

The Perception and Experience of Infertile Women Who Received Acupressure in Relation to Anxiety: A Qualitative Study

Abstract

Background: Women, who are in a critical situation like infertility, are more prone to depression, anxiety, and low self-esteem than other people. The aim of this study was to explore the deep experience of anxiety in infertile women who received acupressure during *in vitro* fertilization/intracytoplasmic sperm injection (IVF/ICSI). **Materials and Methods:** This qualitative, conventional content analysis study was performed on 14 infertile female participants in the Milad IVF Center in Mashhad, Iran, from September 2015 to August 2016. The study subjects included Iranian women, aged 20–45 (mean [standard deviation, SD] 29.07 [4.06]) years with primary infertility. Acupressure was performed on the Heart 7 and Pericardium 6 acupoints in 12 sessions. Data were gathered through semi-structured interviews, and transcribed, coded, and organized in different categories based on three primary phases of preparation, organization, and reporting. **Results:** The results showed the two major categories of “body perceptions of anxiety diminution” and “mind experiences.” The body perceptions category consisted of three subcategories, namely, reduction of nervous, cardiovascular, and gastrointestinal signs and symptoms. The subcategories of the mind experiences category consisted of emotional and cognitive consequences. **Conclusions:** The qualitative findings showed a number of positive outcomes in the physical and mental signs and symptoms of anxiety in infertile women undergoing IVF/ICSI, so acupressure can be used for reducing the unpleasant feelings and body perceptions of these women.

Keywords: Acupressure, anxiety, infertile women, Iran, qualitative research

Introduction

According to statistics, infertility affects 10–15% of couples.^[1] The highest prevalence of infertility has been observed in South Asia, Sahara, North Africa, Middle East, Central and East Europe, and Central Asia. Accordingly, Iran that is located in the Middle East region has a high-infertility rate.^[2] Considering the high motivation^[3] for childbearing and its role in the establishment of couple relationship and family foundation,^[4] infertility is often the cause of the infertile couple's exposure to crisis in all aspects.^[5] Those who face this critical situation are more subjected to depression, anxiety, low self-confidence, and dissatisfaction.^[6] In an investigation by Noorbala *et al.* (2009) on the prevalence of psychiatric disorders among fertile and infertile women, it was found that 44% of infertile women suffered from psychiatric disorders.^[7] Infertility with some issues like waiting for treatment, various phases of treatment, and its failure cause stress,

anxiety, despair, disappointment, sorrow, depression, and emotional responses. On the other hand, IVF, ICSI, and other fertility treatments create additional stress in patients; in many cases, these approaches also lead to anxiety.^[8–11] Teaching relaxation techniques or behavioral therapy can enhance successful treatment and the probability of pregnancy by lowering stress and anxiety.^[12] The findings of Pilkington *et al.* (2007) revealed that acupuncture has a positive impact on treating generalized anxiety disorders.^[13] The results of a systematic review study by Hassanzadeh Bashtian *et al.* (2017) also showed that the use of acupuncture can decrease anxiety in infertile women.^[14] The findings of previous studies show that acupuncture may increase confidence, relaxation, and well-being, coping, and positive emotion, and provide social support. In a previous study, acupoints were stimulated in infertile individuals to influence ovarian activity and to enhance psychological well-being.^[15]

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Maryam Hassanzadeh-Bashtian¹, Talat Khadivzadeh¹, Shapour Badiiee-Aval², Habibollah Esmaily³

¹Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran, ²Department of Acupuncture, School of Traditional Medicine, Mashhad University of Medical Sciences, Mashhad, Iran, ³Health Sciences Research Center; Department of Biostatistics and Epidemiology, School of Health, Mashhad University of Medical Sciences, Mashhad, Iran

Address for correspondence:

Dr. Talat Khadivzadeh, Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran.
E-mail: Khadivzadeht@mums.ac.ir

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Acupuncture and acupressure are similar in principles; however, in acupressure, no needle is used and the acupoints are stimulated by pressing fingers or special instruments on the skin's surface to release and balance the vital energy of the body.^[16,17] The results of a clinical trial by Qu *et al.* showed the effect of ear acupressure on reduced anxiety levels and IVF outcomes in infertile women.^[18]

Acupressure, unlike acupuncture, is an easy and inexpensive method that can be taught to others. The literature review showed that no qualitative study has been conducted on the experiences of infertile women after performing acupressure as a complementary medicine. Therefore, this qualitative study was conducted to explore the deep experiences of infertile women who received acupressure as a treatment for anxiety while they were under treatment by induction ovulation for IVF/ICSI.

