Title: Iranian infertile couples' strategies to manage social interactions after unsuccessful treatments with assisted reproductive technologies

Running Head: Infertile couples' strategies to manage social interactions

Abstract

Many infertile couples feel vulnerable after failed treatment cycles and find insensitive remarks or inappropriate support distressing. They fear that the stress of failed treatment cycles may affect their marriage and lead to marriage breakdown. This study explored the strategies a sample of Iranian infertile couples use to manage social interactions after unsuccessful treatment with assisted reproductive technologies.

A descriptive qualitative study was conducted with 34 participants including nine infertile couples, nine infertile women and two infertile men with primary infertility, two relatives, and three fertility clinic staff. The participants were selected through purposive sampling at an infertility centre in Iran, between 2016 and 2017. Data were collected using semi-structured face-to-face interviews and analyzed by qualitative content analysis approach (Hsieh & Shannon 2005).

Participants found some social interactions after failed assisted reproductive treatment cycles to be distressing and painful. They described tolerating painful emotions which cause them sadness and sorrow as well as feeling embarrassed. As a result, they found they need to maintain their adopting concealment strategies with their families through not permitting speculation, selective disclosure, not giving details and hiding the truth.

This study showed that social interactions following failed assisted reproductive cycles can be upsetting for infertile couples. Couples use different strategies to manage potentially distressing social interactions. Healthcare providers and psychologists may provide a space for safe social interactions in order to help couples to use appropriate strategies in these circumstances.

Keywords

Assisted reproductive technology, Interpersonal Relations,, Infertile couple, Descriptive qualitative study, Treatment Failure.

Introduction

Infertility is a worldwide problem of reproductive health that has physical, mental and social consequences (Daibes, Safadi, Athamneh, Anees, & Constantino, 2018), and affects all aspects of the lives of individuals and their family and social relationships(Yazdani et al., 2017). Data shows that at least 50 million couples deal with infertility worldwide (Hodin, 2017). In developing countries, one in four couples are infertile(WHO, 2017). The prevalence of infertility is reported to be from 17/3% to 25% in different regions of Iran (Akhondi et al., 2013; Kazemijaliseh et al., 2015; Vahidi, Ardalan, & Mohammad, 2009). Infertility is a universal issue which affects interpersonal and social relationships and threatens marital life of infertile couples (Robab Roudsari Latifnejad & Rasoulzadeh, 2018). It is notable that in developing countries with more traditional communities like Iran, due to social, cultural and economic factors (Hasanpoor-Azghdy, Simbar, & Vedadhir, 2015) the negative impact of not having children is much higher compared to the Western societies (Tabong & Adongo, 2013) and infertility may place quite severe social pressures on couples (Hasanpoor-Azghdy et al., 2015).

Infertility threatens an individual's psychological and social stability and their social relationships (Sepidarkish et al., 2016). It may influence their relationship with their spouse, families, friends and colleagues (Latifnejad Roudsari et al., 2013;). Infertility may also results in anxiety, helplessness, worthlessness, loneliness, and sexual dissatisfaction which can threat marital relationships (Heidari & Latifnrjad, 2010; Omani-Samani, Maroufizadeh, Ghaheri, Amini, & Navid, 2017; Sepidarkish et al., 2016; Talat Khadivzadeh, 2013). An infertile woman may be perceived as a bad wife or bride (Yao, Chan, & Chan, 2017) and in some societies an infertile woman may be divorced by her husband. So women find that divorce and abandonment by the family of their husband is a usual consequence of the failure of reproduction (Yao et al., 2017). For men, infertility could be also stigmatized and may be associated with social isolation (Anokye, Acheampong, Mprah, Ope, & Barivure, 2017) In a qualitative study in Iran it was reported that women whose husband are infertile receive annoying behaviors from family and friends including blaming, rejecting, misunderstanding and interfering with their privacy (Karimi et al., 2016). In societies where childbearing is the main objective of marriage, infertility may lead to marriage breakdown, polygamy and finally divorce, because of pronatalist values within these societies (Tabong & Adongo, 2013). Therefore, sociocultural context may be important in shaping the social experience of infertility (Greil, Slauson-Blevins, & McQuillan, 2010).

