

Expectations and Preferences of Iranian Infertile Couples from Healthcare System after Unsuccessful Treatment with Assisted Reproductive Technologies

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ARTICLE INFO	ABSTRACT
<i>Article type:</i> Original article	Background & aim: Increased number of unsuccessful cycles of infertility treatments might result in an increase in couples' physical and psychological problems, which affect their expectations from family, society and healthcare system. The present study aimed to explore the expectations and preferences of Iranian infertile couples from healthcare system after unsuccessful treatment with assisted reproductive technologies.
<i>Article History:</i> Received: 06-Aug-2019 Accepted: 07-Sep-2019	Methods: This descriptive qualitative study was carried out during 2016-2017 in one of the referral infertility clinics in Mashhad, Iran. Data collection was completed through face-to-face semi-structured interviews with 29 infertile couples selected by purposive sampling. The collected data were analyzed in four stages according to the Graneheim and Lundman (2004) using MAXQDA software (version 2010).
<i>Key words:</i> Infertile couples Unsuccessful treatment Assisted reproductive technology Healthcare system	Results: The overarching theme of "expecting improvement of treatment process" included three categories of expecting enhancement of therapeutic and healthcare services, demanding financial services, and requesting for more male involvement in the treatment process were emerged. Infertile couples expected continuous high-quality follow-up appointments and requested for a systematic recording of infertility-related data. They also expected that healthcare system provide them the basis for a wide range of governmental facilities including medical loans with low interests and insurance facilities. Additionally, they preferred that physicians to communicate with both partners during consultation and expected healthcare system to provide counselling centers for male partners.
	Conclusion: Understanding infertile couples' expectations and preferences from healthcare system after unsuccessful infertility treatment could help policy makers to adopt appropriate policies and programs to meet these vulnerable population needs, so that improve their treatment outcomes.

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Introduction

Infertility is considered as an index of fertility health and is an important universal issue (1).

Throughout the world, the infertility rate in women of reproductive age has been estimated

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as at least 15% and 40.5 million women seek treatments in this regard (1). In a systematic review, infertility prevalence in Iran was reported to be 5.5-25% (2). Direkvand Moghaddam et al. (2016) in a systematic review titled "An investigation of the worldwide prevalence of infertility" reported that the mean of infertility in the world is 10% (95% confidence interval: 8-12). The minimum and maximum prevalence of infertility have been reported in Australia and Africa, respectively. Infertility has been shown to have an increasing trend in most parts of the world during recent years (3).

Female infertility accounts for 35% of cases, while 35% are due to male factor infertility. The remained 30% of the infertility issues might be attributed to combined problems in both partners (1). Various treatments for infertility are rapidly growing that could be a stressful issue for infertile couples (4). Around half of the infertile couples throughout the world seek infertility treatments (5). Women under treatment with assisted reproductive technologies (ARTs), often suffer from anxiety and depression due to infertility and uncertain outcomes (4).

Despite the high expenses and physical efforts for in-vitro fertilization (IVF), this technique is not successful in many couples. Although nowadays the success of infertility treatment has elevated about four times, compared to more than 15 years ago, but still the success rate is low. Currently, only 25% of the attempts for IVF results in a live birth, while 75% are failed (6). Increased unsuccessful treatment cycles has led to physiological as well as psychological problems in women, which could threaten the ARTs treatment outcomes (7).

The mental, physical, economic, and social pressures due to infertility treatments cause infertile patients to cease treatment before examining all the different therapeutic options (8). The feelings and emotions related to infertility, including depression, anger, anxiety, losing control, shame, inability, and isolation might be overlooked in the course of infertility treatment. Therefore, the therapeutic service providers may consider infertility as a medical condition and not a holistic issue for taking care of infertile couples (1).

A qualitative study indicated that infertile couples preferred to complete their treatment in specialized infertility centres with a limited number of personnel and short waiting times (9). Ebrahimzadeh et al. (2019) found in their study that the expectations of infertile couples are not met after the unsuccessful treatment in infertility centres. Infertile couples stated that they needed psychological support, more beneficial information, inclusive support, and access to supplementary services (10). Another study showed that infertile couples experience psychologically stressful issues and systemic challenges after an unsuccessful infertility treatment (11). Diverse studies in Iran have investigated different aspects of infertility including the resources for coping with infertility (12, 13), the influence of infertility counselling on coping strategies (14), perceived stress due to infertility (15), marital satisfaction in infertile females undergoing IVF (16), and the experiences and preferences of infertile women about infertility counselling (17). However, to the best of our knowledge, no study has assessed the expectations and preferences of infertile couples from the healthcare system after the unsuccessful treatment. On the other hand, understanding infertile couples' expectations and preferences from healthcare system after unsuccessful infertility treatment could help policy makers to adopt appropriate policies and programs to meet these vulnerable population needs and to provide high quality infertility services, so that improve their treatment outcomes. With this background in mind, the present study aimed to explore the expectations and preferences of Iranian infertile couples from the healthcare system after unsuccessful treatment with ARTs.

