



Research Paper

Comparing the Effectiveness of Art Therapy Based on Painting With Childbirth Preparation Classes on Psychological Distress of Pregnant Women



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ABSTRACT

Background: Psychological distress is very common during pregnancy and threatens the health of both the mother and fetus. Non-pharmacological treatments are of priority to reduce the psychological distress of pregnant women.

Objectives: This study aimed to determine and compare the effectiveness of art therapy based on painting and childbirth preparation classes on the psychological distress of pregnant women in the third trimester of pregnancy.

Materials & Methods: The present study was a quasi-experimental pretest-posttest design with a control group. The statistical population consisted of all pregnant women in the third trimester who were referred to health and treatment centers of Kerman in 2020, among whom 51 were selected by convenience sampling method and randomly assigned into three groups of art therapy based on painting, childbirth preparation classes, and a control group (n=17 in each group). Data were collected using Kessler psychological distress scale in two periods before and after the interventions. Art therapy based on a painting was performed in 12 sessions of 90 minutes weekly for the first experimental group for a month and a half. Childbirth preparation classes were performed in eight 90-minute weekly sessions for the second experimental group for two months. The control group received no intervention. Data were analyzed using univariate analysis of covariance and Bonferroni posthoc test.

Results: The mean ± Standard deviation of psychological distress in the art therapy based on the painting group decreased from 23.47±0.89 in the pre-test to 8±0.71 in the post-test (P<0.001). In the childbirth preparation class group, it decreased from 23±0.51 in the pre-test to 17.10±1.01 in the post-test (P<0.001). It showed that art therapy based on painting was found more effective in comparison with childbirth preparation classes (P<0.05). While there was no difference in the psychological distress of the control group in the pre-test and post-test.

Conclusion: Both interventions reduced the psychological distress of pregnant women in the third trimester. In comparison with the two interventions, art therapy based on painting was more effective in reducing psychological distress.

Keywords: Art therapy, Painting therapy, Childbirth preparation class, Psychological distress, Pregnancy

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1. Introduction

Pregnancy is a special period in the life of women. During this period, women experience meaningful physical, psychological, and social changes. These changes can lead to symptoms of psychological distress, including anxiety and depression, in pregnant women [1]. Psychological distress can be recognized by symptoms such as stress, constant worry and anxiety. Antenatal distress is defined as the emotional reactions of pregnant women toward childbirth, the role of parenting, and the health of the fetus [1]. They often experience specific stressors during pregnancy; such as appearance changes, fetal health, prenatal screening, unwanted pregnancy, and fear of childbirth [2, 3]. Extensive physiological and hormonal changes, including a sharp increase in estrogen and progesterone levels, may lead to psychological distress in pregnant women [4]. In previous studies, the prevalence of psychological distress during pregnancy was reported as 75% [5] and more than 80% of women experience at least one stressor during pregnancy [6]. Fathi et al. have reported that the level of anxiety and depression in pregnant women is three times higher than in other women [7] and one out of four pregnant women suffer from stress, anxiety, or depression. Also, the prevalence of depression, stress [8], and anxiety in the third trimester is higher than in the first and the second trimester [9]. Anxiety and depression are the most common psychological disorders during pregnancy, which have a high overlap [5]. Psychological distress during pregnancy, especially in the third trimester, threatens the health of the mother and the growth and health of the fetus [3]; it can lead to postpartum depression, high blood pressure, premature birth [1], cesarean section, behavioral disorders in childhood, poor cognitive development [10], low birth weight, fear of childbirth, preeclampsia [11], autism [12], stillbirth and physical defects such as the cleft palate and pyloric stenosis [13]. This issue shows the importance and necessity of paying attention to the mental health of women in this period; So reducing the psychological distress of pregnant women has an important role in the mental health of the mother, child, and family [11].