In Iran, children are considering as "gift of God" and the main cause of marriage is having children among many couples, considering the prevailing social views in Iran regarding birth

and parenthood (Hadizadeh-Talasaz, Roudsari, & Simbar, 2015). Indeed, social status, marital security, and fulfillment of the religious duty all depends on having children. So, childbearing is a social and cultural commitment for women and it is expected to have children soon after marriage, which reinforce the family institution (Abbasi-Shavazi, Inhorn, Razeghi-Nasrabad, & Toloo, 2008). So, infertile women may be worried about losing support of their husbands due to not having children (Abbasi-Shavazi et al., 2008). Infertile couples can feel insecure about personal and family identity even in societies where the family unit is strong (Zandi et al., 2017). Enquiries into private information about infertility treatment and its outcome may lead to intrusive questions raised by the family (Sormunen, Aanesen, Fossum, Karlgren, & Westerbotn, 2018). Therefore, in societies like Iran, where childbearing is culturally important, one of the most challenging issues encountered by infertile couples is how to deal with their families and friends in social interactions and family occasions(Abedini, 2016; Arbabi, 2012; Tabong & Adongo, 2013; Takaki & Hibino, 2014). By social interactions, we mean the negative approach or attitude against a person that has a social meaning (Abedini, 2016).

In cases of infertility treatment failure, most infertile couples experience tiredness, discouragement, frustration and a very stressful time. Although women report more social support than men in this situation, however, they have more difficulties in sharing 'failure' with the outside world (Ebrahimzadeh et al., 2019a). Internationally, when infertility treatment fails, the blame may be mainly on women (Tabong & Adongo, 2013) and infertile women may experience negative social interactions such as insensitive remarks and inappropriate support from friends and family (Akizuki & Kai, 2008). In Iran, the patriarchal culture of the society also shifts the blame onto women in cases of infertility treatment failure, however, at the same time, by shifting it away from men, it ignores women's distress and emotional reactions to unsuccessful treatment (Ebrahimzadeh et al., 2019b).

In a review it was shown that two major types of research studies regarding the topic of infertility include: quantitative research for addressing the need for psychological counseling and qualitative research to study infertility in different sociocultural context (Greil et al., 2010). Studies that have been conducted on social aspect of infertility addressed issues like experience of discrimination, social pressure for pregnancy(Ross & Hess, 2019), social stigma (Ergin & Polat, 2018; Sharma, Saxena, & Singh, 2018), social isolation (Ergin & Polat, 2018; Fisher & Hammarberg, 2012), familial attitudes (Ergin & Polat, 2018), and marital disharmony caused by infertility (Araoye, 2003).

Some studies have also investigated the social consequences of infertility in Iran (Hasanpoor-Azghady et al, 2015; Bokaei et al 2018; Taebi et al. 2018) including issues of encouraging

divorce, remarriage and adoption (Amiri et al., 2015). One qualitative study in Iran showed that social consequences of infertility included psychological violence, marital instability, social isolation, social exclusion, and social alienation (Hasanpoor-Azghdy et al., 2015). Few studies investigated the impact of infertility treatment on social relationships (Schmidt, 2009). But there is no study that focuses on social interactions and the strategies infertile couples adopt to manage them after unsuccessful ART in Iran. So, this study aimed to fill the existing gap in the literature by conducting a qualitative study to explore infertile couples' strategies in confronting with social interactions in cases of treatment failure in the sociocultural context of Iran.

Therefore, considering the significance of understanding the sociocultural issues surrounded unsuccessful ARTs (Silva & Machado, 2010) on the one hand, and the value of childbearing in pronatalist society of Iran, importance of continuity of generations in families and the pressure and interference of families in childbearing issues and their possible negative effects on infertile couples on the other hand, a qualitative study was designed to explore the Iranian couples' strategies after unsuccessful treatment while encountered with social interactions.

