Original Article

A Comparison of Stress Reactions, Coping Styles, Subjective Well-Being and Its Sub-Scales in Fertile and Infertile Women

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Abstract

Background: Infertility is described nearly universally as an extremely stressful condition with enduring effects on the marriage as well as each partner's well-being. The present study was done to compare stress reactions, coping styles, subjective well-being and its sub-scales in fertile and infertile women. **Materials and Methods**: This analytic cross-sectional study enrolled 120 women (60 fertile and 60 infertile). The stress symptoms questionnaire, coping inventory of stressful situations-short form and subjective well-being questionnaire were administered as assessment tools. **Results:** Our results demonstrated significant difference among infertile and fertile women in stress reactions, coping strategies and subjective well-being. Infertile women reacted more than fertile women emotionally, cognitively and behaviorally. Infertile women used more emotion-oriented coping methods. Infertile and normal subjects differed significantly in terms of emotional, psychological and social well-being. **Conclusion:** Given the psychological consequences of infertility which may exaggerate the course and cause delayed treatment responses, psychological interventions seem to be clinically warranted.

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Introduction

The potential link between stress and infertility has attracted clinical attention in the practice of fertility care. Some authors have emphasized on the role of psychogenic factors among the causes of infertility, referred to as the psychogenic hypothesis; while others support the stress hypothesis (1). The stress hypothesis is embraced also by those who consider infertility as a psychosomatic disorder (2-3). They have outlined the impact of emotional states and of the ability of coping with stress (4) on the neuroendocrinological state (5), pregnancy rates and the treatment outcome for assisted conception (6).

Researchers have identified six strategies commonly used by woman to cope with infertility. Those include: a- increasing the space or distancing oneself from reminders of infertility; b- instituting measures for regaining control; c- acting to develop self-esteem; d- looking for hidden meaning, e- giving in to feelings (expressing emotions); and f- sharing the burden with others (7).

Coping choices may be essential in making

treatment decisions, maintaining an emotional balance, and promoting open communication with others. Women who strive to cope with infertility may be at risk for self-devaluation and isolation because of their choice of coping strategies and the meaning they ascribe to the infertility (8-9).

When an infertile woman feels that she can control the condition, she evaluates the situation less stressful. She will be thus protected against the negative evaluation and appraises herself in a positive way. This would improve self-confidence and provides a proper background to counteract the negative viewpoints. As such, the patient confronts the situation actively and this helps reducing the negative impact of stress (10).

Subjective well-being is another variable which is closely related to infertility. Accordingly, differentiation in the relationship between coping styles and stressful experiences is accompanied by differentiation in the relationship between coping styles and the individual's well-being indices. For instance, findings from Steiner's study revealed a significant negative correlation between task-oriented coping styles, health problem indices and risky behaviors. On the contrary, there was a positive correlation between emotion- and avoidance-oriented coping styles, health problem indices and risky behaviors (11). Furthermore, infertility may leave a devastating effect on women's mental health. Tao et al and Lansakara et al have emphasized on the relationship between well-being and mental health level and components in infertile compared to normal women. In this regard, certain coping strategies are shown to have different impacts on individuals' mental health, so counseling and couple-therapy are considered beneficial to infertile couples (12-13).

Putting the above into perspective a key question might be: which of the stress reactions, coping styles and sub-scales of subjective well-being need to be used more frequently by infertile women? Having considered this, the present investigation was carried out to compare the stress levels, coping styles, subjective well-being and its sub-scales in fertile and infertile women.

Method

Study population

This analytical cross-sectional study used random sampling method to enroll 60 fertile and 60 infertile women who referred to the fertility care clinics in the city of Kashan between January and May 2015. Written informed consents were obtained from the participants. Patients who agreed to participate in this study were asked to complete the questionnaires. The criteria for infertile women were as follow: age above 20 years, willingness to conceive, being married for at least three years, and having signed the consent to participate in the study. The exclusion criteria were age above 45 years, having any physical illness which prevents them from conceiving, and suffering from any neurological or psychiatric illnesses. The inclusion and exclusion criteria for normal women were the same as infertile women except for having child. Average time since diagnosis (according to the participants' reports) varied from <1 year (49% of the women), 1–3 years (33%), to >3 years (18%). With regard to the type of treatment; 33% were receiving ovulation-inducing medication in the form of pills, 42% were having injections, 12% were undergoing IVF, 8% were given other treatments, and 5% were under assessment with no yet begun treatment.