Studies have shown that pregnant women, mostly, prefer to use psychological approaches rather than pharmacological approaches [3]. One of the newest non-pharmacological interventions to reduce psychological distress is art therapy based on painting, and it can have a positive effect on the distress of pregnant women [14]. Art therapy is a type of psychotherapy in which art is used as

a means to express oneself and convey feelings, which makes it possible to externalize the problem through art, communicate with it, and master it. This process leads to the strengthening of positive feelings and emotions in a person. In other words, art therapy is the use of art materials to express and empower the patient through recognizing and solving their internal conflicts in the presence of a trained therapist. The most important and common art therapy tool is painting [15]. Art therapy based on painting, which is also called painting therapy, provides an opportunity for a person to visualize his inner world with the help of painting and to understand and solve his problems. Also, it makes possible the inner emotions that are difficult or impossible to express verbally and ultimately leads to treatment [16] and opportunities to freely express people's emotions, needs, and knowledge through colors, lines, and shapes [17]. In general, art therapy has a great effect on inner exploration, access to the unconscious world, overcoming problems, personal growth, and reducing clinical symptoms [18], and in pregnant women, it reduces anxiety, improves coping strategies, and emotional externalization, and improves overall health [14].

Another non-drug intervention that can be used to improve the sleep quality of pregnant women is childbirth preparation classes. These classes are held to educate pregnant women regarding the changes of the pregnancy period, the care of this period, childbirth, postpartum care, and how to breastfeed the baby using training such as relaxation techniques, abdominal breathing, nutrition, and exercise in this course [19]. By participating in these classes, pregnant women's false beliefs about pregnancy and childbirth, which makes them anxious, turn into positive mental concepts [20]. Also, meeting other people who have the same conditions as them, may reduce anxiety and depression [21]. These classes lead to an increase in women's awareness of their needs and a better understanding of the childbirth process [22]. But if women are given conflicting or variant information, it may not be helpful and lead to negative birth experiences. Also, providing women with too much new information in a short period of period and engaging them in discussions or activities can reduce the benefits of childbirth preparation classes [23].

Research shows the effectiveness of various types of art therapy, including painting therapy, on a wide range of psychological problems such as psychological distress in different groups. For example, in the research of Sezen and Unsalver [24], the role of painting therapy in reducing anxiety and depression in pregnant women was investigated, and the results indicated the meaningful effects of this therapeutic method in reducing the distress

of these women in the last trimester of pregnancy. In Sherfield's research [14], the effect of art therapy based on a painting on stress, anxiety, and depression in pregnant women was confirmed. Also, studies have shown the positive effects of childbirth preparation classes on concerns caused by pregnancy, such as depression and anxiety [21, 23, 25-27]; Including Gluck et al. 'S research [26], which showed that childbirth preparation classes have led to a reduction in negative pregnancy outcomes, including anxiety. The necessity of the current research is that, considering the physical, psychological, and social consequences of pregnancy, it is very important to carry out effective therapeutic and educational interventions to reduce these problems; Also, reducing the psychological distress of pregnant women can improve the health of the mother, fetus, and society. To the knowledge of the authors, there was no research to compare the effectiveness of these two interventions. Therefore, the present study was conducted to determine and compare the effectiveness of art therapy based on painting and childbirth preparation classes on the psychological distress of pregnant women in the third trimester of pregnancy in the city of Kerman, and it is the first research to determine and compare the effectiveness of art therapy based on painting with childbirth preparation classes and a control group.

2. Methods and Materials

Study type and population

The current research was quasi-experimental with a pretest-posttest control group design. The statistical population of this study was made up of all pregnant women in the third trimester of pregnancy who visited the 22 Bahman Health and Treatment Center in Kerman city in 2018. The inclusion criteria were age range from 18 to 40 years, being at third trimester of pregnancy, first or second pregnancy experience, holding at least an elementary education level, getting a total score of 20 or more on the Kessler psychological distress scale, non-participation in other intervention programs, no use of any type of medicine except for vitamin supplements, and having interest to take part in the study. The exclusion criteria were: the participant's unwillingness to continue cooperating in the research, irregular participation in the meetings, any problem or disability that makes it difficult for the participant to attend, changes in the subject's mental condition due to an unfortunate event such as the death of a loved one, becoming pregnant to high-risk pregnancy and premature birth. Research sample consisted of 51 pregnant women that were non-randomly divided into three groups, including two experimental

groups and one control group (17 people in each group). An informed consent was taken from all study participants. In the current research, the principles related to ethical considerations, such as obtaining consent from the participants, confidentiality of their identity, and the right to withdraw from the research, were observed.