Materials and methods

Design

This paper reports finding from a larger exploratory qualitative study conducted in relation to the experience of Iranian infertile couples after unsuccessful treatment with assisted reproductive techniques in one geographical location in Iran. Qualitative descriptive (QD) studies aim to describe an experience or behavior in the words of the participant (19). QD is a method by which insights through the discovery of meanings are elicited through fine -grained analysis of qualitative data (Burns & Grove, 2009; Neergaard, Olesen, Andersen, & Sondergaard, 2009).

Ethical considerations

This study was approved by the Ethics Committee of Mashhad University of Medical Sciences, Mashhad, Iran. Before the study began, all participants signed a written consent form and were

assured that all information would remain confidential. They could withdraw from the study at any time without prejudice to their medical care.

Setting

This study was conducted in an infertility center in Iran. It is a referral center in northeastern area of Iran, in which infertile patients from the urban and rural communities of Iran and some of the neighboring countries refer to the center to get fertility treatment. *The center includes different clinics, for women and men's examination, counseling rooms as well as rooms for ICSI, IUI, IVF procedures. It has also facilities like ultrasonography and different laboratories. The average number of patients being admitted in the center are 900 people per month from Khorasan province and other provinces, about 12 of whom come from abroad (Arab countries or Iranians residing in other countries). Women's infertility clinic is active 23 days per month in the morning and evening with nine Gynecologists. Men's infertility clinic is active 8 days per month in the morning shift, with three urologists*.

Profile of participants

In the present study, 34 participants were selected using purposeful and theoretical sampling, including nine couples, nine women and two men, aging between 21-46, two relatives and three treatment staff. Iranian infertile couples with primary infertility, who were Persian speaking, had no adopted children and experienced at least one unsuccessful treatment with ART were included in the study. The average age of infertile patients was 33.8 years. Eleven had higher education, 8 secondary education, and 19 elementary educations. 20.8% of the participants resided in rural areas and 79.2% in urban areas. Also, 51.7% of participants came from other cities. The duration of marriage was from 2 to 21 years, and the duration of treatment was from 10 months to 18 years. Infertility factors were female: 24.3% of cases, male: 24.2%, both male and female: 24%, and unknown: 27.6%. Fertility treatment methods included IUI, IVF, donated oocyte and microinjection. Some couples experienced multiple failed IUI and IVF treatments (see table 1). Two sisters of the infertile patients, both had university degrees and three medical staff had a work experience of 12-18 years.

Individual semi-structured interviews were conducted and nine joint interviews were conducted with the participating couples. It was tried to achieve maximum variations in relation to infertility diagnosis, infertility duration, and the type of ART. After giving consent for participation in the study, interviews were conducted at the infertility centre.

Data collection procedure

Data collection carried out using semi-structured and face-to-face interviews. The interviews were conducted in a quiet environment between April 2016 and June 2017 at the infertility centre. Interviews took 45 - 95 minutes and were audio recorded. Before the interview began, the objectives of the study were explained to the participants, their questions were answered, and their consent to record the interview was obtained. Pilot interviews helped researchers to produce the questions. But through interviews, initially a general question was asked to break the ice and establish the rapport with participants and then the next questions were asked according to the answers given by infertile couples. Usually when participants talked about the social issues and family interactions either as positive or negative experience, their adopted strategies for managing those interactions was then sought. The interview questions included "When did your family or your spouse family figured out about your unsuccessful treatment, what was their reaction?" More detailed questions followed: "What is the reason for this reaction in your opinion?" "What were the effects of this reaction on you?" Follow up questions asked about the impact of family inquiries and interference in their lives after the unsuccessful treatments, and the strategies used by the couples to manage social interactions with families and any perceived interference. The interviews were concluded by the following question: "Is there a question that I have not asked, or do you have anything that you would like to say?"

Data management and analysis

To gain insight into infertile couples' strategies towards managing social interactions after unsuccessful treatment with assisted reproductive technologies, Conventional content analysis adopted by hsieh and Shanon (2005) was adopted. Conventional content analysis is applied in studies where the main objective is to describe phenomena for which there are limited theories. In conventional content analysis categories are derived directly from textual data (Hsieh & Shannon, 2005).