Assessment tools

Stress symptoms questionnaire, Coping Inventory of Stressful Situations-Short Form (CISS-SF) and the subjective well-being questionnaire were filled by women who agreed to participate in the study. In the next step, the obtained data were statistically analyzed.

Stress syndrome questionnaire: The questionnaire developed Khodayarifard (2006) comprised 50 items. The scale is composed of four domains including physiologic reactions (23 items including headache, hypertension, dry mouth and asthma), emotional reactions (9 items including anxiety, depression, grouch, disappointment and irrational fear), cognitive reactions (7 items including attention deficit hyperactivity disorder, memory loss, and lack self-confidence) and behavioral reactions (11 items including aggression, alcohol, smoking and confusion). Responses were rated on a six-point scale ranging from 0 (never) to 5 (very much). The internal consistency of the questionnaire based on Cronbach's alpha coefficient is 0.81 as well as 0.85, 0.84, 0.85 and 0.85 for its domains, respectively.

Coping Inventory of Stressful Situations-Short Form (CISS-SF): Andler and Parker (1990) designed CISS in order to evaluate various kinds of coping styles in stressful situations including task-oriented (e.g. prioritization of tasks, correction of errors, analysis), emotion- oriented (e.g. self-blame, being nervous, anxiety, tension), and avoidance- oriented (sleeping, eating food, going to a party) coping styles. Avoidance- oriented coping style can be divided into subscales of distraction and social engagement which are evaluated by 8 and 5

questions, respectively. This test consists of 48 questions and every 16-question part focuses on distinct coping dimensions and reply to each question is measured on the 5-point scale from never (1) to very much (5).

The Cronbach's alpha correlations ranged between 0.85 and 0.92 for the dimensions of the scale. The reliability of this scale has been established with the Cronbach's alpha coefficient for the subscales ranging from 0.57 to 0.79. The scale has been shown to have a favorable convergent validity with Ways of Coping Questionnaire ($r=0.68$, $p< 0.01$).

Subjective well-being questionnaire (SWB): The questionnaire was designed by Keyes and Magyar-Moe (2003) and comprises three sub-scales i.e. emotional well-being (12 items), psychological well-being (18 items) and social well-being (15 questions). The Persian version of this questionnaire was validated on 57 subjects by Golestani-Bakht (2007). The correlation of SWB questionnaire with happiness questionnaire of Lyubomirsky and Lepper (1999) was 0.78 as well as 0.76, 0.64 and 0.76 for its sub-scales including emotional well-being, psychological well-being and social well-being, respectively. The internal consistency of the questionnaire based on Cronbach's alpha coefficient was 0.8 and as well as 0.86, 0.8 and 0.61 for its sub-scales, respectively (14).

Results

Descriptive and inferential statistics were used to analyze the data. Descriptive statistics included the means and standard deviations of the variables and inferential statistics comprised the analysis of variance.

As outlined in Table 1, the mean for stress reactions has increased in infertile compared to the fertile group. Coping styles and the sub-scales of subjective well-being in fertile group has increased compared to the infertile group.

The contextual question of our study was: "which of the stress reactions, coping styles and sub-scales of subjective well-being are more frequently used by the infertile women?". As demonstrated in Table 2, there was a significant difference in emotional, cognitive and behavioral reactions between the two groups. In other words, infertile women emotionally, cognitively and behaviorally reacted more than fertile women. Also, there was a significant difference in emotion-oriented reactions between the two groups. Infertile women used more emotion-oriented coping methods and had lower emotional, psychological and behavioral well-being rather than the fertile subjects.

Discussion

While stress per se does not cause infertility, infertility causes stress. The stress which is connected to the holistic issue of infertility creates and intensifies partner conflicts. For many couples, infertility equals crisis and a life disaster giving rise to anxiety and depression which are comparable to feelings associated with a cancer diagnosis (15).

Table 1. Descriptive statistics related to the variables of stress, coping styles and subjective well-being in infertile and fertile women.