Intervention protocol

At start of treatment sessions, the pretest was performed for all three groups. Art therapy is based on a painting during 12 sessions of 90 minutes (two sessions per week), in a group for a month and a half based on the protocol designed by the founder and director of the Iran Art Therapy Study Center exclusively for this research. To check the validity of this package, the package along with a checklist was given to 8 university professors in the field of psychology and art therapy, as well as 8 midwifery experts. The correlation coefficient (0.81) between their opinions confirmed the content validity of the educational package through the checklist. Childbirth preparation classes were conducted in 8, 90-minute sessions (one session per week) for two months for the second experimental group. The control group did not receive any intervention. The posttest was performed 48 hours after the last treatment session for all three groups. The description of treatment sessions is mentioned in Tables 1 and 2. After the posttest, 4 sessions of effective intervention were implemented for the control group. Then the consent form was obtained from them and the questionnaires were completed by the people.

Study instrument

Psychological distress was measured using Kessler's Psychological Distress Scale developed by Kessler et al in 2002. This scale has been developed in two forms of 10 questions and 6 questions to identify the level of anxiety, stress, and depression experienced by a person in the past month in the general population [28, 29]. In the present study, the 10-question form of this scale (K-10) was used. The scoring method of the questionnaire is based on a five-point Likert scale. The lowest score is zero and the highest score is 40. Obtaining a score of 20 and above indicates the presence of psychological distress in a person. The creators reported the estimation of the internal consistency of the 10-question form using Cronbach's $\alpha=0.93$ [29]. In another research, the reliability of the 10-question formation in identifying mood and anxiety disorders based on DSM-IV among pregnant indicated the appropriateness of this scale to identify depression and anxiety in pregnant women [28]. Also, Cronbach's α for the 10-question form of this scale in the study of Hajebi et al. was 0.92 [30]. In the

Table 1. Summary of art therapy sessions based on a painting

Meetings	Content
1 st	Introducing drawing tools and how to use them, introducing yourself with color, and practicing "connecting with the embryo" to attract the opinion of the group members and bond with the embryo.
2 nd	"Spot and butterfly" exercise and "My body" exercise to know and understand yourself and create a positive attitude towards yourself.
3 rd	Practice painting with the opposite hand and practice "expressing fears and worries" to express negative emotions and overcome them.
4 th	"From Chaos to Order" exercise and "Family Tree" exercise to empty the soul and express family relationships and the status of members.
5 th	Listening to a soothing voice and your breaths, thinking about the fetus in your womb, and practicing "dreaming" to calm yourself down.
6 th	The performance of different feelings and emotions in the form of pantomime and practicing "emotions" to recognize different feelings and emotions
7 th	"Line Extension" and "Self Image" exercises for group dynamics and interaction, getting to know and communicating with the unknowns of the pregnancy period and the new role of parenting, creating a positive attitude towards oneself.
8 th	Making a creative shape with colored papers and painting and practicing the "motherly role" to understand the new role of parenting and communication with the child.
9 th and 10 th	Talking about your experiences from pre-meetings and practicing the "pregnancy book" to understand the feelings and changes of the pregnancy period and offer solutions, creating a positive attitude towards the pregnancy process.
1 th	Drawing wishes and practicing a "circle of support" to feel positive and hopeful
12 th	Talking about your general feelings and experiences from the art therapy period, group painting to express the main and important feelings of the individual

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current study, the reliability of this scale was checked using Cronbach's alpha test and its value was 0.89.

Statistical analysis

Data described using mean, standard deviation, frequency and percent. Paired t-test and analysis of variance was used to assess within-group and between-group

comparison, respectively. In addition, the chi-square test was used to compare the groups in terms of demographic variables. The adjusted post-test score among the three groups were compared using univariate analysis of covariance. To explore the specific difference between the three groups, post hoc comparison using Bonferroni's test was performed. All analysis steps were done with SPSS software, version 26.