Materials and Methods

The present study was a conventional content analysis with a qualitative approach^[19,20] and was carried out on infertile women being treated by IVF/ICSI. After receiving the approval of the ethical committee of Mashhad University of Medical Sciences, Iran, the researcher attended the research environment. The study was performed in the Milad IVF Center of Mashhad University of Medical Sciences from September 2015 to August 2016.

A qualitative content analysis was used to reveal people's understanding and experiences, as well as everything that existed in their lives and aimed to provide knowledge and understanding of the under investigation phenomenon. The qualitative content analysis was employed to get a valid and replicable inference of the related data to present knowledge and a new point of view in order to introduce the facts and a practical guide for research.^[21]

Participants were recruited from among a group of infertile women under treatment of induction ovulation drugs in order to receive IVF/ICSI. They also received 12 sessions of acupressure treatment. The researchers invited 20 participants to take part in this qualitative study; however, data saturation was reached after 11 interviews. To be sure, three more interviews were conducted, and no new data were gained. Three participants refused to participate in the interview due to moving to other cities, lack of intention to communicate their experiences, and personal reasons. All participants had 20–45 years of age, Iranian nationality, female infertility, and primary infertility, and were not taking any antianxiety and antidepressant medicine. The waiting period before IVF/ICSI was chosen as anxiety is very common in this period of time. The exclusion criterion was the occurrence of a sudden stressful event during the acupressure treatment. The participants had not had the experience of acupressure or acupuncture before the recent treatment.

The acupressure treatment included pressing on the Heart 7 and Pericardium 6 acupoints on both hands, which

was performed by the first author (MH) who was trained by an acupuncturist. The points were pressed for up to 3 min. The criterion for performing acupressure correctly was feeling of heaviness in the area that was pressed. In total, four sessions of acupressure therapy were carried out by MH and eight sessions by the participants at home. The participants were also trained in finding and pressing the acupressure points by MH. Participants were invited to attend the interview sessions during 1–3 days after the acupressure treatment. The researcher assured the participants of the confidentiality of their information and that they would be informed of the findings extracted from the interviews. Interviews were done before IVF/ICSI treatment.

After establishing a suitable communication, building trust, and making sure of their willingness for participating in the interview, the venue for the interview was determined cooperatively. The main data collection method was in-depth and semi-structured face-to-face interviews. The researcher only facilitated the process and helped subjects describe their experience by asking them follow-up questions, and without any suggestions or leading questions. Based on a mutual agreement, the interview took 30–60 min, then, immediately after, it was transcribed verbatim; even the participants' emotions, laughter, and silence were coded. The analysis began without any delay after the interview. The general questions posed were "Explain your experience of acupressure" and "What psychological changes did you experience after acupressure?" Nearly all interviewees first pointed to the reduction of their anxiety and worries about the outcome of their treatments when they explained their experiences. Subsequently, they were asked to explain more about their anxiety. In addition, some exploratory questions were posed, like "Explain more!" and "Give an example!" to get access to in-depth data. During the interviews, the researcher tried to make use of the subjects' speech based on their experiences. All the interviews were conducted in Farsi, and the speeches were recorded and transcribed immediately.

The main data analysis was based on conventional content analysis, including three major phases, namely, preparation, organization, and report analysis.^[20,21] The qualitative data were explained by conventional content analysis based on the method introduced by Hsieh and Shannon (2005).^[20] MAXQDA software was used for analyzing the qualitative data. During the preparation phase, all the interviews were noted separately and in the shortest possible time; then, they were considered as units of analysis. Subsequently, using posteriori approach, organizing, and reviewing, meaning units related to each research question were selected through an inductive approach, and primary open codes were assigned to each of them. Semantically similar open codes were grouped as subcategories, and finally, the main categories emerged. To ensure the trustworthiness of the results in this study, confirmability,

credibility, dependability, and transferability were used.^[22] Confirmability was obtained through bracketing and retaining an evident, easy-to-follow audit trail of all the research activities and analysis notes. A part of this data was given to another researcher, as an external evaluator who was not involved in the study, to see if she had similar interpretations of the data. Meanwhile, the audit was performed by external evaluators. We used peer debriefing to strengthen credibility. Dependability was obtained by long engagement in data analysis. For transferability, we recruited participants with various demographic characteristics.

