

# Self-Concept Among Infertile Women Receiving Oocyte Donation and Fertile Women

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## Research

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# Abstract

**Background:** One of the technologies used to assist fertility is oocyte donation. Although there is sufficient information about medical aspects of oocyte donation; the psychological aspects of this treatment are not well-known. Self-concept investigates psychological aspects of people and therefore the aim of this study is aimed to compare self-concept of infertile women undergoing oocyte donation and fertile women.

**Method:** In this descriptive-analytical study, 106 women selected using convenience sampling were divided into two groups of infertile women undergoing oocyte donation and fertile women. Data gathering tool in this study was two questionnaires including demographic information questionnaire and Rogers' standardized self-concept questionnaire. Data was analyzed using chi-square and t-test with the help of SPSS20 software.

**Results:** The findings showed that self-concept of the majority of participants in both groups were weak. The score of infertile women undergoing oocyte donation was higher than fertile women and the difference between two groups was significant ( $P=0.045$ ).

**Conclusion:** Based on the results, it can be said that infertility and treatment using oocyte donation weakens one's self-concept. Therefore, it is necessary for authorities to make arrangements in order to evaluate mental health of infertile women undergoing oocyte donation.

## Plain English Summary:

Today, there are a variety of treatment options for infertility and oocyte (egg) donation is one of integral part of modern assisted reproductive care. Women with premature ovarian failure or fast ovarian reserve were considered irreversibly sterile until about 20 years ago but oocyte donation is, at present, the only effective therapy for the treatment of them. Unfortunately, the psychological aspects of this treatment in Iranian infertile women are not well-known and whereas self-concept can examine the psychological dimensions of people, the present research will provide some information about the mental status of this group of women compared to fertile women. Using a descriptive-analytical method, this study will be conducted on 106 women (53 people in each group). For gathering the data will use a questionnaire which consisted of two parts. The first part is the demographic data and second part is Rogers' self-concept questionnaire that consists of forms (a) and (b), with each form investigating 25 personality traits. If calculated self-concept score is between zero to 6, it is natural and normal while scores higher than 7 show weak and negative self-concept. The average self-concept score of infertile women undergoing oocyte donation was  $11.56 \pm 3.9$  which was higher than the average self-concept score of fertile women ( $10.05 \pm 3.68$ ). According to the scores self-concept of the majority of participants in both groups were weak, but self-concept in infertile women undergoing oocyte donation is weaker.

This survey underlines the enormous need for n the psychological issues of infertile women receiving

# Introduction

Infertility is a biological, psychological and social phenomenon. This means that the psychological, physiological, environmental and personal aspects of this condition interact with each other. As a result, infertility can't simply be considered a disorder in normal operation of one of organs but instead is a condition with various important dimensions that must be considered (1). World Health Organization (WHO) defines infertility as a major problem in fertility health with physiological, psychological and social implications (2). In the second half of twentieth century, great advancements have been made in assisted reproductive technologies (ART) and depending on the type of infertility, methods such as internal cytoplasmic sperm injection (ICSI), Intrauterine insemination (IUI), In-vitro fertilization (IVF) and using donated oocytes are used in most countries including Iran to treat couples suffering from this condition (1).

Novel treatment methods for infertility are complex and cause a great deal of stress. Stress and its psychological consequences can be one of the factors reducing the chances of success in these treatments. Mastrz et.al. believe that usually, medical treatments and interventions are tolerable for a short period of time regardless of their difficulty but treatments for chronic conditions that continue for long and undetermined periods of time can become overwhelming (1).

Women often worry that their position and security might be affected by their infertility and feel intense loneliness. In this situation, using donated oocytes from another person in their treatment can be a very stressful experience (3).

By comparing various indexes such as stress, anxiety, depression, self-worth and quality of life, it is possible to compare the psychological situation of different individuals. However, nowadays, many researchers believe that the most common behavioral problems and disorders are related to one's idea of "self" and the results of various studies show that the feeling of a person toward their "self" can affect their behavior in many situations (4). Psychologists believe that there is a close relation between knowing one's "self" and emotions (5) and uncoordinated and disjointed beliefs about one's "self" can lead to emotional and affective problems (6).

Self-concepts can fundamentally define emotional and psychological dimensions of people and play an important role in guiding behaviors (7).

Understanding of self or "self-concept" is a mixture of beliefs and emotions of people toward themselves which is gained based on the reactions of other individuals (8). Self-concept is one of the main components of Rogers' theory and is the combination of features that a person understands about itself as a unique individual. Self-concept is gained through social relations. Rogers believes that through interactions with other people in the environment, a concept of self is developed that is mainly based on evaluations of others. People evaluate themselves based on what others see and not based what they themselves feel. According to Rogers, people value evaluations of others due to their need for positive

Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js people give more value to the evaluations of

others about themselves compared to their own self-evaluation. This concept of self can then affect one's understanding about the world and behaviors shown in different situations (9).

Self-concept is very important to mental health specialists because one's concept about themselves can greatly affect their understanding about their environment. If this concept is positive and balanced, a person can have a healthy mind and conversely a negative and unbalanced self-concept can lead to an unhealthy psyche and mind (10).