Once interviews completed, all interviews were carefully transcribed as verbatim by the first author one to two days after the interview. The transcripts were listened to several times to get familiarized with and be immersed in the data (Peddie & Teijlingen, 2005) and to gain insight into infertile couples' strategies towards managing social interactions after unsuccessful treatment. In jointly couple interviews, the experiences expressed by each of the couples (either husband or wife) was transcribed, analyzed and reported, separately. Although both couples in most of the cases had similar experiences and the conversation of an infertile man/woman was

usually confirmed by his/her partner. Thereafter, it was divided to meaning units which then changed to condensed meaning units and initial codes based on the understanding of the researcher of the key concepts in the text. Events, measures, explanations and perceptions were identified and coded. These often came directly from the text and shaped the initial coding scheme. All coding process was double checked with original transcripts by co-authors who were senior researchers. Codes were repeatedly compared by the research team in order to search for subcategories and categories. Codes then were grouped into 10 subcategories and 2 categories based on how they were similar and related to each other in terms of meaning. These emergent categories were used to organize codes into meaningful clusters, which were further reviewed, defined, and ultimately formed as it is seen in this report. Data saturation was achieved when no new themes emerged from additional interviews.. Data coding and analysis was done by MAXqda v. 2010 software.

To maintain credibility of the study, the analysis was discussed with experts in the field and also verified by member check. During the process of data analysis, the codes and categories were discussed with the project supervisor and research team, who were experienced qualitative researchers, to validate the interpretations. A piece of the coded data was coded again one month later and the results of the two coding were compared together. To ensure dependability and confirmability, an audit trail was carried out by two external reviewers who traced the research process and decision trails of the researchers to determine whether the results are arrived at the same conclusions(Morse, 1996). To increase the transferability of the findings, characteristics of the participants and the procedure of the research were described in detail**Results**

The preliminary results of this qualitative study included two categories of: 1) *tolerating painful emotions* with subcategories of 'feeling of sadness and sorrow' and feeling embarrassed; and 2) *adopting concealment strategies* which included subcategories of 'not permitting speculation', 'selective disclosure', 'not giving details' and 'hiding the truth'.

Tolerating painful emotions

Most participants said that interference of the family members regarding the treatment of infertility and its outcome resulted in difficult family relationships and tolerating painful emotions which resulted in painful emotions. Interactions with families became increasingly painful when the families found out that the treatment had been unsuccessful.

Feeling of sadness and sorrow

One of the male participants were upset by families frequently asking the women rather than their husbands about childbearing.

"*They always ask her if she is pregnant; this upsets her very much*". (Interview 15, man, 3.5 years of treatment, female factor).

After finding out about infertility treatment failure, the husband's family, even when there was a male factor problem, started to suggest alternative physicians and infertility treatment centers to the couple. However, some of these suggestions were inappropriate. For example the suggestion of a gynaecologist for a couple with male factor infertility made the woman sad and upset.

"*It seems they do not want to admit that their son is having problem. They say there are new methods every day. Go to a gynecologist. The more I say that I'm not responsible for infertility, the less they believe*" (Interview 10, woman, 4.5 years of treatment, male factor).

In some cases, the sorrow of women intensified when the husband's family, knowing the problem is with their son, still blamed the wife due to the lack of response to treatment.

"*They told my husband that you have sperms in the semen anyway, the problem is with the uterus that does not carry the embryo. I get very upset. I'm unable to have children because of my husband's problem, whereas they say that it's my fault*" (Interview 10, woman, 4.5 years of treatment, male factor).

Some participants said that *each* member of their husband's family asked about every detail of the treatment and its outcomes. These frequent inquiries were stressful for them. One of the infertile women in this regard commented:

"*My husband's family is very populous. Each of them asks the same questions about the treatment outcomes any time. They ask a lot of questions. All these* interactions *are stressing*" (Interview 22, woman, 3 years of treatment, unexplained).

One of the health staff stated that infertile women become stressed due to enquiries from their own families. Sometimes they do not inform even their mothers regarding the problem.

"*Some patients say that they do not even tell anything about the treatment to their own mother; because their families may ask a lot of questions on whether the treatment was effective or not; and this will impose stress on them*". (Interview 11, healthcare personnel).