Table 2. Summary of childbirth preparation class sessions

Meetings	Content
1 st	Introducing and stating the goals and rules of meetings, teaching self-awareness and problem-solving skills
2 nd	Getting to know the physiological and psychological changes of the mother, the common problems of pregnancy, and the methods to solve them
3 rd	Nutrition and sleep during pregnancy, doing sports exercises, massage training
4 th	Getting to know the stages of fetal development, danger signs in pregnancy, practicing abdominal breathing
5 th	Types of childbirth methods and explanations of the advantages and disadvantages of each, nerve and muscle exercises, and relaxation.
6 th	Baby care, baby danger signs and breastfeeding education, teaching effective communication skills and empathy
7 th	Acquaintance with the space of the delivery room, teaching the stages of childbirth, childbirth pain, and methods of coping with it
8 th	Different positions and correct breathing during childbirth

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3. Results

Figure 1 illustrate flow diagram of participation in the study. Detailed information about the demographic status of the participants in the study according to the intervention and control groups is presented in Table 3. The results of the chi-square test showed that there was no significant difference between the three groups in terms of demographic variables of age, education level, number of pregnancies, history of abortion, income status, and gestational age ($P>0.05$).

Descriptive indicators of psychological distress are reported in Table 4. The results showed that there was no significant difference in the pre-test stage, among the three groups. But in the post-test stage, an obvious difference was observed between the three groups. Within-group comparison showed that there was significant reduction of post-test score in Art therapy based on a painting group and Birth preparation class group.

To analyze the changes in the psychological distress variable in the post-test stages, univariate analysis of covariance was used followed by checking the assumptions. Normality assumption was met based on Shapiro-Wilk tests. The assumption of homogeneity of variances was met according to the Levene's test ($F=27.49$, $P=0.16$).

Also, the homogeneity test of the slope of the regression line was investigated through the interaction of pre-test and post-test variables of psychological distress. The interaction of pre-tests score with the independent variable was not meaningful and shows the homogeneity of the slope of the regression line. The results of the univariate analysis of covariance showed that there is a meaningful difference between the mean post-test scores of the psychological distress variable after controlling for the pre-test effect ($F_{2,27}=46.78$, $P=0.001$, $\eta^2=0.63$). The results of post hoc comparison showed that there was significant difference among all three groups. Art therapy group based on painting had the lowest mean post-test score (8.75) compared to the childbirth preparation (16.91) and control group (23.98) (Table 5).

4. Discussion

The results showed that art therapy based on the painting led to a drastic reduction of psychological distress of pregnant women in the third trimester of pregnancy. This finding is in line with the results of Sherfield's research [14], which showed that art therapy based on painting was effective on stress, anxiety, and depression in pregnant women. It is also consistent with the results of the research of Sezen and Unsalver [24] who showed that painting therapy was effective in reducing anxiety