Ethical considerations

Participants were informed of the aim of this study and recording of the interview, and a written consent was obtained. The right to withdraw at any time during the research was one of the ethical codes observed. The Ethics Committee of the Mashhad University of Medical Sciences approved the study with reference number IR.MUMS.REC.1394.313.

Results

Participants' characteristics are presented in Table 1. To perform this qualitative study, the data on the experience of 14 infertile women, who were undergoing treatment by induction ovulation for IVF/ICSI and received acupressure, were gathered and analyzed through conventional content analysis.

Two main categories emerged from the data, including "body perceptions of anxiety diminution of acupressure" and "mind experiences of acupressure" [Table 2]. The body perceptions category consists of three subcategories, namely, reduction of nervous, cardiovascular, and

gastrointestinal signs and symptoms related to infertility. The mind experiences category includes emotional and cognitive consequences. The cognitive consequences subcategory consists of creating tranquility, and enhancing thinking and concentration. The emotional consequences subcategory includes decreasing fear of treatment failure, bad occurrences, death, and losing control. The main categories extracted from the data are described in the following sections.

Body perceptions of anxiety diminution after acupressure (category)

Nearly all of the participants provided a comprehensive description of the perceived changes in their bodies caused by acupressure. It mainly included their positive experience of a change within themselves after acupressure. These categories inductively emerged from the three subcategories of nervous, cardiovascular, and gastrointestinal consequences of acupressure based on changes in unpleasant bodily signs and symptoms that arose following their infertility.

Perceived cardiovascular symptom changes

Some of the participants perceived a number of changes in cardiovascular symptoms and signs that lead to reduction in their anxiety. A problem among the women was facial blushing that was severe in some of cases. Some interviewees reported the fading of facial blushing after acupressure. *"I had facial blushing on my face, but now I do not have it anymore. It was so severe. Everybody could see that I was stressed out, but now it is not so."* (No. 9, 30 years old, elementary school).

A few of the subjects mentioned having high-blood pressure and headaches due to stress before acupressure, which disappeared after acupressure as a cardiovascular symptom relief. One of the women said: *"Previously if I was stressed, my blood pressure would hit the roof. But, since doing this (acupressure) I have not had this problem at all. As soon as my blood pressure increased, I had headaches. But, now that I have done this, I never have headaches ... when I measured my blood pressure using a manometer, it was not high."* (No. 7, 27 years old, academic education).

Some participants stated having hot feeling, which reflected a cardiovascular symptom. However, it was reduced following the acupressure therapy. In this regard, a participant stated: *"Ever since I have done acupressure, I do not get feeling hot. I think 50% of this is due to acupressure."* (No. 3, 27 years old, high school).

Perceived nervous symptoms changes

Improvement of nervous symptoms was also understood following acupressure by the infertile women. For example, a number of participants experienced sleep disorders that were intensified after infertility diagnosis, such as waking up in the middle of the night in horror that started to get

Table 1: Demographic characteristics of the participants

Characteristics of participants	n (%)
Age (year)	
20-25	1 (7.10)
25-30	6 (42.90)
30-35	6 (42.90)
>35	1 (7.10)
Education level	
University	4 (28.60)
High school	4 (28.60)
Guidance school	2 (14.30)
Elementary school	4 (28.30)
Employment status	
Employee	4 (28.57)
Homemaker	10 (71.42)
Duration of infertility (year)	
1-3	2 (14.30)
3-6	5 (35.70)
6-9	6 (42.90)
>9	1 (7.10)

