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Reproductive variables and Correlation between Irrational Parenthood Cognition and Destructive Behaviors of Marital Relationship in Infertile Women

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Abstract

Background: Reproductive variables may play an important role on the correlation between irrational parenthood cognition (IPC) and destructive behaviors of infertile couple.
Objectives: The aim of this study was to determine the correlation between IPC and destructive behaviors by reproductive variables in primary infertile women.
Methods: The study was descriptive-analytic. 183 cases of primary infertile women living in Zanjan-Iran and attended to the Infertility Clinic in Ayatollah Mousavi Hospital were investigated from 2015 to the end of 2016. The instrument included a three-part questionnaire of individual and reproductive information, IPC, and the destructive behaviors of marital relationship based on Glaser's choice theory. Data were analyzed by SPSS software using descriptive and Pearson correlation test ($P<0.05$).
***Results*:** There was a significant direct correlation between IPC and destructive behaviors of marital relationship in infertile women ($r=0.47$, $p<0.001$). Based on reproductive variables, the highest correlation was observed in the subgroups of less than 10 years elapsed from the diagnosis of infertility, less than 10 years from the onset of infertility treatment, and the expectation of pregnancy under 10 years, a history of twice unsuccessful in vitro fertilization, a tendency to pregnancy due to the pressure of the others and the cause of the unknown infertility ($P<0.05$). Correlation between IPC and all components of destructive behaviors was significant ($p<0.001$).
Conclusion: Identifying infertile women with high IPC and destructive behaviors is important to educate regarding life skills and provide counseling services.

Key words: reproductive history, irrational cognition, marital relationship, infertility, Iran

Introduction

The desire for childbearing is a deep instinct of human. Human beings need to have children for biological reasons, social, and mental necessities [1]. Infertility is considered as a disability in fertility after 1 year of unprotected intercourse. Infertility has two primary and secondary types and in women with primary infertility, there is not history of previous pregnancy [2]. In Iran the prevalence of primary infertility is reported to be 10.6% [3]. Infertility is a burden from various aspects of social, economic, psychological, and marital relationships. Infertility has negative effects on psychological and sexual relationships

of the couple especially in eastern countries [4]. The socio-cultural context plays an important role in the mental health of infertile people. In some societies, having a child and the identity of motherhood is considered to be the most important role of women, spouses' relationship, and marriages [5].

The negative psychological effects of infertility in women are higher than men [6]. Perhaps, one of the causes of these cultural differences in societies is that in some cultures, the only way to stabilize the status of women in the family and society is to become a mother [5]. So infertile women are more likely to have depression [7] and other psychological problems than general population [8].

Having developed in the last decade, the term Irrational Parental Cognition (IPC) refers to the need for parenting only to have a happier life [9]. By increasing IPC, emotional and psychological complaints intensify [9] and mental health and quality of life decrease [10]. However, based on the Glaser's choice theory, for a happier life, the couple should identify their destructive behaviors which include criticizing, blaming, complaining, nagging, threatening, punishment, and bribing and replace them with caring habits [11].

Some of reproductive variables such as treatment failure, male cause of infertility, and long infertility duration could be an independent factor in developing psychological problems and mental breakdown [6,7]; so, they may have effects on the correlation between IPC and destructive behaviors of marital relationship in infertile women. It seems that there should be a direct relationship between IPC and destructive behaviors of marital relationship, but it is not clear how reproductive variables could affect this relationship. For designing interventional programs these correlations seem necessary.

To the best of our knowledge, no research was found investigating the correlation between IPC and destructive behaviors of marital relationship by reproductive variables in Iranian infertile women in the literature. Considering the researchers' emphasis on the need to reduce IPC [10], the need to improve marital quality and reduce psychological stress in infertility while taking into account the high psychological consequences [4] and low quality of life [9,10] in infertile women, this study was conducted to determine the correlation between IPC and destructive behaviors of marital relationship based on reproductive variables in infertile women referred to Infertility Treatment Center of Ayatollah Mousavi Hospital in Zanjan-Iran in 2016.