Methods

This study used a descriptive qualitative design, which focuses on the who, what, and where of the experience and is an eclectic but reasonable combination of sampling, data collection, analysis, and re-presentation techniques. It is particularly appropriate for gaining insight into the experiences of patients about a specific topic and could be used to provide data for intervention development studies as well as in cases of need assessments (18, 19).

In this study 29 infertile couples were

interviewed through semi-structured interviews from April 2016 to June 2017. The participants included Iranian couples, who referred to one of the referral infertility clinics in Mashhad, Iran, with primary infertility due to the male and female factors, combined factors in both partners, or unclear factors of infertility receiving treatment with ARTs. The clinic is the only governmental centre in Mashhad that covers numerous clients from different regions of the country. It has gynecology and counselling clinics, visit rooms for women and men, ultrasonography, laboratory, sampling rooms, and operation rooms for intra cytoplasmic sperm injection (ICSI), intrauterine insemination (IUI), and IVF. The mean of monthly referrals to this centre is 900 people from Razavi Khorasan Province and other provinces. Approximately, each month 12 patients referred from abroad, such as people from Arab countries and the Iranians who live in other countries.

The inclusion criteria entailed: 1) experiencing at least one unsuccessful treatment with one of the ART techniques, 2) having no adopted child, 3) Having no history of a positive pregnancy test, 4) being monogamous, 5) having no physical or mental disorders leading to inability to participate in the interviews. Interviews with the participants were performed based on purposeful or through snowball sampling to reach maximum diversity. In selecting the participants, we tried to consider the maximum possible variability in terms of age, educational level, infertility factor, infertility duration, marriage duration, types of ART, and the number of unsuccessful treatments. Sampling was continued without any limitation until the data saturation was achieved.

Data collection was completed through conducting semi-structured interviews by the first author. Interviews with both partners were usually conducted simultaneously or sometimes separately. During the interviews, in cases that one of the partners was not assumed to be comfortable in the presence of the spouse for telling / her story, they were requested to continue the interview separately if they agreed. The interviews focused on the expectations and preferences of infertile patients after

unsuccessful treatment with ARTs. The first question was "Could you please express your experiences with infertility treatments?" The main questions were as follows: 1) "Please tell me about your experiences after failure in treatment with ARTs" 2) "What did you expect from others after unsuccessful treatment?" 3) "What was the most helpful or annoying things for you in this situation?" 4) "Could you please talk about your expectations from the treatment team, fertility clinic and healthcare system after unsuccessful treatment?" The following exploratory questions were asked according to the statements of the participants: "Could you explain more about....?" or "Could you state what you mean by this sentenceplease elaborate". The final question was "Do you think that there is anything that you might forget to mention?" The duration of interviews was 45-95 minute and the recorded audio of the interviews was transcribed verbatim on the day of the interview or the following day.

The interviews were analysed through conventional content analysis proposed by Graneheim and Lundman (2004) (20). Each transcript was read three times on average and new codes were obtained by each time of reading. Unrelated texts were excluded from the analysis. The texts were analysed as meaning units, condensed meaning units, codes, and themes in four stages. In the first step, the interviews were continued until achieving the main idea of the content. In the second stage, the texts were divided into meaning units, including words, sentences, and paragraphs as the contents were related to each other and with the aim of the study. The third step entailed the condensation of meaning units, labelling with codes, and comparing the differences and similarities. At the fourth stage, the codes were distributed to categories.

In order to enhance the validity and reliability of the collected data, different methods were applied, such as diversity in selecting participants, close involvement with the subjects and research environment, providing information concerning the aims of the study, continuous evaluation of the data, voice recording, data analysis immediately after interviews, and providing feedback for the next interviews. In addition, condensed meaning

units, codes, and themes were approved by several participants and observers (21). To organize data, the MAXQDA software (version 2010) was used.

