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**Cognitive emotional consequences of male infertility in their female partners: a qualitative content analysis**

## Abstract

## Introduction

Infertility, as a global phenomenon and one of the most important issues of reproductive health, affects women more often than men, even when the infertility is due to a male factor. The purpose of this study was to explore the cognitive emotional experiences of women faced with male infertility.

## Methods

This qualitative study was conducted in ۲۰۱۴–۲۰۱۵ in Mashhad, Iran. The perceptions and experiences of healthy women whose husbands were diagnosed with primary male factor infertility were investigated using a qualitative content analysis approach. Participants were selected through purposeful sampling, and data collection was conducted using in-depth semistructured interviews. Data were analyzed using conventional content analysis with MAXqda software. Study rigor was verified via criteria proposed by Lincoln and Guba.

## Results

One main theme emerged through analysis entitled “cognitive emotional reactions confronting infertility diagnosis” with sub-themes of cognitive emotional reactions when confronted with male infertility diagnosis with subthemes of disbelief and denial, fear and apprehension, suffering and emotional distress, disappointment, frustration, confusion, and joy.

## Conclusion

The diagnosis of male infertility was associated with important emotional cognitive consequences for their female partners. Emotional support, providing new insights into how to treat the issue, and trying to shorten the process of diagnosis are necessary for these women. This kind of support could reduce the psychological effects of confrontation with the diagnosis of male infertility, including social insecurity for women.

**Keywords:** women, male infertility, content analysis, cognition, emotional

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## ۱. Introduction

Infertility is a global problem ([1](#), [2](#)) and is considered one of the most important issues of reproductive health ([3](#)). The World Health Organization (WHO) considers infertility as a disease and its prevalence as an indicator of reproductive health in women of reproductive ages of ۱۵–۴۹ years. Therefore, addressing this issue has been raised as a health priority ([4–6](#)). According to previously obtained data, infertility affects ۱۰% to ۱۵% of couples in the world, and its prevalence is increasing; thus, it has become a social concern ([1](#), [7](#)). In studies conducted in Iran, the prevalence of primary infertility was estimated at ۲۴.۹% ([8](#)). Infertility is not just a medical problem but also a crisis of social life ([9–12](#)). It can influence interpersonal, marital, and social relationships and cause significant emotional and psychological damage ([11](#), [13](#), [14](#)). The path that the infertile couple must take is not an easy one ([15](#)). It results in the occurrence of a wide range of emotional and physiological disorders ([11](#), [16–19](#)), which may be destructive ([20](#)) and have a damaging and lasting impact on their lives ([19](#)). Although both men and women experience this problem, it affects women and men in different forms ([21–23](#)). Even in male infertility, which is the cause of more than half of all infertility cases worldwide, women endure the main burden of this issue ([24](#), [25](#)). Because having children is more important for women, they are typically more involved in the follow-up, diagnosis, and treatment processes. Furthermore, social pressure is more focused on women than on men. In Iran, this issue has more complicated consequences, for the reason of parents and relatives’

role in the couple's life (26–28). With any sort of delay in becoming pregnant, concerns, curiosity, pressures, and interference of others start, and individuals typically encounter significant psychosocial stress, which leads to numerous forms of psychological disturbances (29–32). Moreover, studies have shown that, when the cause of infertility is the man, he will be distressed and show more emotional responses toward infertility. However, women, whether or not they are the cause of infertility, typically experience mental breakdowns (33). Some researchers have indicated the existence of psychological problems in both partners; however, despite its impact on both sexes, it seems that women experience higher levels of stress and emotional turmoil (34). The aforementioned argument justifies the importance of investigating the consequences of infertility. In Iran, although studies have been conducted on infertility, no study has been reported on the emotional problems of women who are dealing with their spouse's infertility. Despite many psychological problems that these women are faced with and being placed at the heart of the problem, less attention has been paid to their issues by health authorities. Therefore, people who live with this problem, suffer from severe psychological damage (3, 14, 21, 29, 30, 36). Unfortunately, little information exists on the psychological consequences of infertility in women whose husbands suffer from male factor infertility. Addressing the problems of this group and considering them in health planning and policy-making is of great importance. In order to help these women, their problems, concerns, and understanding of spouse's infertility, then, should be identified. To meet this goal, the qualitative methods are suited to be adopted for exploring the psychosocial aspects of infertility. Qualitative research methods must respond to research questions regarding psychosocial phenomena due to the complexity of these phenomena and lack of information (10). Due to the above reasons, this study aims to explore the cognitive emotional implications of confronting women with the male infertility diagnosis of their spouses.

