



Original Article

The Effect of Counseling with a Positive Approach on Anxiety about Giving Birth to an Infant with Anomalies in Pregnant Mothers over 35 Years of Age

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Abstract

Background: Currently, a significant number of women are becoming pregnant after the age of 35. Since advanced maternal age is recognized as a risk factor for adverse pregnancy outcomes and fetal complications, there is a heightened potential for increased anxiety and worry among those who become pregnant at older age. Prenatal counseling can play an important role in reducing anxiety and psychological distress, while also promoting the physical and mental well-being of expectant mothers.

Objectives: The present study aimed to determine the effect of positive counseling on anxiety concerning giving birth to an infant with anomalies in pregnant women over 35 years of age.

Methods: This randomized clinical trial was conducted on 46 pregnant mothers over 35. Participants were conveniently recruited and then randomly assigned to either the experimental or control group using block randomization. The study instrument was the Pregnancy-Related Anxiety Questionnaire (PRAQ; Vanden Berg, 1989). The experimental group received positive counseling in eight 70-90-minute virtual sessions. Data were analyzed using the Chi-square test, independent samples t-test, and covariance (ANCOVA) analysis in SPSS version 22.

Results: The mean scores of anxieties concerning giving birth to an infant with anomalies before the intervention were 16.30 (6.47) in the experimental group and 12.13 (6.31) in the control group. An independent samples t-test revealed a statistically significant difference between the mean pretest scores of the two groups ($p = 0.032$). After the intervention, the mean scores of anxieties concerning giving birth to an infant with anomalies were 8.56 (4.65) in the experimental group and 13.34 (6.47) in the control group. An ANCOVA demonstrated a statistically significant difference between the mean post-test scores of the two groups ($p < 0.001$).

Conclusion: Positive counseling reduces anxiety concerning giving birth to an infant with anomalies in pregnant women over 35 years of age.

Implications for Nursing and Midwifery Preventive Care

- Implementing positive counseling approach by midwives working in community health service centers for pregnant mothers over 35 years of age in order to prevent and reduce anxiety in this group of mothers and promote the mental health of the community and mothers.



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Introduction

Pregnancy is a significant phase in a woman's life. During this time, women may experience varying degrees of fear and anxiety for various reasons [1,2]. Marital relationship problems during pregnancy, concerns about fetal health, fear of preterm childbirth, childbirth pain, and the risk of fetal injury during childbirth are among the stressful events in pregnancy. Anxiety is defined as "an unpleasant feeling stemming from any internal or external stimulus that can disrupt emotional equilibrium," and it manifests as a sense of apprehension or fear [3]. Anxiety during pregnancy is concerning because it is uniquely associated with adverse maternal and child health outcomes during pregnancy, at birth, and in early childhood [4-8]. Therefore, these disorders are of particular importance during pregnancy [9]. In Iran, the anxiety level among pregnant women has been reported as 49.3% [10]. As mentioned, concerns about fetal health and genetic issues are among the reasons for women's anxiety and fear during pregnancy [11-14]. Today, women across the world are having children later in life compared to previous generations [15]. It warrants attention that a substantial change has taken place in the perception of the concept of motherhood, alongside transformations in women's social and economic circumstances. Young women are increasingly focused on pursuing education, career development, and achieving financial stability, leading them to postpone decisions about childbearing [16]. Consequently, pregnancies at older maternal ages have become more prevalent in recent decades. This trend of increasing maternal age has been reported in developed countries as well. For instance, the Centers for Disease Control and Prevention (CDC) has documented an increase in birth rates among older women (maternal age over 35 years) over the past three decades in the United States. Although there is no standardized definition of advanced maternal age [17,18], some authors define it as 35 years and older, while others consider it to be 40 or even 44 years [19]. According to common definitions, advanced maternal age refers to "pregnancy at the age of 35 and older" [17]. Over the past 100 years, the notion that older mothers are at higher risk during pregnancy and childbirth has been increasingly emphasized [20]. Evidence suggests that considering pregnant women over 35 years of age as high-risk can induce anxiety in these mothers [21]. Pregnant women over 35 years of age have a strong desire for acquiring knowledge and