The present study was approved by the Local Research Ethics Committee at Mashhad University of Medical Sciences under the code of IR.MUMS.REC.1395.120. The authorization for research in the therapeutic centre was issued as well. Prior to interviews, the aims of the study were explained to the infertile couples and their written consent regarding their agreement to participate in the study was taken. Moreover, there was the possibility of withdrawal at any stage of the research in case of unwillingness to continue the participation. The participants were assured in terms of the confidentiality of data. Furthermore, permission was taken from the participants for voice recording and only two individuals did not permit and their interviews were written from the beginning.

Results

The results of the current study showed that the age range of participants were 21-46 years old. The duration of marriage was between 18 months to 21 years, and the infertility duration was between 10 months to 16 years. The educational level of the subjects varied from elementary school to Master's degree. The number of treatments varied from one to five IUI in four couples, five IVF in one couple, and one ICSI in two couples. In two couples IVF was performed using a donated egg.

In this study, the theme of "expecting improvement of treatment process" were emerged, which encompassed three categories of 'expecting enhancement of therapeutic and healthcare services', 'demanding financial services', and 'requesting for more male involvement in the treatment process' (Table 1).

Expecting Enhancement of Therapeutic and Healthcare Services

The subcategories of expecting the enhancement of the therapeutic and healthcare services category included "continuous high-quality follow-up appointments" and "requesting for a systematic recording of infertility-related data".

Most of the infertile patients hide their treatments from their families leading to

deprivation of the family's emotional support at the time of unsuccessful treatment. Therefore, the need for a consultant is felt in the fertility centres, who can follow-up infertile patients after treatment and provide the required counselling services to reduce their stress and anxiety.

"If there was a special care centre to which these women could be brought, a consultant was present, and a physician could manage their anxiety... You see after any earthquake, if anything happens, a consulting group is sent to at least reduce their stress". (Interview 24, male, 4 years of treatment, unknown infertility)

In this regard, a participant noted that infertile patients are special cases and certainly follow-ups are vital for these patients. This participant evaluated the follow-ups of the treatment centres as moderate and expressed that in case of any question of the patients, the treatment team should be responsive. He added that illiterate individuals or people with low literacy levels might encounter problems in these centres. This person proposed practical approaches as following:

"You see, these patients are special cases. Regarding the subject of follow-ups, they need attention... follow-up and guidance are not very good, but not very bad either. I ask any question I have, but what about a person who does not know anything? For the follow-ups, they should clearly say to come at this date or for example do this". (Interview 8, male, 3 years of treatment, male factor infertility).

Some participants requested a systematic recording of the patients' information in different parts of the centre:

"In fact, there are only written, hand-written documents without any electronic record... automated electronic resources should be linked to one another and all works should be planned... for example, Doctor T is sitting there visiting a patient and she can use her computer to access the patient's records and then she can order ... or someone who is working at the ultrasonography department should have a computer and all the patients' records should be systematic." (Interview 20, female, 4.5 years of treatment, infertility due to male factor).

The patients' documents are recorded in papers in the therapeutic centres. Regarding the

high number of patients and the limited time of the physicians and the personnel of the centres, it is difficult to achieve and read all the pages of

documents. Therefore, systematic and electronic recording of the patients' information seems to be helpful and even essential (Table 1).

Table 1. Subcategories, categories and the main theme emerged from the study

Subcategories	Categories	Theme
Continuous high-quality follow-up appointments	Expecting enhancement of therapeutic and healthcare services	Expecting improvement of treatment process
Requesting for a systematic recording of infertility-related data		
Expecting medical loans with low interests	Demanding financial services	Expecting improvement of treatment process
Asking for insurance facilities		
Expecting the physician to communicate with both infertile partners	Requesting for more male involvement in the treatment process	Expecting improvement of treatment process
Demanding for men's counseling center		

"The only thing that remains and helps them is the memory of personnel when they know the patient. I have seen several times that when the doctor is performing ultrasound evaluation and does not have the documents, she says the name and says prescribe two injections, then they say you gave two the previous time and the doctor says well prescribe three... In fact, this is more about the hand-written documents without any electronic record". (Interview 19, female, 5 years of treatment, female factor infertility).

In terms of improving the therapeutic services, the partners had an agreement and both requested for the enhancement of therapeutic services. Men more asked for continuous high-quality follow-ups of their wives by the centres and women more requested for the systematic recording of information and quick access to the data.