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## **2. Material and Methods**

### **2.1. Research design and setting**

This was a qualitative study carried out using conventional content analysis. The study included healthy wives of infertile men who were referred to the Milad Infertility Center of Mashhad as well as women who were identified through health care clinics of Mashhad.

### **2.2. Sample size and sampling methods**

In qualitative studies, most sampling is performed with maximum variation through purposeful sampling with a wide range of changes in the desired dimensions (27). Therefore, purposive sampling with maximum variation (regarding age, occupation, education, and duration of infertility) was performed. The first participant was selected, based on inclusion criteria, from those who provided rich information and had the ability to communicate and the willingness to provide their information. This sampling procedure was continued until data saturation; to the extent that new data were not obtained from the interviews. Because the number of participants is determined by the depth of data needed, and, when data saturation is achieved, the number of participants becomes sufficient. Data saturation occurs when the sampling does not provide any new data.

### **2.3. Selection criteria**

#### **2.3.1. Inclusion criteria**

Iranian women, whose husbands were diagnosed with primary infertility and had the ability to understand and speak Farsi, were able to express their feelings, emotions, and experiences and had passed at least one year since their marriage was entered into the study.

#### **2.3.2. Exclusion criteria**

The exclusion criteria were women having children or stepchildren and had experienced marital breakdown or remarriage.

## **۲.۴. Instruments and data collection**

For data collection, semistructured interviews were used. This type of interview is used in qualitative research due to its depth and flexibility. This type of interview gives participants an opportunity to fully explain their experience of the phenomenon. Therefore, in this study, semistructured interviews were used to obtain in-depth and detailed data. Interviews began with open questions based on the interview guide. Questions in the interview guide were focused on the subject areas that had to be covered and the research line that had to be pursued. Then, they were followed by probing questions to achieve greater clarity (۳۷, ۳۸). In case of women's willingness to participate in the study, the arrangement was made regarding the time and place of the interview. During the interview, the researcher introduced herself and explained the objectives of the study and obtained an informed consent to record interviews with a recorder. Participants were also assured of the confidentiality of their experiences. The interview began with general questions and establishing appropriate relationships and gaining the women's trust. Then, the participants were asked to explain their experiences of their spouse's infertility. The subsequent questions were based on the responses of the participants and focused more on the important issues. In this study, the researcher was flexible toward the content of the responses of the participants and nonverbal cues. If, during the interview, the participants felt stressed, they were given the opportunity to relax and regain their composure. At the end of the interview, participants were asked to discuss unresolved issues. Finally, after acknowledgement of their participation in the interview, they were informed of the possibility of subsequent interviews. The researcher's phone number was provided for the participants for follow-up questions regarding the process of data collection and to be in contact with the researcher.

## **۲.۵. Research ethics**

It was approved by the research ethics committee of Mashhad University of Medical Sciences, Mashhad, Iran. Informed consent was obtained from all participants.

## **۲.۶. Data analysis**

Data analysis was conducted concurrently with data collection using conventional content analysis with MAXqda software (version, ۲۰۱۰). At the end of each interview, the recorded interviews were transcribed verbatim using a computer. To gain full insight and understanding of the phenomenon under study, the interviews were listened to and the typed text was reviewed several times. Then, the text was divided into meaning units, which consisted of a group of words related to the same meaning. The process of data reduction continued with labeling meaning units with codes. The codes were compared based on their similarities and differences and categories developed. Then, themes and subthemes emerged via linking the underlying meanings of categories through inductive analysis. After careful study and analysis of the text of each interview, the next interview was planned. For most participants, the interviews lasted approximately between ۳۰ to ۶۰ minutes. Study rigor verified via criteria proposed by Lincoln and Guba: spending enough time to collect and analyze data in order to gain a deep understanding of the phenomenon, reviewing the process of analysis by the research team, establishing a desirable relationship with the participants to conduct in-depth interviews, long-term involvement with the data, repeated reading of the interviews, frequent review and correcting of coding, and reviewing the different stages of the analysis in frequent meetings by the research team. To this end, interviews, codes, and extracted categories and themes were presented to several experts who were familiar with qualitative research; they were then asked to examine the coding and analysis and provide the necessary feedback. The different views in conceptualization were discussed and agreed upon. For the use of a variety of sources, data were collected from different groups and different places. Moreover, the participants reviewed the data, and experts and external reviewers analyzed and recorded and evaluated the different stages.

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## **۳. Results**

### **۳.۱. Sociodemographic characteristics**

In this study, 19 interviews were conducted with 14 women. Some women were interviewed more than once. Participants were aged 27–59 years; their mean age was 36.14 years. The duration of infertility ranged from 2 to 42 years with a mean of 13.30 years ([Table 1](#)).

