

The Predication of Marital Adjustment based on Mindfulness among Infertile Couples in Iran

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ARTICLE INFO

ORIGINAL ARTICLE

Article History:

Received: 29 Mar 2022

Revised: 01 Oct 2022

Accepted: 15 Oct 2022

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Citation:

Roosta S, Mollazade J, Goodarzi MA. The Predication of Marital Adjustment based on Mindfulness among Infertile Couples in Iran. *Journal of Social Behavior and Community Health (JSBCH)*. 2022; 6(2): 960-967.

ABSTRACT

Background: Infertility and its treatment cause psychological effects, such as confusion, frustration, depression, anxiety, hopelessness, and worthlessness in life. Mindfulness reduces negative emotions and increases people's adjustment when faced with stressful life tasks. Therefore, this study aims to predict marital adjustment based on mindfulness in infertile couples.

Methods: The present descriptive-correlational study was conducted on 122 infertile couples referred to Mother and Child Hospital in Shiraz selected by convenience sampling method in summer of 2013. After obtaining consent form, demographic questionnaire, dyadic adjustment scale (DAS), and five facet mindfulness questionnaire (FFMQ) were used to collect data. The data were analyzed by SPSS 23 using Pearson correlation and multiple regression analysis ($P=0.05$).

Results: Seventy-four couples had been married for less than five years and 48 couples had been married for more than five years with a mean age of 32 ± 5 years. The results indicated that all mindfulness components except non-judgmental inner experience predict marital adjustment ($P<0.05$).

Conclusion: The results indicate that mindfulness technique is very effective and has positive influence on improving marital adjustment between infertile couples. Massive mental health education is recommended to educate the infertile couples and governmental and non-governmental agencies are required to help this group of people for effective prevention, treatment, and control of this problem. This treatment can affect marital adjustment in both groups of men and women.

Keywords: Marriage, Mindfulness, Infertility, Family Characteristics

Introduction

Infertility is defined as not being pregnant after one year of regular intercourse and without the use of contraceptive methods (Wolman, 2014). Infertility is one of the growing problems in developing countries and is divided into two primary and secondary categories with different causes, including female, male, and unknown (Hasanpoor-Azghdy et al., 2014). The World Health Organization (WHO) report shows that more than 70 million couples around the world and more than one million couples in Iran suffer from this condition (Inhorn & Patrizio, 2015). Based on meta-analysis in Iran, 2.8% of couples in 2001 and, 24.9% of them in 2010 reported infertility during their whole life (Moghadam et al., 2014). Acceptance and adaptation to the concept of infertility is difficult due to its unpredictability condition and its different aspects (Romeiro et al., 2017). Nowadays infertility has become a social concern and can cause severe psychological trauma to the marital relationships of infertile couples (Pasha et al., 2017). This diagnosis has many psychological effects on couples (Tiu et al., 2018). Although infertility can lead to certain psychological problems, these problems can exacerbate infertility. Most of these patients have symptoms, such as depression, anxiety, anger, and isolation after failure of successful medical treatment (Rooney & Domar, 2018). Sexual function and relationships also change (Starc et al., 2019). Infertility reduces sexual function and marital adjustment. Infertility with male factor has no negative effect on marital relationship and infertile male participants showed higher marital satisfaction than spouses. However, infertile women showed the weakest relationship compared to fertile women, which was related to demographic factors and treatment experience. In infertile couples, the infertile spouse was affected by the infertility. In addition, other sex-related factors, the couple's age, education level, and the couple's coherence in infertility perception were related to the quality of the marital relationship. Incompatibility and marital dissatisfaction in