Methods

The study was descriptive-analytic. This study was conducted in the Infertility Clinic of Educational and Treatment Center of Mousavi affiliated to Zanjan University of Medical Sciences in Iran. A total of 3456 records were investigated from the opening of the clinic since 2015 through the end of 2016. The sampling took place from the beginning of September 2016 until the end of June 2017. Samples characteristics included primary infertility, having a contact number, residence in Zanjan, unwillingness to participate in the study, not being menopause, divorced, or separated. With the removal of 38 blank and non-informative records, 3418 cases were investigated and 761 primary infertile women were extracted. Out of these, 196 women were living outside of Zanjan, and 168 had no phones. 397 primary infertile women were included in the follow-up list. To increase participation and ensure access to people, the call was repeated up to 10 times at different intervals. 77 people were eliminated because of the impossibility of calling, 14 due to divorce, spouse's death, or separation, 1 due to being in postmenopausal period and 92 due to abortions, current pregnancy or a history of abortion or delivery. Of the 213 records, 198 participants (92.95%) completed the questionnaire after giving informed consent. Ten questionnaires were used to calculate the Cronbach's alpha coefficient and five questionnaires were eliminated because over 20% of the answers were incomplete. Finally 183 completed questionnaires were analyzed.

The instrument of the study included three demographic questionnaires, irrational parenthood cognition scale (IPC), and destructive behaviors of marital relationship based on Glaser's choice theory. The demographic questionnaire consisted of 32 questions with two separate sections. In the

first part of this questionnaire, personal information such as age, occupation and couples' educational background, and marital duration was collected. In the second part of the questionnaire, information regarding reproductive variables was collected including waiting time for pregnancy, time spent on infertility diagnosis, elapsed time from infertility treatment, woman's expectation of successful infertility treatment, cause of infertility according to the patient's record, cause of desire for pregnancy (maternal motivation, pressure of the family members, both, and etc.), having a history of infertility treatment, the type of treatment (drug, Intrauterine Insemination (IUI), and In Vitro Fertilization (IVF)), and the frequency of IUI and IVF.

The second questionnaire was the IPC scale provided by Fekkes et al in the Netherlands. This was a 14 items questionnaire on a 5-point scale from 0-4 (completely agreement=0, completely disagreement=4) with a score range between zero to 56. Having a higher score reflects a stronger need for a child just to have a happier life. The scale reliability in the Netherlands was confirmed by Fekkes et al with a Cronbach alpha of 0.87 [9]. In Alami et al. study the reliability of Persian version of the scale was proved with Cronbach's alpha coefficient 0.84, and its validity was confirmed by content validity [12]. In this study, the reliability of the Persian version of this scale was confirmed by Cronbach's alpha coefficient of 0.91.

The third Questionnaire was destructive behaviors of marital relationship based on Glaser's choice theory which was designed by Mohammadi et al. (2015) in Iran. This was a 46 items 5-point scale rating from 1-5 (always=5, never=1) with a score range 46 to 230. This scale measures the destructive behaviors of marital relationship including criticizing (items: 1, 2, 9, 10, 14, 31, 36, 40), blaming (items: 4, 7, 8, 30, 32, 37), complaining (items: 20, 22, 25, 33, 38), nagging (items: 3, 5, 11, 21, 24, 39, 41), threatening (items: 6, 15, 16, 18, 34, 44), punishment (items:13, 19, 23, 26, 27, 29, 42, 43), and bribing (items:12, 17, 28, 35, 45, 46). The reliability of this scale was confirmed by Mohammadi et al. with a Cronbach alpha of 0.95 [13]. In this study, the reliability of the scale was confirmed with Cronbach's alpha coefficient of 0.94. The Kolmogrov-Smirov test showed that all variables had a normal distribution. Demographic and reproductive variables were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviations). Pearson correlation test was used to determine the correlation between destructive behaviors of marital relationship and its subscales and IPC. The data were analyzed by SPSS, version 16. P-value was considered significant if it was less than 0.05.