**Table 1**

Characteristics of Participants

Participants	Age (year)	Education	Job	Duration of Infertility (Year)
1	33	Guidance school	Employed	12
2	49	High school	Employed	33
3	30	University	Employed	10
4	59	Illiterate	Housewife	42
5	28	University	Employed	2
6	30	Elementary school	Housewife	11
7	44	High school	Housewife	23
8	41	Illiterate	Housewife	7
9	27	University	Employed	9
10	32	Elementary school	Housewife	9
11	30	Elementary school	Housewife	3
12	29	University	Employed	8
13	30	High school	Housewife	14
14	29	High school	Housewife	4

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## 3.2. Cognitive emotional reactions when confronted with male infertility diagnosis

One main theme emerged through analysis, including cognitive emotional reactions when confronting male infertility diagnosis with subthemes of disbelief and denial, frustration and confusion, fear and apprehension, suffering and emotional distress, and disappointment and joy. The theme and subthemes are shown in [Table 2](#). The diagnosis of male infertility is one of the most critical stages of dealing with the husband's infertility and has created many challenges for women. Most participants had experienced numerous emotional cognitive traumas, which are addressed in the following section.

**Table 2**

Extracted Theme and Subthemes

Theme	Subtheme
Cognitive emotional reactions confronting with male infertility diagnosis	Disbelief and denial
	Fear and apprehension
	Suffering and emotional distress
	Disappointment
	Frustration and confusion
	Joy

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### 3.2.1. Disbelief and denial

Some women, when faced with the unexpected news of infertility, are in disbelief or denial. The participant's statements regarding the moment they found out about their husband's infertility are presented as follows: Participant 1 stated: "When I took my husband's test to the doctor, she told me that he does not have any sperm ... I was just staring at her." Participant 9 stated: "When the doctor saw the spermiogram result, he said this is very low, as soon as

he said that my heart just dropped.” A participant with four years’ history of infertility was perplexed and stated: “My husband and I were shocked ... I was just listening ... I had a lot of stress ... I was thinking that we could never have children...” (Participant ١٤). Participant ٧ also said: “I was shocked and surprised when I heard his diagnosis. I never thought that such a thing would happen to me.” Denial and rejection of male infertility diagnosis was a subcategory that emerged from the data. A participant’s reaction when faced with male infertility diagnosis was: “I told myself that this cannot be true; any way I have to have a child by this time next year” (Participant ٩). Participant ٣ stated: “When the doctor told me that my husband was infertile and we could not have children, I said have you come from God that you can say we cannot have children?”

### **٣,٢,٢. Frustration and confusion**

Some women reported that, at the moment of the doctor’s diagnosis of male infertility, they did not understand what was happening. Not expecting this outcome or the importance of this diagnosis may be the cause of confusion when faced with the initial diagnosis. In this respect, Participant ٥ said: “I felt speechless when the doctor told me that my husband was infertile.” Participant ١١ said: “We did not know what this disease was ...”

### **٣,٢,٣. Fear and apprehension**

Some factors that women mentioned during interviews were signs of fear following the male infertility diagnosis. This included fear of disturbing the peace in their lives, separation, and how the husband and family would react to the male infertility diagnosis. In this respect, Participant ٦ stated: “I was afraid ... I thought that this might cause us to separate.” Other concerns of the women were how to inform friends and relatives of the infertility diagnosis of the husband and how they will react. Participant ١٤ said: “What could I tell the relatives? What would they say? If they say anything to me, we will have an argument.” Many women, especially those married to men recently diagnosed with male infertility, were concerned about the disruption of their normal life routine. In affirmation of this, Participant ٧ said: “I realized that this life will not be the same anymore ... that comfortable and carefree life will not be the same now.”

### **٣,٢,٤. Suffering and emotional distress**

Being informed of the male infertility diagnosis, imagining the end of joy that they had in life, the sadness of the husband of being diagnosed, and how to inform their relatives and families of the infertility were painful and distressing experiences that were frequently reported by women. A participant with four and half years of experience of infertility stated with a sad tone: “When I found out, I was very upset. My heart was broken. It was like I had lost someone. I cannot describe how I felt” (Participant ٩). In this respect, Participant ٤ stated: “I was upset the first time the doctor told us that my husband does not have sperm.” Participant ٥ noted: “I was upset that we had this problem.” Participant ١٤ also said: “The test results showed that we had zero possibility. I got so upset, my heart was broken.” Participant ٧ remarked: “I was depressed, lethargic, sad, and hopeless ... I was just crying ... I was upset that those wonderful days that we had together were over now.” Some women cried following the male infertility diagnosis. In this respect, Participant ١ stated: “The doctor looked at me and said that we cannot get pregnant and the possibility was zero. My heart was broken. I started to cry; nothing was important for me anymore. I was just crying.” Participant ١٢ said: “I was upset ... I started to cry. I could not stand it anymore.”