Table 2: The categories, subcategories, and examples of codes

Examples of codes	Subcategory	Categories
Fading of facial blushing Disappearance of high-blood pressure and headache Reduction of hot feeling Improvement of sleep disorders Anxiety reduction Disappearance of tremor Improvement of nausea Indigestion reduction Rise in concentration Positive thinking Management of negative thoughts	Perceived cardiovascular symptoms changes Perceived nervous symptoms changes Perceived gastrointestinal symptoms changes	Body perceptions of anxiety diminution after acupressure
Reduction of the fear of treatment failure Reduction of the fear of death Reduction of the fear of bad happening Reduction of the fear of loss of control	Cognitive consequences after acupressure Emotional consequences after acupressure	Mind experiences of acupressure

better after acupressure. Some of the participants affirmed: *“Previously, I was awake until the Azan in the morning. I would be nervous every time I saw that the house is dark and my wife is sleeping, but I cannot sleep. I was more nervous and huffy. But now I am not; thank God. I think this may be the effect of acupressure.”* (No. 2, 27 years old, high school).

Mood swings reduction was another nervous symptom that was mentioned by the women after acupressure. A few participants referred to the reduction in their sense of disquiet after acupressure. A woman said: *“I would sometimes feel good, and then, suddenly I would feel blue and start to cry when I was stressed out. But, now these mood swings have decreased.”* (No. 12, 30 years old, elementary school).

Some infertile women had complained of tremor in their body when they were waiting for their induction ovulation treatment result. The disappearance of hand tremor, and tremor in the feet and the whole body was also reported by some after acupressure. *“I was so stressed that my hands, feet, and my whole body would tremble. But, now I come and go naturally. In my opinion, it is because of acupressure.”* (No. 8, 26 years old, academic education).

Perceived gastrointestinal symptom changes

Some infertile women mentioned gastrointestinal symptoms in relation to their infertility, especially, when they were coming to the infertility center. In this regard, some of the participants reported experiencing nausea and indigestion before acupressure that was later reported to have disappeared. *“My stomach hurts a lot. I felt nauseous. Thank Goodness, now I am fine. Often times, I used to feel sick when I came to Mashhad (for treatment).”* (No. 14, 31 years old, academic education).

One of the interviewees said:

“Before I performed acupressure, I had heartburn and the doctor gave me a stomach medicine. Since I have been performing acupressure, I feel that my stomach is better and I have less heartburn.” (No. 4, 30 years old, elementary school).

According to the quotes and subcategories obtained, the participants’ experiences indicate the positive effects of acupressure on perceived body symptoms and signs of anxiety.

Mind experiences of acupressure (category)

This category consists of the two subcategories of acupressure’s emotional and cognitive consequences.

Emotional consequences after acupressure

The participants noted that reduced emotional effects of infertility after acupressure included a reduction in fear of treatment failure, death, mishap, and loss of control. Some of the participants had an unknown fear of a bad event in the future. Some of them were concerned about the failure of treatment during the treatment cycle, and this seems to have caused severe anxiety. Others were worried about other bad occurrences that could take place and thought that they might happen to them. A number of participants had experienced both of these concerns. After acupressure, some participants mentioned the disappearance of the fear of treatment failure. Moreover, fear of a mishap and bad occurrence were reduced in some participants after acupressure. *“I was terrified of the probability that I might not be treated. I was too frightened of something bad happening to me. Thank God, now the fear has lessened.”* (No. 5, 30 years old, academic education. No. 6, 21 years old, guidance school).

Anxiety can be the cause of loss of control. Some interviewees stated that when they were anxious, they liked to destroy everything. This loss of control was no longer experienced after acupressure. A participant stated: *“When*

I have stress and anxiety, I love to destroy everything and scream. But, since I have been performing acupressure, I do not feel this way anymore.” (No. 13, 28 years old, high school).

Cognitive consequences after acupressure

Nearly all participants mentioned having some degree of problem with concentration, mental disturbance, and inability to control a potentially stressful event that they thought were related to their high level of anxiety. Findings indicate an increase in concentration, positive thinking, and management of negative thoughts in these people.