Results

In this study, 44.8% of primary infertile women were under 30 years of age, 35% had high school education, and 80.9% were housewives. In 41% of study samples 5 to 10 years was spent from their marriage and in 82.5% of them 10 years was spent from infertility diagnosis. In 84.7% of women since the onset of infertility treatment, and in the 79.3% of women waiting time for pregnancy was less than 10 years. About 77.6% of samples received drug treatment, while 31.1% experienced IUI treatment and 20.8% had IVF treatment, and some experienced a combination of treatments. The main reason for tendency to pregnancy of 56.3% of women's was maternal motivation, 2.7% significant others pressure and 38.8% both mentioned causes. The cause of infertility in 46.4% of the cases was female, in 17.5% male, and in 19.7% both gender. In 16.4% the cause of infertility was found unknown (Table 1).

Table 1: Demographic and Reproductive Characteristics of Infertile Women Attending to Ayatollah Mousavi Medical Center

Variable		Frequency	Percentage
Age of the woman (years)*		32.31	6.50
Age of spouse (years)*		36.36	6.87
Woman's education (years)*		6.61	2.27
Spouse's education (years)*		6.39	2.13
Woman's job (housewife)		148	80.9
Man's job	Unemployed	6	3.27
	Worker	92	50.27
	Employee	43	23.49
	Other	42	22.95
Duration of marriage (years)	Under 5	63	34.4
	5-10	75	41
	Over 10	45	24.6
Duration of infertility diagnosis (years)	Under 5	106	57.9
	5-10	45	24.6
	Over 10	32	17.5
The waiting time for pregnancy (years)	Under 5	96	52.5
	5-10	49	26.8
	Over 10	38	20.8
Duration of the onset of infertility treatment (years)	Under 5	120	65.6
	5-10	35	19.1
	Over 10	28	15.3
Previous treatment history	Drugs	142	77.6
	IVF	38	20.8
	IUI	57	31.1
The frequency of IVF	Once	18	9.8
	Twice	12	6.6
	Three Times and More	8	4.4
The main cause of the desire for pregnancy	Maternal motivation	103	56.3
	Others' pressure	5	2.7
	Both	71	38.8
	Missing	4	2.2
The cause of infertility according to the case	Female	83	45.4
	Male	39	21.3
	Both	26	14.2
	Unknown	35	19.1

***Mean and standard deviation**
IVF: In Vitro Fertilization, IUI: Intra Uterine Insemination

In primary infertile women, there was a significant direct and positive correlation between IPC and destructive behaviors of marital relationship (r=0.47, p<0.001). Besides, there was a significant direct correlation between IPC and the seven destructive behaviors of marriage based on Glaser's choice theory (p<0.001) (Figure 1).

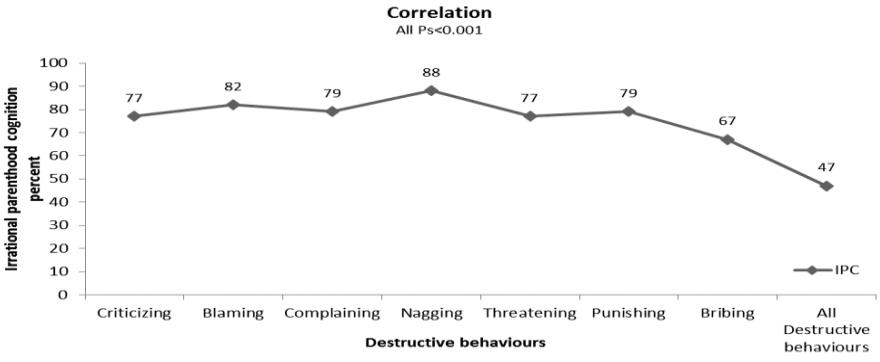

Figure 1: correlations between irrational parenthood cognition and destructive behaviors of marital relationship in infertile women

In correlation between IPC and destructive behaviors, the most significant correlation was found between the time spent on the diagnosis of infertility between 5 to 10 years ($r=0.55$, $p<0.05$), the 10 years waiting time for pregnancy ($r=0.54$, $p<0.05$), and the spent time from the onset of infertility treatment between 5 to 10 years ($r=0.56$, $p<0.05$). In women with a history of unsuccessful IVF treatment, the most significant correlation was found between women who had twice failed IVFs ($r=0.68$, $p<0.05$). The most significant correlation was observed in women with a tendency to pregnancy due to others' pressure ($r=0.91$, $p<0.05$). The most significant correlation was between IPC and unknown infertility ($r=0.64$, $p<0.05$).