information, and being labeled "high-risk" causes them anxiety, which they attempt to mitigate by preparing for pregnancy and seeking information [22]. A study conducted in Poland on pregnant women over 35 years of age demonstrated that this group of women greatly tends to seek support and utilize strategies, such as positive coping mechanisms to alleviate stress and negative emotions [23]. Prenatal counseling can play a significant role in reducing anxiety and also promoting the physical and mental health of pregnant mothers [24]. Positive psychology is one of the approaches to cope with anxiety during pregnancy [25]. Researchers, including Park (1997), suggest that positive and constructive thoughts during pregnancy can mediate anxiety reduction in expectant mothers [26]. Positive psychology is the scientific study of optimal human functioning, aimed at better understanding and applying the factors that contribute to the flourishing of individuals and communities [27]. This approach focuses on individuals' positive attributes rather than their negative aspects, striving to promote individual and societal growth and flourishing by strengthening these attributes [28]. The effectiveness of these interventions in mitigating pregnancy-related stress has been empirically demonstrated [29]. Given that pregnancy and childbirth are among the most significant events in a woman's life, pregnancy-related anxiety requires assessment and management [30], and counseling can facilitate anxiety management and prevent adverse outcomes. Identifying pregnant mothers in need of counseling can facilitate the management of anxiety and fear, and prevent adverse outcomes for both mother and fetus. The growing number of pregnancies in women over 35 years of age, which are considered high-risk, highlights the necessity and importance of counseling in this area. Given the close association of this issue with the mission of midwifery, particularly counseling within midwifery practice, and based on the researcher's review, no studies were found investigating the impact of positive psychological counseling on anxiety in pregnant mothers over 35 years of age concerning giving birth to an infant with anomalies.

Objectives

Thus, the present study was conducted to investigate the effect of positive psychological counseling on anxiety in pregnant mothers over 35 years of age concerning giving birth to an infant with anomalies in the city of Zanjan.

Methods

Study Design

The current research is a randomized clinical trial conducted in Zanjan, following obtaining approval from the Research Ethics Committee and an ethics code, and being registered on the Iranian Registry of Clinical Trials (IRCT). The present study aimed to determine the effect of positive psychological counseling on anxiety concerning giving birth to an infant with anomalies in pregnant women over 35 years of age.

Participants

In the first stage, convenience sampling was performed among pregnant women over 35 years of age referring to selected comprehensive health service centers in Zanjan during 2021-2022. Participants meeting the inclusion criteria were then allocated to either the intervention or control group using block randomization. Within each block of four, two participants were assigned to the experimental group and two to the control group, resulting in a total of six possible block permutations, with each block being numbered. The blocks of four were selected using a random number table until the sample size reached 46.

The inclusion criteria consisted of reading and writing literacy, age 35 years or older, gestational age of 24-35 weeks, no history of known psychiatric disorders under treatment based on mother's statements, no experience of stressful life events in the past 6 months, no current or history of substance/psychotropic use, no child with anomalies, and obtaining moderate, severe, or extremely severe anxiety scores on the Depression, Anxiety, Stress Scale-21 (DASS-21).

Moreover, the exclusion criteria included non-attendance at more than one counseling session, premature termination of counseling before completion, the occurrence of stressful life events during the study period, and high-risk pregnancies, such as the development of diabetes, hypertension, or intrauterine growth restriction (IUGR). Finally, after excluding 130 individuals due to ineligibility and 24 due to unwillingness to participate, 46

pregnant mothers over 35 years of age were included in the analysis.

Interventions

The intervention implemented in this study included positive counseling based on the protocol developed by Rashid and Seligman (2013) [31], (Table 1).

Positive counseling interventions were implemented in eight 70-90-minute virtual sessions, via individual video calls on the WhatsApp application, twice a week, by the first author under the supervision of the corresponding author. The control group received routine prenatal care education. At the end of the study, by ethical considerations and as a token of appreciation, the control group was provided with a package of counseling sessions.

Table 1. The Protocol for Positive Counseling Sessions

Session 1: Introduction, overview of rules, administration of pretest, and explanation of positive psychology topics (Assignment: Writing a positive story about oneself)
Session 2: Strengthening one's key strengths and positive feelings and emotions, and identifying strengths of other family members (Assignment: Identifying capabilities)
Session 3: Discussion on forgiveness (Assignment: Writing a letter and announcing forgiveness)
Session 4: Discussion on gratitude (Assignment: Writing a letter of gratitude and presenting it to the intended person)
Session 5: Discussion on hope, optimism, and post-traumatic growth (Assignment: Writing about an instance of post-traumatic growth in one's life)
Session 6: Discussion on the role and importance of positive relationships in promoting self-efficacy (Assignment: Writing about a positive relationship and its role in one's life)
Session 7: Discussion on enjoying life, avoiding haste, and providing strategies for preventing habituation (Assignment: Writing about three enjoyable activities in life along with a goal)
Session 8: Summary of all presented material, integration of key points, and completion of questionnaires.