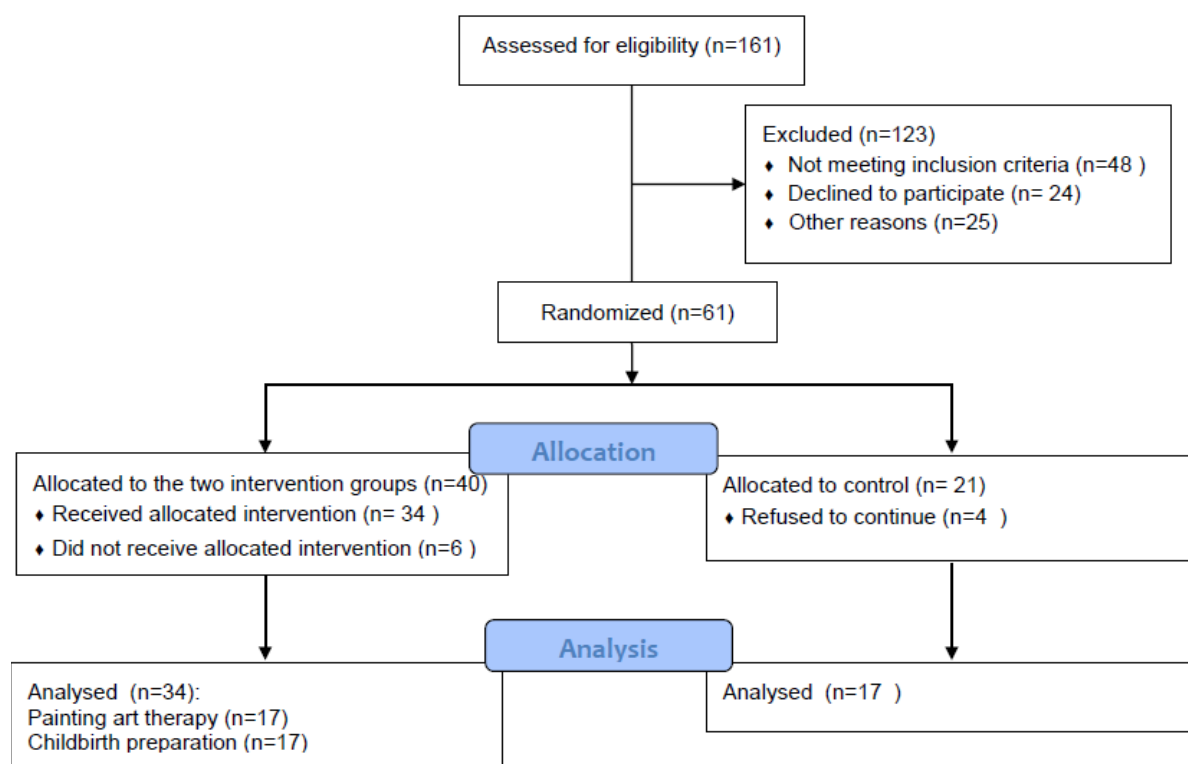


Figure 1. Study flow chart



Table 3. Demographic information of study participants according to the intervention and control groups

Variables		Painting Therapy	Birth Preparation Classes	Control Group	X ²	P
Age group, y	Under 20	2 (11.77)	2 (11.77)	1 (5.88)	2.15	0.543
	20-25	10 (58.82)	10 (58.82)	9(52.94)		
	26-30	3 (17.64)	4 (23.53)	5 (29.41)		
	35-31	2 (11.77)	1 (5.88)	2 (11.77)		
Education	Under-diploma	1 (5.88)	1 (5.88)	1 (5.88)	3.26	0.513
	diploma	8 (47.06)	9(52.94)	8 (47.06)		
	Associate Degree	1 (5.88)	2 (11.77)	2 (11.77)		
	Bachelor’s degree	6 (35.30)	4 (23.53)	5(29.41)		
	Master’s degree	1 (5.88)	1 (5.88)	1 (5.88)		
Income level	Low	4 (23/53)	2 (11.77)	3 (17.64)	0.81	0.375
	Medium	13 (76.47)	15(88.23)	14 (82.36)		
Parity	First	13 (76.47)	12 (70.59)	3 (17.64)	2.15	0.547
	Second	4 (23.53)	5 (29.41)	4 (23.53)		
History of abortion	Yes	2 (11.77)	4 (23.53)	2 (11.77)	0.81	0.376
	no	15(88.23)	3 (17.64)	15(88.23)		
Gestational age (in weeks)	29	4 (23.53)	5(29.41)	5(29.41)	0.12	0.632
	31	5(29.41)	5(29.41)	5(29.41)		
	33	4 (23.53)	2 (11.77)	5(29.41)		
	35	4 (23.53)	5(29.41)	2 (11.77)		

Values in the parenthesis indicate percentage



Table 4. Descriptive statistics of psychological distress in pre-test and post-test by group

Variables	Group	Mean±SD		Within-Group P
		Pre-Test	Post-Test	
Psychological distress	Art therapy based on a painting	23.47±0.89	8±0.71	0.069
	Birth preparation class	23±0.51	17.10±1. 01	0.001
	Control	23.30±0.77	23.55±1.01	0.002
Between-group P		0.001	0.001	-