### **٣,٢,٥. Disappointment**

Many women mentioned hopelessness as an important effect of the infertility diagnosis, especially untreatable infertility, on their mental status. Disappointment was mostly experienced suddenly and after hearing the diagnosis of infertility or untreatable infertility. On this subject, Participant ٩ said: “After finding out about my husband’s infertility, I was ٩٠٪ hopeless. It was like when you have a relative in a coma, and they tell you that his heart is only working ٥٪—١٠٪ and his hope for survival is only ١٠٪. You have as much hope as his heart is beating.” Participant ١١ also said: “I was really hopeless ... we can’t have children, and I won’t get pregnant.”

Some of the women felt happy when they were informed of the male infertility diagnosis because they were no longer under pressure from their families. Participants ۱۴ stated: "I was happy that no one could rebuke me; my husband could not rebuke me that I could not get pregnant. They always told me that I was thin and weak; I was happy to tell my sister in law because she always reproached me." Participant ۲ noted: "I thanked God that I was not the problem. He was the problem, and he was always blaming me. Now I could tell them that he was the problem not me."

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#### ۴. Discussion

Women who participated in this study differed in age, educational level, occupation, duration of marriage, and cause of infertility but had all experienced living with infertile husbands. In the present study, psychological consequences were categorized into one theme of cognitive emotional reactions when faced with the male infertility diagnosis. Most women participating in the study emphasized the psychological trauma they experienced due to the infertility diagnosis of their husbands. This period was different for the participants and had diverse psychosocial factors. It included fear and concern and the burden of negative behavioral and psychological effects of the society.. At this stage, the participants feel and experience a period of social and psychological pressure. Although infertility is important for the couple (۱۵), studies have shown that the negative effects of infertility were higher for women than for men (۲۱-۲۳). Savadzadeh stated that if attempts to get pregnant fail, it can become a destructive emotional experience for the couple, but infertility, often, imposes a heavy burden on the women (۳۹).

Findings of this study showed that the diagnosis of male infertility is one of the most critical stages of dealing with the husband's infertility. It seems that becoming aware of infertility is the cause of mental breakdown. The day of the male infertility diagnosis was a day that the women would not forget. Most of the participants expressed their fear, distress, and astonishment when they heard the diagnosis. For most people, the ability to reproduce is a fundamental issue in life. Accordingly, the inability to have a child is stressful, causing confusion in life (۹, ۱۰, ۲۶, ۴۰). Connolly et al. concluded, in their study, that male infertility factors cause greater mental breakdown for both men and women, but its intensity is less in men than in women (۲۹, ۴۱). Newton reported that there were more concerns regarding male infertility compared with unidentified causes of infertility and female infertility (۲۲).

In this study, during the stage of male infertility diagnosis, different and sometimes contradictory reactions were observed in women, including disbelief and denial, intensified fear and concern. As previously noted, in the response to the diagnosis of male infertility, women were in denial because they were faced with an unexpected phenomenon. They were shocked and stunned, and they even denied the problem. Among the most important factors that caused fear in women, when diagnosed with male infertility, was imagining that they will not have the normal and calm life they had and their husbands will not be the same. After being informed of male infertility diagnosis, the women experienced feelings of sadness, depression, and despair, especially newlyweds, because these conditions lead to feelings of insecurity and fear due to their impact on life and marital instability. The diagnosis of infertility reduces or even eliminates the hope to have children. According to women, this pain is mutual, and it is not important whether the cause is female or male infertility. In addition, young people, even after marriage, are still under the influence of their families; therefore, infertility is not just a private matter between the husband and wife. It is a matter that involves several other people (family, the infertile person, the spouse, spouse's family and friends) (۲۷, ۳۶, ۴۲).