marital relations, while disturbing the psychological and emotional balance of family members, causes problems in social relations, a tendency to moral deviations and the decline of cultural values between couples. According to research, anxiety, depression, neurological disorders, painful intercourse with women, child abuse, and finally divorce are adverse consequences of marital dissatisfaction (Zare et al., 2017). Trying to conceive can be expensive with tedious medical procedures. Frustration in treatment can affect the foundation of a couple's relationship (Faria et al., 2012). Various studies have shown that marital adjustment is low in infertile women (Malik, 2020) and this can lead to divorce and remarriage (Ma et al., 2019). Mindfulness makes people mention stressful events as a challenge in life and not as a threat. This improves the effect of stress on relationships. In addition, it has been suggested that mindfulness can increase intimacy and communication. Research studies have shown that couples who use mindfulness techniques are better at marital adjustment (Kappen et al., 2018). Mindfulness considers paying attention to the goals in the present time and without judgment about the obvious experiences, moment by moment (Purser, 2015). It helps people cope with negative thoughts better, such as thought about body's ability and its deficit. This concept causes cognitive flexibility in this situation. Finally, all of these are related to better adjustment in couples. Mindfulness reduces severe negative emotional reactions associated with impulsive behaviors, such as expressing anger; it can increase marital adjustment (Wupperman et al., 2015). Given that, mindfulness affects marital adjustment, examining its impact on infertile couples can be effective in reducing their problem. Mindfulness as an essential factor plays an important role in psychological health among different problems, especially infertile couples. This study aims to evaluate the effect of mindfulness on marital adjustment in infertile couples in Shiraz.

Methods

This study is a correlational study. Statistical population was infertile couples referred to the Mother and Child hospital in Shiraz in summer of 2013. Sampling was selected by convenience sampling method. In this way, 122 infertile couples who were referred to this hospital in Shiraz (122 women and 122 men) filled the informed consent of participation. The Cochran formula was used and the sample size was calculated with margin error of 0.5 and confidence level of 95% (Bartlett et al, 2001).

$$n = \frac{z^2 pq}{e^2}$$

The inclusion criteria included obtaining a diagnosis of infertility by a gynecologist, being infertile for at least one year without contraception, primary infertility (history of having no children), no adopted children, no literacy, and age range of 18 to 45 years. The exclusion criteria also included having other chronic physical illnesses except infertility, having a history of mental illness and using medication or psychotherapy for treatment, and a history of pregnancy before receiving a diagnosis of infertility. For data collection, dyadic adjustment scale (DAS) and a five-facet mindfulness questionnaire (FFMQ) were used. Each participant filled the consent form before taking part in this research. In this study, three scales were used. Demographic questionnaire that assessed individual-family factors, such as age, sex, duration of treatment, duration of infertility, reasons of infertility, economic status, and duration of marriage, treatment method, education level, and body mass index (BMI) was a researcher-made questionnaire. The DAS that has 32 questions and evaluates the quality of marital or two-person relationships was developed by Spanier in 1976. The scores of this questionnaire vary from zero to 150. Higher scores indicate a better and more consistent relationship. Spanier observed differences between the scores of compatible and incompatible pairs and used them to determine the main construction of the scale. Overall scale reliability with Cronbach's alpha was 0.96, which

has significant internal consistency. The internal consistency of the subscales is excellent. Dyadic satisfaction was 0.94, affective expression 0.73, dyadic consensus 0.90, and dyadic cohesion was 0.86 (Spanier, 1976). In an Iranian study conducted by Mollazadeh et al. (2002), the reliability of the questionnaire was determined by a retest method with a time interval of 37 days on 92 subjects, which obtained a coefficient of 0.86 and Cronbach's alpha of this scale was 0.89. To determine validity, simultaneous implementation of this scale and Locke and Wallace Marital Adjustment test was used on 76 people and obtained a Cronbach's coefficient of 0.9 (Molazade J, 2002). The FFMQ has 32 items based on the study of factor analysis on five mindfulness questionnaires and was developed by Baer et al. It identified five factors that assess different aspects of mindfulness. These factors include observation, description, aware actions, non-judgmental inner experience, and non-reactivity (Baer et al., 2006). Subscales of this instrument have a high internal consistency (alpha range from 0.75 to 0.9) (Baer et al., 2006). Kalantarti determined the reliability and validity of the five-facet mindfulness questionnaire in Iran. For determining construct validity of this test, factor analysis using principal component analysis (PCA) was used (Kalantari, 2011). Cronbach's alpha coefficients for this questionnaire were calculated in the range of 0.62 to 0.81.

The data were analyzed using SPSS 23 software and statistical methods, such as correlation test and regression methods.