Table 5. Post hoc comparison of post-test score among the study groups

Group	Adjusted Post-Test Mean Score	Mean Difference	95% Confidence Interval		P	
			Lower	Upper		
Art therapy based on a painting	Birth preparation class	16.91	-8.16	-12.25	-4.07	0.001
	Control	23.98	15.23-	19.25-	-11.21	0.001
Birth preparation class	Art therapy based on a painting	8.75	8.16	4.07	12.25	0.001
	Control	23.98	-7.06	-10.92	- 3.20	0.001
Control	Art therapy based on a painting	8.75	15.23	11.21	19.25	0.001
	Birth preparation class	19.91	7.06	3.20	10.92	0.001



and depression in pregnant women. In explaining this finding, it can be said that art and specifically painting uses works of art as a reflection of people's personalities, growth, abilities, interests, concerns, and conflicts [31]. Through art therapy and painting, instead of talking about their stress and worries, people can solve them by painting and overcoming their stress, anxiety, fear, anger, and other negative emotions [32]. Painting therapy allows people to transfer their concerns, failures, past events, and inner interests to the present, and through communication with them, they can overcome them [33]. Experts think that art therapy, especially painting, leads to favorable and positive changes in the individual through self-discovery, the discovery of the surrounding world, and establishing a relationship between the two [32]. In the art therapy group, identification with the group coach and other members and emotional and emotional evacuation is seen more than in other therapies. Painting, like sleep and dreams, frees a person from prohibitions, talks about his thoughts and concerns in an unconscious state, and finds new and useful solutions to deal with his problems [15]. Also, artistic work provides a kind of fun and enjoyable game for adults, which leads to health [32].

Another finding showed that childbirth preparation classes were effective in reducing psychological distress. This finding is in line with the research results of Hasanzadeh et al. [23] who showed that childbirth preparation classes affected postpartum depression. It is also consistent with the results of Gluck et al.'s research [26], which showed that childbirth preparation classes were effective in reducing the negative consequences of pregnancy, including anxiety.

In explaining this finding, it can be said that childbirth preparation classes are held to educate pregnant women about the changes of the pregnancy period, care during this period, childbirth, postpartum care, and how to breastfeed the baby, including techniques such as relaxation techniques, abdominal breathing, Massage, and special pregnancy exercises are used [19]. These techniques can reduce psychological distress, including the anxiety of pregnant women. Also, by participating in these classes, women's awareness of their needs and their understanding of the unknowns of pregnancy and the birth process increased [22], and the false information and negative beliefs of pregnant women about pregnancy and childbirth have caused them anxiety, to the concepts become positive mentally [20]. In addition, they meet other people who have the same conditions as them, and this reduces anxiety and depression [21]. Also, the results showed that art therapy based on the

painting had a greater effect on reducing the psychological distress of pregnant women in the third trimester of pregnancy compared to childbirth preparation classes.

No research was found regarding the comparison of the effectiveness of the two methods, but in explaining the difference between the two methods, the characteristics and strategies of both methods can be mentioned. In general, by participating in art therapy sessions based on painting and childbirth preparation classes, with the help of the therapist, pregnant women were able to get to know the unknowns of pregnancy, replace their negative beliefs with positive beliefs, and find different solutions to overcome their problems, which Finally, it reduced their psychological distress. Art therapy based on painting was more effective and this could be because, in the group art therapy method, identification with the therapist and group members and emotional discharge occurs more than in other treatments [34]. Also, by actively participating in painting as artwork, adults can have fun and enjoyable games, which can lead to health in the individual [32]. In childbirth preparation classes, the participants had a passive presence that only received the information. In addition, providing women with too much new information in a short period can reduce the benefits of childbirth preparation classes [19]. This research was associated with limitations; including small sample size, the use of non-probability sampling of study population that limit the generalizability of the results, the use of self-report tools to collect data that may induce information bias, and the lack of long-term follow-up to evaluate persistence of the results due to the involvement of pregnant women in the delivery process and aftercare.

5. Conclusion

The study showed that both art therapy interventions based on painting and childbirth preparation classes reduced the psychological distress of pregnant women in the third trimester of pregnancy. Compared to the two interventions, art therapy based on painting was more effective in reducing psychological distress.

Ethical Considerations

Compliance with ethical guidelines

This study was approved with ethics (Code: E.A.98.09.10.01).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declare that there is no conflict of interest regarding this article.

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