Another participant, who was the sister of one of the infertile woman, said:

"*My sister gets very upset when for example my cousin asks her about result of infertility treatment"(*Interview 13, sister*)*

However, infertile men found questioning of others distressing and intrusive, irrespective of which family asked the questions:

"*You know that in Iran, there is lots of family* interference *and that's distressing emotionally*" (Interview 6, man, 4 years of treatment, causes of infertility: both male and female).

Feeling embarrassed

After unsuccessful treatment, infertile men affirmed that family enquiries about the outcome of the treatment would make them embarrassed:

"*When treatment didn't work, first they ask questions, and then it is an embarrassment*", (Interview 8, man, 3 years of treatment, male factor).

The reason for embarrassment was that the family members thought that the husband is unable to fertilize his wife, which is a natural process:

"*Anyway, these are natural things that everyone should have. Everyone should have children"* (Interview 8, man, 3 years of treatment, male factor).

One of the health staff referred to the embarrassment of infertile men to discuss about infertility with others:

"*Infertile men do not particularly like to talk about infertility and the outcome of treatment with other people .I think they are embarrassed"(*Interview 16, healthcare personnel)

Some participants reported that they moved from their cities, which was far from fertility clinic and stayed for a while at their family members houses during treatment period. After

unsuccessful treatment, when the family questioned them about the outcome of treatment, they were ashamed:

"*This time I stayed at my mother's house for a while, I was embarrassment when she asked me about the outcome of IVF*" (Interview 5, woman, 12 years of treatment, causes of infertility: both male and female).

Adopting concealment strategies

The participants sought to maintain their privacy against these intrusive questions by managing social interactions: 'not permitting speculation, 'selective disclosure', 'not giving details' and 'hiding the truth'.

Not permitting speculation

Some participants indicated that from the beginning, they did not allow families to intrude in the treatment procedure and the infertility issues:

"*From the beginning, we didn't allow the families to decide on or talk about our problems; they don't know anything about us. They knew that if they act in any way, we will react, too (smiling)*" (Interview 30, man, 4 years of treatment, unexplained).

One of the reasons for curiosity in the family was an existing history of infertility in the family:

"My husband's family asked him about it a few time. His mother is worried about the issue because two of his uncles are infertile, one of whom has gone for surrogacy and the other adopted a child. My husband told her that we are seeking treatment procedures and visited doctors; we don't need anyone to intervene in our problems (Interview 9, woman, 3 years of treatment, female factor).

Another participant, similarly, said:

"My *sister's husband does not allow asking anything (*about treatment and its result*) at all" (*Interview 13, sister*).*

Selective disclosure

Selective disclosure was another strategy to maintain privacy. Some participants were reluctant to inform family members of the outcome of infertility treatment, except of first-degree relatives. One of the relatives of one participant referred to this matter:

"*She (infertile woman) has no problems with us [sisters]; however, she told us please don't spread it out to other people. She didn't want others to know about the issue*" (Interview 12, sister in law).

Two relatives of infertile couples, who were interviewed believed that first-degree relatives should know about the treatment procedure but others should not:

"*Look, some of the family members should be informed about the treatment issue; for example sister and mother are first-degree relatives; but the others, you know, they shouldn't know; it will make everything worse. You should answer their questions now and then. It will make them nervous (with emphasis)*" (Interview 12, sister in law).

Another participant said that "*My sisters in law did not know that I had unsuccessful treatment . Just my mom and sisters know* "(Interview 1, woman, 18 months of treatment, causes of infertility: both male and female)

The relatives of infertile couples felt that the couple may need help after unsuccessful treatment, and mothers or sisters may be able to help:

"*Well, maybe I can help to some extent. For example, once she gets sick and goes to the hospital, for any reason, at least two or three people should get involved in the matter to help her when required*". (Interview 12, sister in law).

One of the infertile women said that she needed to talk with someone after unsuccessful treatment:

"*Our families are not involved very much, but one of my friends knows everything. Anyhow, I need to talk to somebody close to me. I chose her to talk to*". (Interview 30, woman, 4 years of treatment, unexplained).