In the reproductive subgroups of the time interval on infertility diagnosis under 5 and 5 to 10 years, the waiting time for pregnancy under 5 years, the elapsed time from the onset of infertility treatment under 5 years, doing or not doing IVF treatment, maternal motivation as the main reason for pregnancy, and the unknown and female infertility, there were direct positive correlations between IPC and all destructive behavior components($p<0.05$) (Table 2).

Table 2: Correlation of irrational parental cognition with destructive behaviors of marital relationship and its components in infertile women according to reproductive characteristics

Variables**		Destructive behaviors of marital relationship							
		Criticism	Blaming	Complaining	Nagging	Threatening	Punishment	Bribing	Total scores
Duration of infertility diagnosis (years)	Under 5	0.36*	0.47*	0.43*	0.48*	0.36*	0.32*	0.44*	0.51*
	5-10	0.35*	0.52*	0.46*	0.54*	0.39*	0.4*	0.33*	0.55*
	Over 10	-0.00	0.06	0.23	0.12	0.22	-0.06	0.03	0.09
The waiting time for pregnancy (years)	Under 5	0.36*	0.45*	0.42*	0.44*	0.30*	0.34*	0.48*	0.50*
	5-10	0.37*	0.51*	0.45*	0.55*	0.46*	0.37*	0.25	0.54*
	Over 10	0.02	0.24	0.35*	0.29	0.25	0.06	0.21	0.26
Duration of treatment beginning (years)	Under 5	0.37*	0.48*	0.41*	0.49*	0.36*	0.3*	0.45*	0.51*
	5-10	0.32	0.53*	0.58*	0.53*	0.44*	0.46*	0.28	0.56*
	Over 10	-0.03	-0.07	0.15	-0.01	0.11	-0.12	-0.04	-0.02
IVF	Yes	0.39*	0.50*	0.43*	0.39*	0.44*	0.35*	0.39*	0.51*
	No	0.26*	0.42*	0.43*	0.47*	0.33*	0.26*	0.36*	0.46*

The frequency of IVF	Once	0.36	0.52*	0.40	0.34	0.43	0.51*	0.33	0.49*
	Twice	0.65*	0.51	0.62*	0.48	0.55	0.34	0.63*	0.68*
	Three times or more	-0.29	-0.46	-0.50	-0.33	-0.18	-0.64	-0.47	-0.51
The main cause of the desire for pregnancy	Maternal motivation	0.26*	0.39*	0.37*	0.44*	0.37*	0.29*	0.30*	0.43*
	Others' pressure	0.91*	0.96*	0.82	0.97*	0.72	0.84	0.93*	0.91*
	Both	0.10	0.34*	0.37*	0.35*	0.19	0.03	0.30*	0.31*
The cause of infertility according to the case	Male	0.33*	0.42*	0.46*	0.44*	0.35*	0.25*	0.28*	0.46*
	Female	0.22	0.49*	0.40*	0.46*	0.43*	0.35*	0.28	0.44*
	Both	0.32	0.43*	0.34*	0.53*	0.28	0.14	0.39*	0.46*
	Unknown	0.40*	0.55*	0.55*	0.53*	0.41*	0.49*	0.61*	0.64*

*P<0.05
**Pearson correlation test
IVF: In Vitro Fertilization

Discussion

Based on the results of the research on primary infertile women, there was a significant direct correlation between IPC and destructive behaviors of marital relationship.

With an increase in the IPC, the destructive behaviors increased while these changes were higher in certain subgroups of women. The existence of a significant direct correlation between IPC and destructive behaviors of marital relationship in infertile women was consistent with the inverse relationship between IPC and quality of life in infertile women [9, 10]. Perhaps in infertile women with decreasing quality of life [9, 10] and mental health [4] along with increased mood disorders [14], destructive behaviors and IPC increase.