Most participants in this study mentioned fear. It was important for the researcher to understand the scope and depth of this concept. Thus, fear of the unpleasant reactions of others and the stigma of infertility are among the main concerns of women participating in this study. Social pressure and waiting for the women to get pregnant was mostly focused on the wife; following the delay in pregnancy, the women are the ones who experience infertility stigma. From normal women, they are turned into defective women. It seems that, even when

the person does not experience the infertility stigma, the fear of such reactions will typically torment a woman. From the perspective of these women, regardless of the cause of infertility, people blame the woman for the delay in childbearing and women were typically accused of infertility. Studies by Tabong and Mumtaz also noted that the reactions of others will place more pressure on women (۲۵, ۲۶). The husband and his family being influenced by peoples' comments about female infertility, the possibility of conflicts, and family controversy followed by separation is a significant factor that influenced the fears of women following delay in pregnancy. Mohammadi has suggested that women typically feel responsible for every bad thing that happens, and, as a result of this responsibility, they suffer more damage (۴۳). In analyzing this perspective, numerous factors in highlighting of the role of women and seeing them as the cause of infertility in Iran can be mentioned (۴۴). It must be acknowledged that pregnancy is of greater importance to the women themselves (۴۴), and any delay in the signs of pregnancy are typically unacceptable for them (۳۵) because, for most women, becoming a mother is one of the aspects of their feminine identity and fostering their gender role. They believe that a woman's status in society depends on having children; therefore, by losing this opportunity, they typically suffer psychological, personality, and social damages (۲۲, ۲۶, ۲۹, ۳۲, ۳۵). Community pressure regarding fertility is focused more on women than on men. Expectations to be fertile are more focused on women than on men. Therefore, women are blamed more than men (۱۵, ۳۲). Gibson also states that, in addition to the women's feeling of responsibility of infertility, the husbands also blame the women (۲۱). These findings suggest that, from the social perspective, regarding infertility, regardless of its cause, the couple typically both blame the woman. In fact, the phenomenon of infertility is a subject for which clear social boundaries cannot be defined. Hence, everyone, even nonfamily members, think that they have the right to judge. Even strangers break these boundaries and allow themselves to make judgments (۱۵, ۴۵). The women were often responsible for informing the husband of their infertility, which showed the effort and involvement of women in pursuing the cause of infertility. How to give the news was uncomfortable for women. Crying was one of the reactions of women when they were informed of the male infertility or it being untreatable. Crying probably helps women at such critical moments. Many other studies have introduced infertility an unpleasant experience, especially for women, and have suggested that the suffering and pain of dealing with infertility is much stronger and deeper in women than in men. Women have shown to be more vulnerable to this phenomenon (۴۶, ۴۷). Researchers believe that, although stress caused by any source has more pressure on women's lives, the stress of infertility has more negative pressure on women (۴۸). Overall, the results of studies conducted in Iran indicated that most infertile individuals encounter unpleasant reactions from their social environments (۳۹, ۴۰). Therefore, in Iranian culture, the social pressure to have children and social reactions toward this group of people in society are the underlying causes of physical and psychosocial problems, especially for women (۴۹, ۵۰). This condition is actually the transference of a private pain to a socially evident pain, and this pain is more exasperating than the pain of infertility (۵۱). In other words, infertility is a social phenomenon. Infertility not only involves the wife and the husband, it also includes their families and friends. Therefore, infertility is one of the worst experiences in life, and the social background and conditions of the couple can also affect it, thus transforming it into a personal crisis (۴۹, ۵۲).

Some limitations of this study included difficulties in accessing an affordable and relaxed environment for the interviews, the tendency for secrecy, women's unwillingness to express some of their experiences, and the dissatisfaction of some of the participants with recording of interviews due to the privacy issues of infertility, resulting in the prolonged process of data collection. The researchers tried to provide explanations and reassurance for participants to maintain the confidentiality of interviews in order to overcome this problem.

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## •. Conclusions

The findings of this study demonstrate that diagnosis of male infertility is a life crisis, thus leading to serious emotional and psychological trauma in women. It also is associated with receiving social pressure from others, especially the spouse's family. Therefore, it is recommended that this issue be considered as a high-risk psychological circumstance for women. They should be under emotional and psychological care at early stages, even before the announcement of infertility. In these circumstances, it can be expected that access to counseling services will decrease their mental problems when faced with the male infertility

diagnosis. Therefore, it is hoped that, by using the results of this study, counseling services can be designed specifically for them. These findings emphasize the need for providing holistic health care for women and their families in the course of their crisis. Awareness of these experiences can provide the health care team with a more comprehensive understanding of the issues that women are faced with. Therefore, this study makes a significant contribution to improve the delivery of services. These findings also indicate the need for educating families of the couples and providing social protection for women in order to create a more positive experience for women when they are faced with this crisis. Finally, further research on the consequences of the male infertility diagnosis in men, women, and their families is recommended. One strength of this study is that it is the first study in this field in Iran.

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## Footnotes

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