One of the health staff referred to various approaches of infertile couples in terms of disclosing the issue of unsuccessful treatment. She said:

*"Some infertile individual only say to their mothers (about unsuccessful treatment), especially infertile women, some tell their friends and prefer that the family does not know something . Some do not say anything to anyone"(*Interview 16, healthcare personnel*).*

Not giving details

One of the male participants stated that they do not allow relatives to enquire about, or make opinions on the details of treatment and its results.

"*I don't allow them to get into details, for example I tell them that my wife is underweight and her body doesn't respond*" (Interview 15, man, 3.5 years of treatment, female factor).

They treated their families in such a way that they do not ask anything about the problem from the couple, or, in case of any questions, the couple answered vaguely;

"*We treated in such a way they don't ask questions anymore. They may ask only a few questions, and we give them just little information*" (Interview 8, woman, 3 years of treatment, male factor).

Some participants stated that they answer the detail questions of their families with general and closed answers. Their families realize from these closed answers that they should not ask a lot of questions. One infertile woman in this regard commented:

Anyone [My husband's family] *who sees me asks many questions in detail but I just say that I'm going to the doctor, you know, and I don't explain why I am going to and where I go, and so on, then they ask me few questions* (Interview 22, woman, 11 years of treatment, male factor).

One of the relatives said:

*"We did not know much detail at all, but we just saw that she was crying (after unsuccessful treatment)"(*Interview 12, sister in law*).*

Hiding the truth

Most couples in the study tried to hide their treatment results from the families and first-degree relatives. One of the male participants referred to his firm decision for not to disclose the issue to anybody:

"*I didn't tell anybody about the treatment, no one knows anything. I decided to hide the treatment procedure from all of them*" (Interview 6, man, 4 years of treatment, causes of infertility: both male and female).

Couples concealed any details about infertility and assisted reproductive treatments because of the fear of intrusive questions from families. One of the female participants in this relation said:

"I decided that no one knows anything because if they know, you have to answer many questions about the problem, treatment and its result" (Interview 3, woman, 16 years of treatment, male factor).

Participants believed that the relatives only ask questions and provide no solutions. One infertile woman commented:

"*There was no reason to tell them, because they don't do anything and only ask questions*" (Interview 7, woman, 5 years of treatment, female factor).

One infertile men, similarly, said that he has decided to be silent about it because it is something related to their personal life and they have no desire that somebody else to interfere with it.

"I decided to be mostly silent about the treatment, because I don't interfere with the private life of others and so do not expect others to intervene in my life (Interview 30, man, 4 years of treatment, unexplained).

One of the healthcare personnel referred to the strategy of hiding used by infertile couples:

"*Most of infertile couples often hide* infertility treatment and its results *from their families* (Interview 11, healthcare personnel).

Discussion

This study describes the responses and strategies of Iranian infertile couples who encounter family interference after unsuccessful treatment with assisted reproductive treatments. The preliminary results of this qualitative study suggest that questioning by families and relatives after unsuccessful treatment caused sadness and sorrow, stress, mental suffering and embarrassment and family relationships were increasingly difficult. So, couples sought to protect themselves from any painful emotions due to intrusive questioning through adopting concealment strategies including not permitting speculation, selective disclosure, not giving details and hiding the truth.

Children have a special significance in Iranian society and culture. They are considered as important sources of support for their parents. Therefore, couples are always addressed why they do not have a baby by families and others. These questions cause the sorrow and stress. In an Iranian study, women stated that they experienced depression, anxiety, stress, and isolation because of their infertile status (Abbasi-Shavazi et al., 2008).

According to Social Construction and Stigma Theories, infertile men and women usually experience disability, insecurity, lack of access, and shame(Covington & Burns, 2006). Infertility treatment was associated with high level of distress (Moura-Ramos, Gameiro, Canavarro, Soares, & Almeida-Santos, 2016). Family Systems Theory confirms the family's effects on increasing or reducing the negative effects of infertility(Covington & Burns, 2006). Domains of infertility-related stress are couples' interpersonal experience and the importance of parenthood that may be associated with clinical conditions and sociocultural differences (Donarelli et al., 2016; Moura-Ramos et al., 2016).