Regarding the spent time from the diagnosis of infertility, there was highest direct correlation between IPC and destructive behaviors in the subgroups of the less than 10 years from the onset of infertility treatment and the waiting time for pregnancy. In women with fewer than 10 years of infertility diagnosis, the correlation between IPC and all of the components of destructive behaviors was significant. The findings are consistent with studies that show with increasing in the duration of infertility and marriage, mental health and marital and life qualities are improving [15]. It seems that with spending years from infertility diagnosis and attempting to become pregnant, the IPC is reduced [10]; and with increasing individual maturity and communicative power of couple, the infertility is accepted and destructive behaviors are reduced.

In women who received IVF treatment once or twice, there was a significant direct correlation between IPC and destructive behaviors. The highest correlation was observed in women who had experienced unsuccessful IVF treatment twice. Failed IVF cycles and unsuccessful therapies have been accompanied by a decline in the quality of life [16,17], mental health, and marital quality [18]. Infertility and different methods of infertility treatment are stressful. In treatments which the number of previous therapies and failures are greater, the psychological disorders are more and the quality of life and satisfaction of couples are less [19].

Regarding the reason for the inclination to pregnancy, there was a significant direct correlation between IPC and destructive behaviors of marital relationship in all infertile women. The highest correlation between IPC and the destructive behaviors was observed in the tendency to pregnancy due to the pressure of others. Also, there were direct positive correlations between IPC and all destructive behavior components in women who had tendency to pregnancy due to maternal motivation. Infertile women due to the pressure of their husbands and their families experience a high level of anxiety and depression [20]. In some societies, the identity of motherhood is considered

to be the most important role of a woman, and it affects the relationship between couples and marriage, negatively [5]. It seems that these factors are in place altogether in the correlation between having a tendency towards pregnancy due to the pressure of the relatives and the mother's motivation with the study variables.

In all causes of infertility, especially infertility with unknown cause, there was a significant direct correlation between IPC and destructive behaviors. In female and unknown infertilities, a correlation was found between IPC and all destructive behavior components. The results were consistent with a study that showed couples with unknown infertility causes are unable to control stress of theirselves and report more somatic complaints [21]. Perhaps, when the cause of the infertility is unknown, none of the couples support the other one. Besides, when women were the cause of infertility, their destructive behaviors increased which could be logical due to the importance of childbearing and escalating psychosocial pressures. It seems that the identification of primary infertile women with high IPC and destructive behaviors of marital relationship and providing counseling and education of behavioral and communication skills to them might lead to decreased IPC and destructive behaviors. Therefore, the establishment of counseling centers in infertility treatment centers seems vital.

Assessing the experience of infertility in the community supports health policies and creates a way to improve conditions [22]. Such studies support fertility programs by identifying problems and providing solutions. One of the limitations of this study was the lack of a classification case system at the Mousavi infertility center, the failure to find a telephone number in some paper files, and the lack of telephone access to some women. Access to some women was not possible due to the limitation of the study and despite the time spent on the extraction of data. A proper classification or complete filing of information in a paper file or the establishment of an electronic registration system in the infertility treatment centers may cause to more efficient use of existing data and information.

There was a significant direct correlation between IPC and marital destructive behaviors in primary infertile women. The correlation among the cited variables, especially in certain subgroups of women, was higher. Identifying women with high IPC and high marital destructive behaviors is important to provide counseling and life skills education. By identifying specific subgroups of women, providing timely counseling and life skills education, we could prevent from increase in IPC and marital destructive behaviors

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References

1. Boivin J, Kentenich H. Guidelines for counselling in infertility: ESHRE Special Interest Group on Psychology and Counselling; 2002.

2. World Health Organization. Sexual and reproductive health: Infertility definitions and terminology 2013. Available from: http://www.who.int/reproductivehealth/topics/infertility/definitions/en/.

3. Parsanezhad ME, Jahromi BN, Zare N, Keramati P, Khalili A, Parsa-Nezhad M. Epidemiology and etiology of infertility in Iran, systematic review and meta-analysis. J Womens Health, Issues Care. 2016; 2013.