Demanding financial services

This category includes "medical loans with low interests" and "insurance facilities". All the participants, including infertile females and males, stated mutual approaches for meeting financial needs. Some of these solutions included seeking help from higher coverage of therapeutic insurances, and special bank loans for infertile patients. The partners had an agreement in this regard and both were dissatisfied with the high costs of treatment and requested more support from the government and insurance agencies.

"The best way is the charities... it was good if they introduced us to banks for loans with low interests... I wish the Ministry of Health could support us." (Interview 24, male, 4 years of treatment, infertility due to unknown factor).

Most subjects stated that the coverage of

insurance was insufficient and considering the birth policies in the country, they asked for increasing the facilities, such as insurance coverage. Many infertile couples eagerly wanted to have children; however, the high costs of infertility treatments was an obstacle in the way of fulfilment of their wish.

"There are expenses for medicines, expenses for transfer, expenses for keeping the fetus, they take money all the time, give 300,000 Rials here, 400,000 Rials there.... They can at least improve the insurance coverage when they insist on increasing childbirth rates." (Interview 10, female, 4.5 years of treatment, male factor infertility).

Another participant, similarly, mentioned:

"These high costs are negative points here. It will be good if they could cover these costs with insurance. Many people do not have the required money for undergoing these kinds of treatments. We can try our best to afford 20, 30, 40 million Rials, but 150 million Rials is really too much." (Interview 27, 18 years of treatment, infertility due to female factor).

Requesting for More Involvement of Men in Treatment Process

The category of "requesting for more involvement of men in treatment process" encompassed the subcategories of "expecting the physician to communicate with both infertile partners" and "demanding the establishment of the counselling centre for men".

Some individuals were dissatisfied with the fact that the therapeutic centres are only for women and the role of men is not highlighted in these centres. A participant expressed that in several referrals to the therapeutic centres with his spouse, he did not meet the treatment team

members and received all the information from his spouse.

"I almost met no one. I did not talk to the physicians. I received information through my wife. Neither we talked, nor did they want to talk to me." (Interview 18, male, 3 years of treatment, infertility with factors due to both partners).

He added that infertility is the common problem of both partners and the interactive communication of physicians with both spouses is needed.

"A couple means 50% wife and 50% husband and it does not matter whether the problem is related to which one, you know. They are both patients meaning that they should be considered as two individual patients and they should not just talk to the woman. The man should also communicate with the doctor." (Interview 18, male, infertility due to male and female factors).

Moreover, a female participant in this regard said that some relationship problems occurring during and after the course of treatment and it would be prevented, in cases men were allowed to come to the visiting room with their spouses and ask their questions.

"I want to say that they do not let men enter the visiting room and nothing is explained to men. It seems that men are just like ATM, come, pay money, and go. When men come to the doctor office, they close the door. Maybe the man has some questions and many conflicts would be prevented if he heard the explanations of the doctor." (Interview 10, female, 4.5 years of treatment, infertility due to male factor).

Some participants noted that counselling units for men should be established in fertility clinics. As a result, men will also obtain knowledge about the reasons for infertility and treatment methods and all the mental and so that psychological burdens will not be only on women. Shoulders.

"There should be a counselling unit for men. They just pay the money. The women are the ones who are under mental pressure. They should explain to men as well. In Iran, everything is attributed to women." (Interview 10, female, 4.5 years of treatment, male factor infertility).

Consequently, the partners agreed in terms of male involvement. Both sides requested more male involvement in the treatment process. The reason for this request by men was being more

involved in the infertility treatment process and women considered it as a solution for reducing marital conflicts.

Discussion

In the current study, the theme of "expecting improvement of treatment process" included three categories of expecting enhancement of therapeutic and healthcare services, demanding financial services, and requesting for more male involvement in the treatment process. The first category had two subcategories of continuous high-quality follow-up appointments and requested for a systematic recording of infertility-related data. The category regarding demanding financial services included the following subcategories: medical loans with low interests, and insurance facilities. The third category entailed the subcategories of requesting for a physician to communicate with both partners and a counselling centre for men.

The interviews with infertile patients and treatment personnel along with the analysis of the data indicated that infertile couples due to the chronic nature of infertility treatments continuously encountered multiple challenges (e.g., needing repetitive treatments, facing continuous failures, and undergoing follow-ups). The mentioned subjects formed the most important concerns of these people. The participants stated that they were left on their own after the unsuccessful treatment. The centres call the clients once following the termination of the treatment to inform them about the treatment outcome and there was no further counselling and follow-up in case of failure.