Outcomes

The instruments utilized in this study comprised a demographic and obstetric questionnaire and the Pregnancy-Related Anxiety Questionnaire (PRAQ; Vanden Berg, 1989). Participants completed these questionnaires before and after the intervention, allowing for an assessment of the intervention's effects through data comparison. The demographic and obstetric questionnaire contained questions about age, education level, duration of marriage,

employment status, number of pregnancies, number of childbirths, gestational age, number of living children, age of the youngest child, history of anti-anxiety medication use, history of physical illness, the mother's preferred mode of childbirth, and whether the pregnancy was planned or unplanned. The PRAQ, developed by Vanden Berg (1989), measures pregnancy-related fears and concerns [32]. The original version of this questionnaire contains 57 items. The short form of this questionnaire contains 17 items to assess five factors: Fear of childbirth (3 items), fear of giving birth to an infant with anomalies (4 items), fear of changes in marital relationships (4 items), fear of changes in mood and their consequences for the child (3 items), and fear of changes in the mother's personal life (3 items). Each item is rated from one to seven; the total score of the questionnaire is obtained by summing the responses to the items, ranging from 17 to 119. Higher scores denote greater anxiety in pregnant mothers. The PRAQ was translated into Persian and psychometrically evaluated by Karamoozian et al.

(2016). The reliability of the questionnaire, based on Cronbach's alpha coefficient, was 0.78, and for its five factors, it ranged from 0.69 to 0.76. Moreover, the test-retest reliability coefficient of this questionnaire was between 0.65 and 0.72 [33]. In the current study, the reliability coefficient of the above instrument was estimated to be 0.84 based on Cronbach's alpha.

Sample Size

Based on the results reported in Rashid Almasi et al.'s (2019) study conducted in Dezful County, and considering a 95% confidence level and 90% power, the minimum sample size was calculated to be 18 participants [31]. Accounting for a 20% attrition rate, the sample size was determined to be 23 participants per group (Figure 1)

Data Collection

Questionnaires were completed by participants at the beginning of the study and after the completion of the counseling sessions.