		Fertile		Infertile	
		M	SD	M	SD
Stress	Emotional reactions	9.81	6.62	13.70	7.47
	Physiologic reactions	27.25	14.44	25.11	13.32
	Cognitive reactions	6.11	5.74	9.83	6.31
	Behavioral reactions	6.53	5.27	9.63	6.42
Coping styles	Task- oriented	46.06	9.10	47.03	9.66
	Emotion- oriented	40.48	11.03	44.80	10.90
	Avoidance-oriented	42.16	10.64	39.90	8.37
Subjective well-being	Emotional	43.38	7.36	38.83	7.76
	Psychological	59.93	10.47	44.73	5.55
	Social	53.96	11.04	45.45	8.51

Our findings revealed a significant difference between fertile and infertile women in terms of stress reactions. Frequent cognitive, emotional and behavioral responses to infertility include anger, guilt, shock, lowered self-esteem, sexual dysfunction, marital distress, and the feeling of helplessness. Infertile women tend to have more emotional, cognitive and behavioral reactions such as depression, anxiety, frustration, fear as compared to fertile women (16-17). One of the most challenging aspects of the infertility experience is dealing with the emotional ups and downs relating to medical treatment, the uncertainty about outcomes, and the challenge of having to make important decisions such as when "enough is enough". The cognitive reactions and subjective engagement include remarried spouses, relatives' curiosity about their infertility problems and meeting with fertile couples. Abbasi et al (2012) showed that amongst psychological traumas (cognitive, emotional and behavioral), Iranian infertile couples mainly experience cognitive and emotional injuries warranting their need for psychological and counseling interventions (18). Dhillon and Cumming (2000) and Inhorn (2002)

have corroborated such findings in their reports (19-20).

Table 2. Analysis of variance (ANOVA) for the comparison of means of variables in infertile and fertile women

		Mean squares	Sum of squares	Df	f	Sig
Stress	Emotional reactions	49.89	5887	118	9.06	0.00
	Physiologic reactions	193.01	22775		0.70	0.40
	Cognitive reactions	36.42	42.98		11.37	0.00
	Behavioral reactions	34.53	4074		8.34	0.00
Coping styles	Task- oriented	88.16	10403		0.31	0.57
	Emotion- oriented	120.36	14202		4.64	0.03
	Avoidance- oriented	91.72	10823		1.68	0.19
Subjective well-being	Emotional	57.25	6756		10.84	0.00
	Psychological	70.30	8295		98.59	0.00
	Social	97.31	11482		22.36	0.00

Hassanpoor et al (2014) investigated the cognitive and emotional reactions to infertility (21). Cognitive reactions to infertility include the possibility of remarriage, others' curiosity around infertility problem, under-attending wife's regret with observing fertile couples. On the other hand the emotional reactions to infertility include fear, anxiety, worry, loneliness and guilt, sadness and sorrow, depression and regret. Fear and anxiety of infertility disclosure tend to take over many infertile women. Studies comparing infertile with fertile women have reported a negative impact infertility on subjective well-being and global life satisfaction (12-13). Treatments for infertility can also serve as stressors for infertile couples by taxing them physically, emotionally, and financially (22-24).

With respect to coping strategies, Faramarzi et al. (2013) argued men and women infertile who use disproportionally maladaptive coping strategies such as escape and avoidance are predisposed to anxiety and depressive symptoms (25). Aflakseir and Zarei showed that the majority of infertile women tend to use the passive-avoidance coping strategy. Furthermore, those who perceived their infertility problem as meaningful had a low infertility stress, while those who used active-avoidance coping strategies had high infertility stress (26). The employment of proper coping strategies is critical and adaptive coping strategies need to be suggested by counseling centers. The present findings are inconsistent with the results of the study by Bakhshayesh et al (2012). In fact, they did not find any significant difference in problem-centered and emotion-centered coping strategies, depression and anxiety (27).

Subjective well-being and its dimensions are very low in infertile women. Studies have shown that infertility and its treatment effects such as frustration, depression, anxiety, guilt and feelings of worthlessness in life affect many infertile women (28-32). Negative identity, sense of worthlessness and inadequacy, feeling of lack of personal control, anger and resentment, grief and depression, anxiety and stress, lower life satisfaction, envy of other mothers as well as the loss of the dream of co-creating are among the main contributors to the 'emotional roller coaster' and the sense of isolation (33).

It is important for an infertile women to learn how to take care of herself, make sure that she get the support needed, and to manage emotions so that her self-esteem and outlook on life remains as positive as possible.

The present study main limitations were small sample size which likely produced inadequate statistical power for detecting meaningful differences as statistically significant, particularly when controlling for confounding variables and the lack of control for potential confounders.

Conclusion

Infertility affects various aspects of personality and psychology, familial/career performances and relationships. With regard to the fact that certain coping strategies have different impacts on individuals' mental health, it is important to understand which form of coping strategies are used more frequently by infertile women. Infertile women have problems in copying with emotional ability in the process of infertility treatment, therefore consulting a psychologist on how to cope better with infertility problems may be a favorable resolution for psychological burden of the condition.

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