On the other hand, infertility treatments may be affecting on the psychosocial well-being, marital relationship, psychological correlates and life satisfaction (Chachamovich et al., 2010; Donarelli et al., 2016; Huppelschoten et al., 2013). The relational domain is a core aspect of the assessment of the marital partnership in infertile couples has been affected by infertility problems (Donarelli et al., 2016). Marital satisfaction in infertile couples can be explained by the family systems (Peterson, Newton, & Rosen, 2003). Direct and indirect family support can be beneficial or negative in many different ways(Sormunen et al., 2018). Social support includes information acquisition, financial help, and emotional support (Abadsa & T.AL-Yazori, 2017). Latifnejad Roudsari et al. (2011) suggest collaborative counseling, with contribution of all members of fertility team, as one of the stress management strategies in infertile women undergoing IVF(Robab Roudsari Latifnejad, Mahboubeh Bidgoly Rasoulzadeh, N Mousavifar, & Modarres., 2011).

In this study, some couples said that they did selective disclosure to receive financial support. In Iran, average price per IVF cycle is $800 - $4,000 depends on the type of clinic. So, many infertile couples face many financial problems(Abbasi-Shavazi et al., 2008).

One of the other strategies adopted by infertile couples was not permitting speculation, and 'not giving details'. In this study, some female participants stated that they discussed the issue only to with their closest relatives, such as their mother or sister, and they said nothing to anyone from their husband's family. It may be a critical component in the management of the stress caused by infertility. Family relationships are known to increase stress during infertility treatments both indirectly and negatively (Martins, Peterson, Almeida, & Costa, 2011). Infertile women experienced negative interactions with family members and friends. Although family members wanted to support infertile women, their interference was stressful for the infertile couples (Sepidarkish et al., 2016). Unsuccessful treatment is in itself, hard, difficult, and stressful for infertile couples, and the cultural norms of the community and their families lead to perceived family interference in which distresses couples further (Peronace, Boivin, & Schmidt, 2007). In Iran, infertile couples worry from interference of their families. In an Iranian study, most women stated that their own families were supportive and they had negative relations with the families of their husbands(Abbasi-Shavazi et al., 2008). In this study, participants felt that frequent questions from relatives and acquaintances caused them anger and stress, and resulted in embarrassment, especially for men. Infertile couples considered interaction with their families, particularly their spouse's family, to be stressful. Social pressure is so high that couples who decide not to have children voluntarily; are forced to revise their decision. Some couples may consider divorcing or remarry because of family pressure. According to Iranian law, the spouse of an infertile person can take action for divorce(Abbasi-Shavazi et al., 2008). A number of couples may discuss infertility treatment issues with their close relatives, but there is a significant difference in the way of raising such issues with the closest family members and distant relatives. The close relatives of the couples also stated that due their concern about the outcome of the treatment and also in order to provide the necessary assistance to the couples in case of need, they asked the outcome of the treatment and provided the necessary recommendations. However, when they felt that the couples were not willing to talk about it, they also stopped the inquiry. The relatives believed that some family members - not all of them - needed to know the problem of infertile couples to help them.