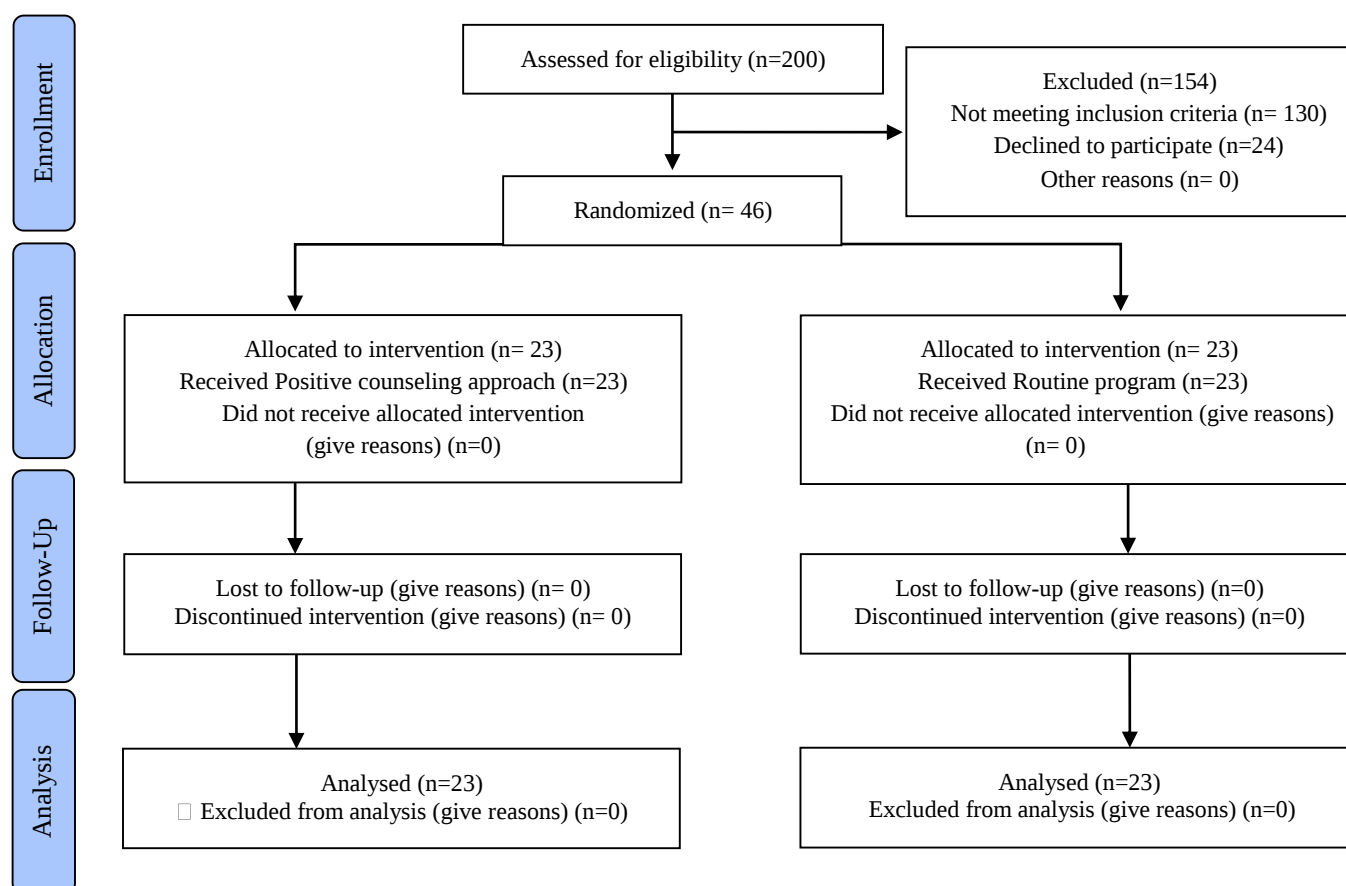


Figure 1. Participants' research enrollment process

Statistical Methods

The resulting data were ultimately analyzed using SPSS version 22. The Kolmogorov-Smirnov test was utilized to assess data normality, and given the non-normal distribution of the data, the Chi-square test, independent samples t-test, and analysis of covariance (ANCOVA) were employed. Additionally, a significance level of 0.05 was adopted. Data extracted from the questionnaires of both the control and experimental groups were compared, and then conclusions were drawn regarding the impact of positive counseling on anxiety concerning giving birth to an infant with anomalies in pregnant mothers over 35 years of age.

Results

Most of the pregnant mothers in the experimental group had a bachelor's degree (43.5%), while in the control group, the majority held a high school

diploma (34.8%). The economic status of the majority in both the intervention (73.9%) and control (65.2%) groups was moderate. Moreover, the majority of mothers in both the intervention (52.2%) and control (65.2%) groups were housewives. Most of the husbands in both groups were employed. The preferred mode of childbirth in both the intervention (52.2%) and control (60.9%) groups was cesarean section, and the pregnancy status in both the intervention (73.9%) and control (82.6%) groups was planned. Similarly, the majority of pregnant mothers in both the intervention (73.9%) and control (82.6%) groups used natural methods of contraception before pregnancy, and most of the pregnant mothers in both the intervention (78.3%) and control (82.6%) groups had no history of infertility. Other demographic information of the participants is presented in Table 2.

Table 2. Comparison of Demographic and Social Characteristics between Experimental and Control Groups

Variable		Experimental Group		Control Group		p
		n	%	n	%	
Education level	Under a high school diploma	2	8.7	4	17.4	0.284
	High-school diploma	5	21.7	8	34.8	
	Associate's degree	3	13	0	0	
	Bachelor's degree	10	43.5	7	30.4	
	Master's degree	3	13	4	17.4	
Economic status	Good	5	21.7	2	8.7	0.083
	Moderate	17	73.9	15	65.2	
	Poor	1	4.3	6	26.1	
Employment status	Housewife	12	52.2	15	65.2	0.459
	Employee	10	43.5	8	34.8	
	Self-employed	1	4.3	0	0	
Husband's employment status	Employee	9	39.1	7	30.4	0.632
	Worker	2	8.7	4	17.4	
	Employment status	12	52.2	12	52.2	
Preferred mode of childbirth	Cesarean	12	52.2	14	60.9	0.552
	Vaginal	11	47.8	9	39.1	
Pregnancy status	Planned	17	73.9	19	82.6	0.475
	Unplanned	6	26.1	4	17.4	
Method of contraception before pregnancy	Natural	17	73.9	19	82.6	0.523
	Condom	4	17.4	1	4.3	
	IUD	1	4.3	2	8.7	
	LD	1	4.3	1	4.3	
Infertility	Yes	5	21.7	4	17.4	0.710
	No	18	78.3	19	82.6	