4. Luk BH-K, Loke AY. The impact of infertility on the psychological well-being, marital relationships, sexual relationships, and quality of life of couples: A systematic review. Journal of sex & marital therapy. 2015; 41(6): 610-25.

5. Loke AY, Yu PL, Hayter M. Experiences of sub-fertility among Chinese couples in Hong Kong: A qualitative study. Journal of clinical nursing. 2012; 21(3-4): 504-12.
6. Karimi FZ, Taghipour A, Roudsari RL, Kimiaei SA, Mazlom SR, Amirian M. Cognitive emotional consequences of male infertility in their female partners: a qualitative content analysis. Electronic physician. 2015; 7(7): 1449-57.
7. Omani-Samani R, Maroufizadeh S, Almasi-Hashiani A, Amini P. Prevalence of depression and its determinant factors among infertile patients in Iran based on the PHQ-9. Middle East Fertility Society Journal. 2018.
8. Hanson B, Johnstone E, Dorais J, Silver B, Peterson CM, Hotaling J. Female infertility, infertility-associated diagnoses, and comorbidities: a review. Journal of assisted reproduction and genetics. 2017; 34(2): 167-77.
9. Fekkes M, Buitendijk S, Verrips G, et al. Health-related quality of life in relation to gender and age in couples planning IVF treatment. Human Reproduction. 2003; 18(7): 1536-43.
10.Fardiazar Z, Amanati L, Azami S. Irrational parenthood cognitions and health-related quality of life among infertile women. Int J Gen Med. 2012; 5: 591-96.
11.Glasser W, Glasser C. Getting together and staying together: Solving the mystery of marriage: Harper Collins; 2010.
12.Alami M, Amanati L, Shokrabi S, Haghani H, Ramezanzadeh F. Factors influencing quality of life among infertile women. Iran Journal of Nursing. 2009; 21(56): 27-35.
13. Mohamadi S, Pirkhaefi Al. Construction and standardization of Quality of Marital Relationships (QMR) Scale based on Glasser's Choice theory. Educational Managment. 2015; 5(18): 45-76.
14. Shoaib A, Shah SZ, Ahmad R, Mansoor A. Comparison of Anxiety, Depression and Mood Disturbances Among Fertile and Infertile Women. Ann Pak Inst Med Sci. 2016; 12(4): 230-4.
15.Jisha PR, Thomas I. Quality of Life and Infertility: Influence of Gender, Years of Marital Life, Resilience, and Anxiety. Psychological Studies. 2016; 61(3): 159-69.
16.Maroufizadeh S, Ghaheri A, Omani Samani R. Factors associated with poor quality of life among Iranian infertile women undergoing IVF. Psychology, Health & Medicine. 2017; 22(2): 145-51.
17.Agostini F, Monti F, Andrei F, Paterlini M, Palomba S, La Sala GB. Assisted reproductive technology treatments and quality of life: a longitudinal study among subfertile women and men. Journal of assisted reproduction and genetics. 2017; 34(10):1307-15.
18. Wang K, Li J, Zhang JX, Zhang L, Yu J, Jiang P. Psychological characteristics and marital quality of infertile women registered for in vitro fertilization-intracytoplasmic sperm injection in China. Fertility and Sterility. 2007; 87(4): 792-8.
19. Tao P, Coates R, Maycock B. Investigating Marital Relationship in Infertility: A Systematic Review of Quantitative Studies. Journal of Reproduction & Infertility. 2012; 13(2): 71-80.
20. Farzadi L, Ghasemzadeh A. Two main independent predictors of depression among infertile women: an Asian experience. Taiwanese journal of obstetrics and gynecology. 2008; 47(2): 163-7.
21. De D, Roy PK, Sarkhel S. A psychological study of male, female related and unexplained infertility in Indian urban couples. Journal of Reproductive and Infant Psychology. 2017; 35(4): 353-64.
22.Centers for Disease control and Prevention. CDC Programs and Activities: Reproductive Health 2015. Available from: https://www.cdc.gov/reproductivehealth/infertility/resources.html.