Couples' participation in this project was purely voluntary and had no bearing on their treatment outcomes. The survey scales were anonymously collected and names and addresses were excluded. The Research Ethics Committee in Shiraz University of Iran approved the research (code: 2720544)

Results

One hundred and twenty two couples participated in this study. Fifty-eight percent were 20-30 years, 36.5% aged 30-40 years, and 4.9%

aged over 40 years. Fifty-two subjects were undergraduate, 89 people with diploma degree, 28 people 2 years of university, and 54 participants had a bachelor's degree, and 21 subjects had above bachelor. Two hundred and sixteen people had below-average incomes and the rest of them had good incomes. Seventy-four couples had been married for less than five years and 48 couples had been married for more than five years. BMI of 5.3% was below 20 and BMI of 3.7% was higher than 35. Most of the subjects had BMI 20-25 (29.9%). Other descriptive statistics is shown in Table 1.

In order to test the effectiveness of mindfulness on marital adjustment, simultaneous multiple regression statistical method was used.

In general, according to the adjusted R-squared, 13% of the changes in the variable "marital adjustment" can be explained with the above regression model.

All components of mindfulness except non-judgmental inner experience, predict marital adjustment. 'Description' predicts marital adjustment ($\beta = 0.23$, $P < 0.005$) and the next predictor variable is aware actions ($\beta = 0.21$, $P < 0.02$). The 'observation' component was also a positive and significant predictor ($P = 0.18$, $P < 0.003$). Finally, non-reactivity is a positive and significant predictor of the criterion variable ($\beta = 0.17$, $P < 0.04$). The observation of the adjusted R-square index shows that, 34% of the changes in marital adjustment can be explained with the above regression model (Table 2).

Table 1. Descriptive statistics for infertile couples the samples

Variables		n (%)
Duration of infertility	1- 2 years	92(37.7%)
	3-5 years	98(40.2%)
	6-10 years	40(16.4%)
	11-15years	6(2.5%)
	More than 15 years	8(3.3%)
Treatment duration for infertility	0-2 years	150(61.5%)
	3-5 years	64(26.2%)
	6-10 years	18(7.4%)
	11-15 years	10(4.1%)
	More than 15 years	2(0.8%)
Infertility reasons	Female	60(24.6%)
	Male	90(36.9%)
	Both	32(13.1%)
	Unknown	62(25.4%)

Table 2. Multiple Regression analysis to determine marital adjustment based on mindfulness's components among infertile couples

Predictive variable	R	R ²	Criterion variable: marital adjustment			
			Modified R ²	SE	F	P
Observation			0.81	0.18	2.23	0.03
Description			0.71	0.23	2.84	0.005
Aware actions	0.61	0.34	0.7	0.21	2.4	0.02
Non-judgmental inner experience			0.77	0.16	1.91	0.058
Non-reactivity			0.79	0.17	2.07	0.04

Discussion

This study aims to determine prediction effect of mindfulness on marital adjustment in infertile couples. First the demographic report of sample group was reported and multiple regression statistical method was used simultaneously to assess the main topic. The findings showed that among men, the component of "non-reactivity" in mindfulness scale positively and significantly predicts marital adjustment. Between both sexes, with the exception of 'non-judgmental inner experience' component, other components of mindfulness predict marital adjustment.

Infertile couples pay attention to unpleasant thoughts, emotions and internal experiences, but do not react to them and react to the experiences in the moment. This can be justified about the significance of not reacting to the inner experience in this study.

According to Adams et al. (2011), mindfulness enables people to use more adaptive coping strategies, such as positive reassessment and helping couples for using more adaptive strategies of emotion regulation and self-regulation. This will change their reaction to negative emotions and they show non reactivity in mindfulness scale predict the marital adjustment in infertile couple (Adams, 2011), which is consistent with the present study

It can be said that mindfulness predicts marital adjustment in infertile couples in two ways. First, mindfulness increases conscious mindfulness towards the partner and causes couples to become more attached to each other which is the meaning of aware action. This secure attachment will increase positive emotion and marital adjustment in infertile couples (Forouzesh Yekta et al., 2018). This finding is compatible with our result that aware action component in DAS scale predict marital adjustment in both sexes. On other hand, higher levels of mindfulness reduce the impact of anxiety related to insecure attachment on relationships over time and increase non-judgmental reaction to inner experience. (Stevenson et al., 2017), that is inconsistent with