Due to great technological advances and widespread use of oocyte donation for treatment of infertile couples, and also due to cultural and social importance of infertility in Iran, limited number of studies in regards to oocyte donation and comparison between mental health of fertile women and women undergoing oocyte donation and contradicting results in this area and since no study has previously investigated the self-concept of infertile women; this study aims to investigate the self-concept of fertile women and infertile women nominated for oocyte donation and compare the results of these two groups.

## Methods:

The current descriptive – analytical study was carried out in Royan infertility center and healthcare center affiliated with Tehran University of Medical Sciences from December 2015 to December 2017. This study approved by the Ethics Committee of Tehran University of Medical Sciences in Tehran, Iran. After acquiring the necessary permissions from authorities, people were included into the study based on the inclusion criteria.

### Setting:

Royan Institute is a referral infertility clinic located in Tehran, Capital of Iran, which has patients from all around the country. Iran has a health care network which covers women and children. In these centers baby monitoring, family planning, vaccination and women health care is offered. This network has numerous health care centers in each town and village including Tehran.

### Participants:

The study population consisted of infertile women under consideration for oocyte donation and fertile women. It is worth noting that infertile women included those who had been considered for this treatment based on their physicians' recommendations and had started the treatment and fertile women participating in this study included women with at least one child that visited the healthcare center for growth monitoring or vaccination of their children. Informed consent will be obtained from the participants in the research.

### Inclusion and exclusion criteria:

The common factors among both groups included age of 18 to 49, not using sedative and anti-anxiety drugs, lack of addition and drug abuse and no

history of cancer. These factors were determined by questioning each individual. The inclusion criteria for fertile women was lack of previous history of infertility and having at least one child. The exclusion criteria for this group was not filling all parts of the questionnaire. Written and informed consent of all participants was acquired and all participants were assured about the confidentiality of their information.

Data collection tools:

We used two questionnaires. First, a demographic questionnaire including age, education, spouse's education (university education and other types of education), marital status, socioeconomic level (self-perception), job was used (housewife, working) and place of residence (urban or rural). Second self-concept questionnaire introduced by Carl Rogers in 1961 (Rogers 2012) and its Persian version was validated by Nourbakhsh et al in 2004 (Nourbakhsh 2004). It has two same questionnaires (A, B) both forms contain 25 pairs of opposite adjectives. In first form, self determination is asked and in the second one their ideal personality was required.

The time necessary for this test is 20 minutes. The scoring scale of the questionnaire is a seven-point score for personality traits with the participants selecting one of the numbers for these traits with no question remaining unanswered. Participants are asked to selected one of the numbers between 1 to 7 for each trait, selecting the number based on how close or far they are form a personality trait. Participants score their real characteristics in form (a) and their ideal characteristics in form (b). Finally, the difference between the score of form (a) (real traits) and score of form (b) (ideal traits) is the self-concept score of the individual. If this score is between zero to 6, then self-concept is natural and normal while scores higher than 7 show weak and negative self-concept. In other words, high self-concept score means noncompliance between a person's real and ideal self. In the study by Taghi Zadeh et.al. the reliability of questionnaire was determined using Cronbach's Alpha to be 0.69 for form (a) and 0.63 for form (b) (11).

Ethical considerations:

Cases were free to participate in the study and they were assured that participating is not related to their treatment or care procedure. Cases were told that no personal data would be published and the results would be presented statistically. At the end, their permission to publish the results was gotten. Completing the questionnaire with the above explanation was considered as their consent.

Sample size and sampling:

Based on the results of pilot study and using confidence limit of 95% and test power of 80%, the optimum number of samples in each group was calculated to be  $48 \cong 473/$ . After considering the abscission percentage, 53 samples were selected for each group for a total of 106 individuals. Participants were selected using convenient sampling method.

## **Data analysis:**

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The statistical analysis of the questionnaires was performed using SPSS (Version 20). All demographic parameters were summarized in descriptive statistics. The chi-square test and independent t-test was used for testing categorical data between groups. P-values less than or equal to 0.05 were considered statistically significant.

## Findings:

The average age was  $35.6 \pm 5.3$  for infertile women undergoing oocyte donation and  $35.5 \pm 5.04$  for fertile women. Most of women in both groups were in the age group of 35–40 years old. There was no significant difference in the age of two groups ( $P = 0.73$ ). Most people in both groups has non-academic education with no significant difference between education level of two groups ( $P = 0.62$ ) The majority of women in both groups were housewives and most lived in urban areas. The financial status of participants was divided into three categories of low, middle and high income which was carried out based on the opinions of participants about their own financial situation and not based on a defined income limit. The results showed that most participants were in the middle-income group and there was no significant difference between the income of two groups ( $P = 0.45$ ). (Table 1).

The average self-concept score of infertile women undergoing oocyte donation was  $11.56 \pm 3.9$  which was higher than the average self-concept score of fertile women ( $10.05 \pm 3.68$ ). This shows a weaker self-concept in infertile women undergoing oocyte donation. Also, according to the results in Table 2, the majority of people in both groups, which included 90.6% of infertile women and 69.8% of fertile women, had weak self-concepts. There was a significant difference between average self-concept score of two groups ( $P = 0.045$ ).