Most male participants were reluctant to talk to family members in this regard, and in case questions were raised by the family, they decided to stop it by general and closed responses, although the same strategy was also adopted by some female participants. Peronace et al. found that men with male-related cause of infertility talk less with their relatives about the issue than men with other causes of infertility (Peronace et al., 2007). In a study was shown that women use avoidance coping, while their partners use coping techniques such as distancing and self-controlling. (Huppelschoten et al., 2013). Peronace et al. (2007), similarly, reported that a majority of participants, both men and women, said that they had concealed the treatment and its outcome, and even their treatment-related travels, from relatives and families. Of course, the confidentiality and concealment of the treatment process and its outcomes are common among infertile couples (Peronace et al., 2007). A study by Sormunen et al. (2018) found that 14% of women did not talk about their treatment process with people outside of the family (Sormunen et al., 2018). Ceballo et al. (2015) suggested that self-imposed silence may be a coping strategy used by infertile women (Ceballo, Graham, & Hart, 2015), because when the couples talk about their treatment of infertility and its consequences with relatives or other acquaintances, this takes a lot of energy from them and may choose not to talk about it. They will not be able to talk in this regard with their close relatives and other relatives. A lack of understanding and support from these people may be the cause of this silence (Sormunen et al., 2018). Latifnejad Roudsari et al. (2013) argued that in some circumstances couples, in their silent and private world, get help of their own spiritual thoughts through having a positive mentality and optimistic view, as well as giving hope and reassurance to each other, so achieved closer relationships (Robab Roudsari Latifnejad, Allan, & Smith, 2013). According to bereavement approaches to infertility, women cry while men watched in silence(Covington & Burns, 2006). Hasanpoor-Azghdy et al. (2015), in their study, indicated that sometimes, participants preferred to interact less with family members to avoid their potentially abusive and distressing questions (Hasanpoor-Azghdy et al., 2015). In Iran, children are the agent of saving marital lives so, infertile couples are afraid of interruptions in marital and social relationships and family interference strengthen this fear. Therefore, they avoided where may be asked them about children(Abbasi-Shavazi et al., 2008).

In the present study, infertile couples tried to stay away from their family members. A study suggest that Japanese infertile women avoid contact with family, relatives and friends who have not experienced infertility (Akizuki & Kai, 2008) to maintain privacy by using selective disclosure. Hadizadeh-Talasaz et al. (2015) in an Iranian study discussed that the main reason for secrecy is concern over societal negative views (Hadizadeh-Talasaz et al., 2015). Also, they

manage social interactions by not allowing intrusive questions and giving only general information. It may be social protection that mediates the effects of stress on mental and physical health (Peronace et al., 2007). So, the positive supports of family seem necessary for mental and physical health of these couples. In addition, healthcare providers and psychologists may be able to help infertile couples to adopt an appropriate response and strategy to manage the interaction of their relatives. Biopsychosocial theory attempts to explain human behavior in a way that refers to biological, psychological, and social interactions. This theory identifies infertility as a life-threatening crisis as well as long-term complications for the individuals, partners, relationships, families and friends. Infertility stressors are occurred in physical, emotional, and interpersonal areas. In this relation Latifnejad Roudsari et al. (2016) cite Simson (1998), who recommends infertile women to use spiritual coping strategies which could enhance self-empowerment of individuals to find meaning and purpose in life and to achieve a sense of personal wholeness by merging the bio-psycho-social perspectives (Latifnejad Roudsari, Allan, & Smith, 2014). According to the Social Construction and Stigma Theories, infertility is experienced in the context of changing interpersonal relationships, mainly family-related relationships. Family Systems Theory is based on the interactions of individuals within the families(Covington & Burns, 2006). This study showed that unsuccessful treatment may change interpersonal relationships, which in turn could affect the social interactions between infertile couples and their families. It is therefore recommended to taking steps to incorporate sociocultural considerations into routine care of infertile couples (Robab Roudsari Latifnejad, Jafari, & Taghipour, 2019) as according to the findings of this study, fertility staff are somewhat aware of negative effects of social interactions as well as the strategies may use by infertile couples when they face interpersonal relationship challenges.

Strengths/limitations

The strengths of this study was that the interviews were with Iranian couples by Iranian researchers investigating infertie couples about whom kittle is known and exploringinfertile couplesstanding of how cultural norms about family support are perceived by infertile couples. Also, complementary interviews were made with close relatives and even healthcare providers to understand some deeper aspects of the issue. The limitation of this study was lack of generalizability because interviews were with people who had the willingness to participate in the study to share their experiences and also couples who attended the treatment center.

Conclusion

Our findings show that social interactions after unsuccessful treatment can have negative effects on infertile couples who undergo assisted reproductive treatments. Infertile couples use different strategies to manage these negative effects. Therefore, considering the psychological state of infertile couples, especially after unsuccessful treatment, family and healthcare system support for these couples is essential to help them to use appropriate strategies in these circumstances.

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