Chi-square test

IUD: Intrauterine Device; LD: Low-dose oral pill

Based on the independent samples t-test, there was a statistically significant difference between the mean scores of anxiety concerning giving birth to an infant with anomalies in the experimental and control groups before the intervention ($p = 0.032$), so that anxiety levels in the experimental group significantly increased compared to the control

group after the intervention. However, the results of the independent samples t-test revealed that the mean scores of anxieties concerning giving birth to an infant with anomalies significantly decreased in the experimental group compared to the control group after the intervention ($p < 0.006$) (Table 3).

Table 3. Comparison of Mean Scores of Anxiety Concerning Giving Birth to an Infant with Anomalies in Experimental and Control Groups Before and After Intervention

Variable		Experimental Group Mean (SD)	Control Group Mean (SD)	<i>p</i>
Anxiety concerning giving birth to an infant with anomalies	Before the intervention	16.30 (6.47)	12.13 (6/31)	$p=0.032$ $T=2.213$
	After the intervention	8.56 (4.65)	13.34 (6/47)	$p<0.006$ $T= 2.876$

To eliminate the confounding effect of the significant difference between the two groups before the intervention, the analysis of covariance (ANCOVA) test was used. The assumptions of the ANCOVA test were examined. The equality of variances was confirmed by Levene's Test ($p=0.934$). Based on the ANCOVA, by controlling for the pretest, a significant difference was observed between the posttest scores of anxieties concerning

giving birth to an infant with anomalies in pregnant mothers in the two groups ($p<0.001$). According to the results, the mean anxiety scores in the post-test in the intervention group showed a significant decrease compared to the control group. Therefore, counseling reduced anxiety in the intervention group compared to the control group. The effect size or difference was 0.35. (Table 4).

Table 4. Comparison of Anxieties Concerning Giving Birth to an Infant with Anomalies in Experimental and Control Groups After Intervention

Variable	Type III Sum of Squares	df	Mean Square	F	<i>p</i>	Mean Square
Posttest anxiety	475.485	1	475.485	22.142	<0.001	.340
Group	496.693	1	496.693	23.130	<0.001	.350

Discussion

The current research was designed and conducted to determine the effect of counseling with a positive approach on anxiety about giving birth to infants with Anomalies in pregnant mothers over 35 years of age.

The experimental group received eight positive counseling sessions. The study results indicated a significant improvement in the mean score of anxiety concerning giving birth to an infant with anomalies in the experimental group after the intervention. Additionally, the results in the control group demonstrated an increase in anxiety concerning

giving birth to an infant with anomalies among the participants. A statistically significant difference was also observed in the anxiety scores before and after the intervention. The significant difference between the two groups before the intervention, based on the mean scores, denoted higher anxiety in the experimental group. However, after the intervention, the significant difference was due to higher anxiety in the control group, suggesting the effectiveness of the counseling. The reason for the increased fear and anxiety in the control group is attributed to not receiving counseling and the proximity of the childbirth date.

In a study, Abbasi et al. (2020) investigated the effectiveness of a positive psychology approach on nausea and vomiting of pregnancy and found that positive psychology improved the tolerance of mothers experiencing nausea and vomiting of pregnancy. They recommended the use of this approach in prenatal care to promote the health of pregnant women [34].

The findings of Emadian et al.'s (2019) study entitled "The Effectiveness of Positive Thinking Training on Fear of Childbirth and Childbirth Self-Efficacy in Pregnant Women in Sari" revealed that positive psychotherapy can reduce unnecessary cesarean sections by alleviating fear of childbirth and enhancing childbirth self-efficacy. These findings align with the present study. By incorporating positive psychological counseling into routine prenatal care, the adverse effects of fear on pregnancy can be prevented [35].