this research. More researches with larger sample group will be suggested to evaluate this topic in more detail. The attachment form in childhood through parent-child interaction influences the type of emotion regulation strategies they used in adulthood period (Pascuzzo et al., 2015). According to attachment theory, when a person is in a stressful situation, people with different attachment styles will try to regulate and deal with emotions in ways that express their beliefs about themselves and others and this causes significant differences in observation and description subscales of DAS and its predictability effects on marital adjustment (Creswell et al., 2007). This results show even in different country with different culture it is the same. On the other hand, mindfulness components such as aware reaction and non-judgmental reaction to inner experience allows people to use more adaptive coping strategies, such as positive reassessment (Kaunhoven & Dorjee, 2021). Eventhough in present study the nonjudgmental reaction to inner experience did not predict the marital adjustment,

It can be concluded that during stressful experiences, such as infertility, the attachment pattern formed through child and mother in childhood will be activated and based on the attachment styles individuals have, emotion regulation strategies that effect on marital adjustment will appear. It was showed the infertile couples who had high scores on mindfulness subscales such as observation and description of their emotions, had less attachment anxiety and increase secure attachment to each other (Foroudifard et al., 2020). These two subscales (observation and description) were good predictors in present study. Cognitive emotion regulation skills are the most effective individual factor in mental health and self-control. Self-control increased among infertile couples who use mindfulness factors. The only predictor factor (both sexes) for self-control and marital adjustment in that study is non-judgmental inner experience in mindfulness, that is contradict with present study. Some couples who feel less self-

control have more emotional and psychological problems, including depression that lead to marital maladjustment (Keeton et al., 2008). With increasing severity of depression and anxiety in infertile couples, their level of marital satisfaction decreases. Mindfulness increases marital adjustment through its effect on self-control and anger management. It can be concluded that infertile couples who use positive cognitive emotion regulation strategies, such as mindfulness techniques seem to have more control over their internal and external environment (aware reaction and non-reactivity), and this reduces emotional problems and depression and increases marital adjustment (Riahi et al., 2020). It means mindfulness as being in the moment is good predictor in emotion regulation, sexual satisfaction and marital adjustment among infertile couples. Although in that study, the duration of infertility is good predictor of marital adjustment, it was not confirmed in present research.

Riahi et al found out that non judgment reaction also predicts mental problems and marital adjustment in infertile couple, but it not makes sense in our research. Using different type of statistical method may be the reason of it.

Shargh et al. studied the effect of mindfulness on marital satisfaction in infertile women and showed that mindfulness has a positive effect on marital satisfaction of these people (Shargh et al., 2016). In another study conducted by Zarastvand , the role of mindfulness in marital self-regulation was evaluated as good (Zarastvand et al., 2020). Both studies were in line with the present study. Rahmanifard et al. found that mindfulness improves the mental health of infertile women (Fard et al., 2018). Emotion regulation has positive effect in well-being and marital satisfaction of infertile woman (Abbasi et al., 2016). This is consistent with the present study. This studies same as Vazirnia et al shows mindfulness has positive effects on infertility self-efficiency, dyadic adjustment, and sexual satisfaction (Vazirnia et al, 2021).

Although this study examined marital adjustment variables in infertile couples, there were some limitations, such as stress and anxiety about the treatment process, difficulty in understanding some of the questions of questionnaire, cross-sectional study that reduces generalization and unavailability of the whole infertile couples because they do not seek medical treatment. Further studies are also suggested to be performed on larger samples size with different types of infertility dividing them according to demographic variables, such as age, education, income, and job on infertility levels and types of problems caused by it.

Conclusion

Based on the findings of previous research and the results obtained from the present study, it can be concluded that there are differences between men and women in the pattern of predicting marital adjustment through the components of mindfulness. According to this study, some components of mindfulness are predictors of marital adjustment, and therefore the analysis performed to confirm the research question in some way. The non-reactivity component is the strongest predictor of marital adjustment in men and the description was the strongest predictor of marital adjustment in women.

Acknowledgments

We thank all of couples in Mother and Child hospital in Shiraz for assistance with taking part in this research as sample group.

Conflict of interest

The authors declare that there is no conflict of interest.

Author's contribution

S.R; Conceptualization and Writing the manuscript, J.M; Supervision and M.A.G; Methodology and Formal analysis.

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