Anxiety causes a decrease in concentration, but some participants said that, after acupressure, their concentration increased. Regarding management of negative thoughts, the interviewees said that, when they performed acupressure, their concentration for finding the acupressure point causes them to forget their negative thoughts. In this regard, one of participant mentioned: *“I wake up early and my first thought is to press my hands (acupressure), and then, I forget (negative thoughts). Even if a bad thought crosses my mind, I think it is nothing. That is how I forget.” (No. 10, 38 years old, elementary school).*

In most cases, anxiety leads to negative thoughts. In this regard, some participants said they are more likely to have positive thoughts when they perform acupressure. Regarding positive thinking, one of them said: *“Acupressure makes me think more. My mind is more at ease. I feel I think more positively.” (No. 3, 27 years old, high school).*

Most of the participants in the present study stated that they had unexpected satisfactory experiences from acupressure and it had good and effective results. There was no reported side effect of acupressure during the research period. The experiences of all participants indicated the positive effects of acupressure, but the induction effect may also be effective in this regard.

Discussion

To the authors' knowledge, this is the first qualitative research on the perception and experience of infertile women undergoing IVF/ICSI and acupressure in relation to anxiety. Consequently, the authors compared their qualitative research results with quantitative research results. The results of in-depth interviews in this qualitative study, regarding the experience of acupressure by infertile women, led to the emergence of two main categories, namely “body perceptions of anxiety diminution” and “mind experiences” of acupressure. The results of this study suggest that acupressure can be helpful in reducing physical signs and symptoms and improving the mental aspects of infertility-related anxiety.

In the present study, most of the participants' experiences and perceptions of acupressure dealt with anxiety reduction and creating calm following acupressure, which seems to be in line with the findings of de Lacey *et al.* (2009). They

reported that acupuncture can be used to enhance well-being and to neutralize the effects of stress due to IVF.^[23]

In the current study, women asserted that by practicing acupressure, they relieve stress and relax. In addition, their symptoms like sleeping disorder, tremor of the hands, feet, and the whole body, feeling hot, high blood pressure and headache, nausea, indigestion, facial flushing, fear of bad occurrences, and loss of control have either reduced or totally disappeared. The findings of this study are similar to that of the study by Smith *et al.* (2011) on the achieved changes after acupuncture. In their study, they focused on infertile women's experience, the psychological and perceived effects of acupuncture including expectations from, positive experience of, and perceived changes after acupuncture, which was described as physical and emotional relaxation, peace of mind, and changing in adjusting and perceptions of adjusting.^[24]

Sleep disorders, which continued until dawn, and repeated waking with anxiety and panic were reported as anxiety symptoms that were improved with acupressure in this study. A notable point is the fact that in available questionnaires, sleep disorders are not noticed as the anxiety symptoms. One of the participants' experiences was fear of treatment failure that was specific to infertile individuals, but it is not in the available anxiety questionnaires.

The only studies dealing with infertile women's experience of acupuncture are those of Smith *et al.*^[24] and de Lacey *et al.*^[23] The present study, however, has dealt with infertile women's experience and perception of acupressure. Qu *et al.* (2014) have also carried out an interventional study on the effect of ear acupressure on anxiety and fertility consequences.^[18] Moreover, Au *et al.* (2015) checked the effects of acupressure on anxiety in a systemic review and metaanalysis. The findings of their study, which were gained from the investigation of 39 clinical trials, revealed that acupressure has a positive impact on relieving anxiety while waiting for an operation or treatment.^[25] The results of the above two studies confirmed that acupressure has a positive effect on reducing anxiety and their findings were in accordance with that of this study.

All participants were from the east and northeast of Iran; thus, one of the strengths of this study is its transferability. As the Milad IVF Center is the only academic center in the northeast of Iran, it provides a wide range of infertile individuals.

The limitation of this study was the presence of the researcher and limited verbal communication with participants that may strengthen the efficacy of acupressure; so, the findings cannot only be associated with acupressure.

Conclusion

The qualitative findings show a number of positive outcomes in terms of the physical and mental signs

and symptoms of anxiety in infertile women who were undergoing treatment with induction ovulation for IVF/ICSI. Hence, acupuncture can be used to reduce the unpleasant feelings and body perceptions of these women.

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Conflicts of interest

Nothing to declare.

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