Azadian et al. (2018) conducted a study entitled "Comparison of the Effect of Two Methods of Lecture and Cognitive-Behavioral Therapy on the Anxiety Level of High-Risk Pregnant Women in Sanandaj," the results of which are consistent with the present study. In explaining this finding, it should be noted that both counseling using a cognitive-behavioral approach and the lecture method were effective in reducing pregnancy anxiety, while counseling with a cognitive-behavioral approach exhibited more effectiveness in reducing anxiety compared to the lecture method. Overall, both methods empower pregnant mothers to better manage their anxiety and avoid engaging in behaviors or thoughts that may exacerbate their condition [36]. Similarly, Matvienko et al. (2017) conducted a study entitled "Investigating the Impact of Positive Psychology Interventions on Prenatal Stress and Well-being," the results of which were in line with the findings of the current research. The results of their study revealed that gratitude-based awareness and intervention could be effective in managing pregnancy-related stress [29]. Consistent with the present research, Rashid-Almasi et al. (2018) also conducted a study entitled "Investigating the Impact of Positive Psychotherapy on Depression, Stress, and Happiness of Infertile Women in

Dezful," suggesting the effectiveness of positive psychotherapy in managing stress and depression of infertile women and enhance their happiness. Optimistic individuals cope with problems in the best possible way and strive to accept reality [31]. In this context, Andaroon et al. (2015-2016) conducted a study to explore the effect of individual counseling by midwives on pregnancy anxiety in primiparous women in Mashhad, the findings of which are consistent with the present study. According to the results of their study, individual counseling by midwives during pregnancy alleviates prenatal anxiety among primiparous women. Counseling provides pregnant mothers with appropriate information to make informed decisions. Through the support and encouragement gained from counseling, the cause of anxiety is identified, and appropriate strategies are provided to prevent adverse outcomes. Moreover, holding counseling sessions enhances pregnant mothers' mental health [37]. Bos et al. (2013) also conducted a study entitled "Investigating the Effectiveness of Positive Emotions on Postpartum Depression," the results of which are in line with the present study. According to their results, by improving positive emotions, the incidence of postpartum depression can be mitigated, and positive thinking is beneficial in improving various psychological dimensions. They also suggested that mothers be taught to focus on positive attributes, psychological assets, and strengths, rather than focusing on illnesses and negative aspects, and by strengthening these, strive for their own growth and flourishing [38].

In line with the present study results, a study was conducted by Corno et al. (2018) to evaluate the effect of an online positive psychology intervention on women's well-being indicators during pregnancy. In explaining the findings, it can be stated that positive psychology interventions can maximize well-being by increasing positive emotions. Furthermore, intervention in support of psychological well-being and mitigating depressive symptoms in pregnant women has potential positive effects. Because pregnancy-related anxiety decreased in four participants but slightly increased in two participants, completely clear results were not

obtained, and due to the small sample size, further complementary studies are needed in this regard [39].

One of the limitations of this study was the reliance on self-report questionnaires. To mitigate this issue, participants were provided with detailed instructions regarding the importance of accurate completion and were asked to exercise due diligence when filling them out.

Another foreseeable limitation in this study was the potential lack of adequate interaction with participants due to the virtual format of the counseling sessions. To address this limitation, participants were provided with a contact number to call if they encountered any difficulties, allowing for further clarification of the counseling content.

It is recommended that the effect of positive psychological counseling on anxiety concerning giving birth to an infant with anomalies be investigated in other high-risk pregnant mother populations.

A comparison between individual and group positive psychological counseling approaches is recommended among pregnant women aged 35 and older. Additionally, further research should compare the effects of various psychological interventions on anxiety concerning giving birth to an infant with anomalies in pregnant women aged 35 and older is also recommended.

Conclusion

The results of the present study showed that counseling with a positive approach can be used as an effective method in reducing anxiety in pregnant mothers over 35 years of age, along with other counseling methods. By reducing the anxiety of this group of mothers, one of the psychological barriers to childbearing and population growth will be removed and it will help implement the law to protect the family and the youth of the population.

Ethical Consideration

The present study was approved by the Human Experimentation Ethics Committee of Zanjan University of Medical Sciences (IR.ZUMS.REC.1400.110) and registered on the

Iranian Registry of Clinical Trials (IRCT20160521027994N7) on 18/07/2021. Additionally, all methods were carried out according to relevant guidelines and regulations, and participants provided online consent to participate in the study.

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Conflict of interest

No conflict of interest.

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Authors' contributions

Jalilvand H. contributed to study conception and design, data collection, analysis and interpretation, and manuscript preparation, reading, revision and approval. Mokhtari Zanjani M. and Emamgholi Khooshehchin T. participated in study design, data analysis, and manuscript preparation, reading, revision and approval. All authors read and approved the final manuscript and agreed to be personally accountable for their contributions.

Artificial Intelligence Utilization

The authors did not use any Artificial Intelligence (AI) tools or technologies during the preparation of this manuscript.

Data Availability Statement

The datasets generated and/or analyzed during the current study are not publicly available due to privacy restrictions but are available from the corresponding author upon reasonable request.

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