Table 1  
Frequency and percentage of demographic factors of both groups of women

Demographic factors		Infertile women		Fertile women		P-value for Chi-square test
		Frequency	Percentage	Frequency	Percentage	
Women's education	Academic	34	64.2	38	71.7	0.71
	Non-academic	19	35.8	15	28.3	
Spouse education	Academic	35	66	39	73.6	0.62
	Non-academic	18	34	14	26.4	
Women's occupation	Housewife	38	71.7	21	77.4	0.69
	Working	15	28.3	14	22.6	
Place of residence	Urban	50	94.3	53	100	0.166
	Rural	3	5.7	0	0	
Financial situation	Low-income	17	32.1	17	32.1	0.45
	Medium-income	35	66	35	66	
	High-income	1	1.9	1	1.9	

Table 2  
Comparing the self-concept scores of infertile women undergoing oocyte donation and fertile women

Group	Natural self-concept (0–7)	Weak self-concept (higher than 7)	P-Value
	Frequency (percent)	Frequency (percent)	
Infertile women	5(9.4)	48(90.6)	P = 0.045
Fertile women	16(30.2)	37(69.8)	

## Discussion And Conclusion

The current study compared self-concept in infertile women undergoing oocyte donation and fertile women. Searching in various databases showed no similar study, therefore studies in different groups and studies on infertile women considered for oocyte donation are used as reference in this section.

Findings about self-concept that directly affects a person's mental health (12) shows a low self-concept score in most of infertile women under consideration for oocyte donation and the majority of fertile

women. These findings are similar to those reported by Souter (2008) who investigated the mental health of infertile women under treatment and showed that their mental health is lower than the average mental health in the society (13).

Based on the study by Dr. NourBala (2008), one of the most important stress factors causing mental problems in infertile women is the feedbacks and reactions of other people regarding their problem. As is evident in the definition of self-concept, people evaluate themselves based on what others believe not based on their own feelings. Therefore, it can be said that one of the most important reasons for low self-concept in infertile women is the reactions of their acquaintances (1).

The study by Ali Dousti et.al. (2016) investigate the self-concept of pregnant women with high risk and low risk pregnancies. The results showed that the self-concept score in pregnant women with high risk pregnancies is in the negative and weak area and that there is a significant difference between self-concept score of these two groups. It might be possible to say that infertility and treatment using donated oocyte similar to high risk pregnancy can lead to higher amounts of stress, anxiety and mental problems (14).

The results of this study showed that a higher percentage of fertile women have positive self-concept compared to infertile women. However, such a significant difference was not observed in the study by Taghizadeh et.al. who have investigated the self- concept of women receiving oocyte donation and those donating oocyte with the self-concept being negative in both groups. This difference in results can be due to higher self-concept of fertile women after experiencing childbirth and believing that they have the ability to reproduce without need for treatment or using donated oocyte (11).

Sanam Nejad in his study (2011) investigated the self-concept in people with and without romantic failures and the results showed that the self-concept of people with romantic failures is lower than that of people without such failures. Despite the difference in target audience, since infertility is often described as the biggest failure in life, infertile women will be faced with mental problems and low self-concept similar to those with romantic failures (15).

The results reported by Safavi (1392) who investigated self-concept and its relation to quality of life in diabetic patients, showed that there is a direct relation between self-concept and quality of life. This study showed that people suffering from chronic diseases but with a positive self-concept can better cope with their condition. This can also be applied to infertile women with long history of problems. Despite the different target group, since infertility can be considered a chronic condition, infertile women are vulnerable to mental problems similar to those with diabetes and their mental state can greatly affect their self-concept (16).

Based on the results of this study, one must acknowledge that in oocyte donation treatment, physiological evaluation alone is not enough and attention to mental health of patients is an essential part of the process. Stress, hopelessness and feeling of shame due to infertility can have devastating and

Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js ). Psychological pressures felt by women can

lead to unsuitable communication and coordination during treatment. Therefore, treatment teams directly work with women that not only need physical treatment but also require mental and emotional support (18). These findings can help healthcare authorities and healthcare providers to take proper measures in order to provide mental health support for these women and implement plans in order to prevent mental health consequences of treatment using oocyte donation. This can be a worthwhile investment for improving the mental health of women.

## **Declarations**

### **Acknowledgment**

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### **Authors' contributions**

MR, MA, PS and LA were involved in study design and drafting of the manuscript. MR was responsible for implementation of methods, data gathering, data analysis and, proofreading of manuscript. MA will review and was involved in data analysis and proofreading of manuscript. PS was responsible for data analysis. LA development and implementation of methods, proofreading of manuscript. All authors read and approved the final manuscript.

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### **Availability of data and materials**

Not applicable.

### **Ethics approval and consent to participate**

Ethical approval for this study has been obtained by the ethics committee affiliated with Tehran University of Medical Sciences, Tehran, Iran

### **Consent for publication**

Not applicable.

### **Competing interests**

The authors declare that they have no competing interests.

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