In the current study, expecting the improvement of therapeutic services was one of the points noted by numerous couples and the partners had an agreement in this regard. They believed that systematic recording of patients' documents leads to easier access by the specialist. Additionally, this might minimize the medical errors caused by forgetting some parts of the treatment procedures.

Nowadays, patients' documents are becoming more digital. The data collected in the electronic databases of the patients' documents may be used for various purposes. The main aim is the provision of information for the medical staff in

daily activities (22). Electronic medical histories of patients allow the sharing of information. Digital interventions in the systematic procedure of the patients' documents, such as electronic prescription or computerized administration by the physician can reduce the risk of errors (23). This reduction in the risk of errors results in mitigation of the potential costs of therapeutic services (24).

A study was carried out on 682 couples referring to 15 governmental and private fertility centres in nine provinces of the country. The mentioned study assessed the number of hormonal tests performed on women and men, hysterosalpingography, laparoscopy, and utilized ovulation induction medications. These researchers concluded that systemizing the information of infertile patients leads to provision of highly valuable information for the authorities concerning the estimation and control of infertility treatment costs (25).

Another expectation of infertile patients was the improvement of financial and economic issues of treatment, which might be considered as one of the major expectations following the unsuccessful treatment. All the participants noted some recommendations and approaches for solving this problem, including improved insurance coverage, medical loans with low interests, and more support by the government. The ARTs are expensive due to the high expenses of used medications and the necessity for repetitive monitoring (14). In a qualitative study, the male subjects stated that the norm of the society is that men should pay the costs, which results in a great deal of pressure and stress for them because of the high costs of infertility treatment (26). Rashidi et al. showed that economic issues are the most important cause of ceasing treatment in 83% of the couples (25). In order to overcome the aforementioned obstacles of infertility care, health authorities should provide effective and safe ART services with the lowest possible costs for populations with low-income. The fact that developing countries allocate limited resources to life-threatening and non-life-threatening events, does not justify the negligence of infertility cares as a general health issue (27). Although regarding the policies for increasing the population in Iran, financial aids and

facilities have been taken into consideration for infertile couples, the aids do not cover all infertile couples (28).

In the present study, both male and female participants requested more involvement of men in the fertility centres. The reason was the fact that although infertility engages both men and women, but regardless of female, male, mixed, or even unclear infertility factors, most of the treatment pressure is on women. As a result, the decreased role of men is accompanied by problems for both infertile partners. In a study, it was found that men felt that their relationship with the treatment team was weak and they were not involved in the treatment procedures (29). They believed that their role is not well-defined in the treatment procedures and they are just in charge of paying the costs (26).

In the current study, both partners agreed on requesting for more male involvement in the treatment process. The reason for this request by men was equal participation in infertility treatment because they wanted to receive information about treatment directly from the physician. On the other hand, women demanded the involvement of men in order to prevent marital problems through informing men about infertility and related treatments because infertility treatments can be accompanied by special problems, such as disturbed sexual life and increased overall tension between the partners (30). Furman et al. (2010) evaluated the rate of men's participation in the psychological support services during treatment periods by ART. The presence and participation of men were categorized to three levels of occasional, sometimes, and always. They observed that 74% of the subjects were located in the last two levels. In the mentioned study, the number of recurrent referrals with male factor was twice that of the female factor. More than 90% of individuals reported the participation of men as "highly beneficial" and recommended that infertility clinics should cooperate in this regard with future patients. The main benefits of male involvement include reducing social isolation, showing emotions, and building relationships (31). Therefore, improved reproductive health in men and their active participation lead to enhancement of their social

behaviors, as well as helping the health of women and children (32).

The strength points of the current study entailed interviews with infertile Iranian couples with various infertility factors, who had several unsuccessful treatments and referred to the governmental and private fertility centres. In addition, further interviews were conducted with the treatment team personnel. The limitation of our study was not being generalizable due to the qualitative nature of the study. Moreover, the interviews were carried out with just the infertile couples who referred to the fertility centres to follow their treatment procedures.

Conclusion

In the present study, the participants expected the treatment process to be improved, especially after the unsuccessful infertility treatment. The latter expectations encompassed expecting enhancement of treatment and healthcare services, requesting financial services, and demanding more male involvement in the treatment procedures. The identification of the expectations and preferences of infertile couples after the unsuccessful infertility treatment can be useful in modifying plans for fertility centres resulting in the enhanced function of these centres followed by improved treatment outcomes.

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Conflicts of interest

Authors declared no conflicts of interest.

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