychological functions such as health-related quality of life, sexual function (Hassanin, et al., 2010) and life satisfaction (Hammarberg, et al., 2001) of the infertile women, it seems that decreased happiness could be infertility's direct and indirect consequences.

The results indicated that the longer the period of infertility, the lower the happiness level of the women. Here, the correlation was significant. With the passing of the time and failure of fertility treatment, these women may experience a higher level of stress. This could contribute to their unhappiness. Moreover, as the duration of the infertility gets longer and the menopause approaches, these people may totally lose the hope for ever getting pregnant; and this, in turn, may lead to lowered happiness in them. In addition to the discussed results, it was found that there is a significant and positive correlation between the income level and the happiness level of the infertile women. The researchers have found out that both the absolute and the relative income increase happiness (Ball & Chernova, 2008).This could be true with the infertile women too. These people spent large sums of money for treatment which could weaken their economic means. On the other hand, some people may not be able to get the needed fertility treatment because of their lack of financial means, or they may stop the treatment midway because their financial condition does not allow them to keep it up.

The results also showed that education was the number one cause of happiness in the infertile women. There also a positive correlation was found between these women and their spouses' education level and the women's happiness level. Chen, in a research in 2012, showed that the people, who receive more education, build more extensive social networks and have greater involvement with a wider world. This type of living has a positive association with happiness (Chen, 2012).

In another research, it was shown that education could influence the happiness level both directly and indirectly. Education indirectly influences happiness through improved working conditions and higher income, and directly, it impacts happiness through elevating the self-confidence and self-estimation which results from acquiring knowledge (Cuñado & de Gracia, 2012). It seems that in Iran those with higher levels of education have a higher income and enjoy better working conditions. Considering the fact that infertile individuals have to spend a great deal of money on their treatment, having a high income could have a huge positive impact on their happiness level.

The third predictor of happiness was found to be life satisfaction. Life satisfaction had a significant and positive correlation with happiness. This finding was in line with the previous research (Singh & Jha, 2008). Happiness has three partly independent components: 1) the frequency and the degree of positive effect, or joy, 2) the average level of satisfaction over a period of time, and 3) lack of negative feelings such as depression and anxiety (Argyle & Lu, 1990). Therefore, life satisfaction is a concept within the bigger concept of happiness, and it is natural for the individuals with a higher level of life satisfaction to enjoy a higher level of happiness in life.

The last finding of this study was that spiritual intelligence and its subscales, with the exception of Critical Existential Thinking, showed a significant and positive correlation with happiness level of the infertile women. In the previous researches on the spiritual intelligence and spirituality, similar results are reported. For example, a positive correlation exists between the happiness in nurses and the spiritual intelligence (Bagheri et al., 2010). Also, this type of intelligence is shown to have a significantly positive association with the quality of life in students and could be used as a predictor (Bolghan-Abadi et al., 2012). Furthermore, a significant and positive correlation is reported between life satisfaction and spiritual well being (Lee, 2011).

The spiritual intelligence is a capability which could play an important role in making spiritual choices that could contribute to the mental health and well-being of the individuals (Vaughan, 2002).Those with a higher spiritual intelligence make more suitable choices and adapt well to different conditions. As the result of this, these individuals are capable of maintaining a proper level of happiness in their life. Another finding related to the spiritual intelligence in this study was that the Personal Meaning Production Subscale is the third predictor of happiness level in the infertile women. This component of spiritual intelligence is defined as the capability of forming personal meaning and purpose for all the physical and mental experiences (King & DeCicco, 2009). The infertile women may feel that life has treated them unjustly by depriving them of the natural right of becoming pregnant and a mother. Forming Personal Meaning could help these individuals to, even, find meaning and purpose for this negative aspect of their life and come to terms with it much easier.

Conclusion

Based on the results of the current study, a few points could be made. The first point is that considering the lower level of happiness in the infertile women, any interventions which could improve their mental and emotional health are necessary. The second point is that throughout these interventions, the emphasis must be on factors which could truly affect the happiness level. Again,

based on the findings of this study, it seems that placing emphasis on the spiritual intelligence, spiritual interventions, and elevating life satisfaction could be very influential. Moreover, paying attention to factors such as furthering education of the individuals in the society and improving the infertility treatments could be very effective measures.

Limitations and implications

As in any other research, there were some limitations in this study. The first limitation was that the participants, in this study, were randomly selected from one province in Iran. Therefore, when using the results of this study to deal with other groups, caution is advised. It is hoped that in future research projects this limitation could be eliminated and a more comprehensive study could be conducted using various groups.

The second limitation of this study was that all the influencing factors on the happiness level of infertile women were not considered. Since this study was the first on this issue, further research studies must be conducted to identify the various factors which contribute to the happiness level of the infertile women.

The third issue which must be mentioned here is that throughout the research it was found that some individuals were not able to answer certain questions, especially those related to the spiritual intelligence. As the result of this, a few of the participants were eliminated. This factor could have affected the results of this study. Another issue which should be paid attention to is that developing tools which could be used for all the individuals in the society was felt throughout this study. Considering the fact that the concept of spiritual intelligence is a relatively modern concept, in the future research projects, the researchers should concentrate on developing tools which could be used to measure it.

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