

The Effect of Expressive Writing on Fear of Childbirth Among Nulliparous Pregnant Women: A Randomized Controlled Trial

Maryam Khalili, Tahmineh Dadkhahtehrani¹, Fatemeh Torabi¹, Zahra Heidari²

Student Research Committee, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, ¹Reproductive Sciences and Sexual Health Center, Department of Midwifery and Reproductive Health, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, ²Department of Epidemiology and Biostatistics, Faculty of Health, Isfahan University of Medical Sciences, Isfahan, Iran

ORCID:

Maryam Khalili:
0000-0003-4954-4570

Tahmineh Dadkhahtehrani:
0000-0001-6105-4465

Fatemeh Torabi:
0000-0002-5960-6643

Zahra Heidari:
0000-0001-7825-2388

ABSTRACT

Background: Fear of childbirth (FOC) is a common and complicated problem among nulliparous pregnant women. **Objectives:** The aim of this study was to compare the effects of expressive writing and neutral writing on FOC in nulliparous pregnant women. **Methods:** A randomized controlled trial was conducted on 90 nulliparous pregnant women referred to selected comprehensive health centers in Isfahan for prenatal care from May 1 to September 30, 2021. The participants were recruited consecutively and randomly allocated to two groups to perform either expressive writing or neutral writing at home for 20 min daily for 7 days. Before and after the intervention, FOC was measured using the Wijma Delivery Expectancy/Experience Questionnaire. Paired *t*-test, independent *t*-test, and Chi-square were used for statistical analysis. **Results:** The mean age of pregnant women was 29.93 ± 5.20 and 29.18 ± 5.65 years in the usual and expressive writing groups, respectively. The mean FOC scores of the women in the neutral writing and expressive writing groups were 36.31 ± 7.35 and 35.96 ± 6.80 , respectively, at baseline ($P = 0.81$) and changed to 34.98 ± 8.18 and 31.58 ± 7.99 , respectively, at the end of the study ($P < 0.04$). The paired *t*-test showed that the mean FOC score of the expressive writing group decreased significantly at the end of the study ($P < 0.001$), whereas it did not change significantly in the neutral writing group ($P = 0.11$). **Conclusion:** Expressive writing can reduce FOC in nulliparous pregnant women and can be used as an effective, low-cost, simple, and accessible method.

KEYWORDS: Childbirth, Expressive writing, Fear, Iran, Nulliparous, Tokophobia

INTRODUCTION

Although childbirth is a pleasant and exciting experience for a woman, the fear of labor pain makes some pregnant women anxious. Fear of labor pain may result in tokophobia or fear of childbirth (FOC). This fear is especially greater in nulliparous women, and negatively affects the quality of their daily life.^[1] FOC can lead to nightmares, physical discomfort, daily stress, fatigue, lack of sleep, and difficulty concentrating at work or in family activities. FOC can also increase

pain levels, prolong labor, lead to more maternal and fetal complications, lead to postpartum depression and

Address for correspondence: Tahmineh Dadkhahtehrani, Reproductive Sciences and Sexual Health Center, Department of Midwifery and Reproductive Health, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Hezar-Jarib Street, Isfahan, Iran.
E-mail: tdtahmineh1400@gmail.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

Submitted: 13-Mar-2022 **Revised:** 24-Aug-2022 **Accepted:** 14-Sep-2022
Published: 18-Nov-2022

How to cite this article: Khalili M, Dadkhahtehrani T, Torabi F, Heidari Z. The effect of expressive writing on fear of childbirth among nulliparous pregnant women: A randomized controlled trial. *Nurs Midwifery Stud* 2022;11:177-82.

Access this article online

Quick Response Code:



Website:
www.nmsjournal.com

DOI:
10.4103/nms.nms_20_22

anxiety, and increase requests for cesarean delivery.^[2] Extreme FOC causes some women to avoid pregnancy despite their strong interest in having a child.^[3]

The prevalence of FOC varies across societies.^[4] A systematic review of 33 studies from 18 countries estimated the prevalence of FOC at 14%.^[5] In Iran, the prevalence of moderate and severe FOC among nulliparous women is 19.6% and 6.1%, respectively.^[6]

Various psychological approaches have been used in the treatment of FOC. A study from Iran has reported that behavioral group therapy could effectively reduce FOC and anxiety in pregnant women.^[7] However, a study investigated the effects of counseling on FOC and showed that counseling had little effect on FOC despite women's satisfaction with this supportive approach.^[8] Another study also showed that attending childbirth classes prepares primiparous women for their new circumstances, influences the way they experience birth, reduces their psychological discomfort, and ultimately reduces their FOC.^[9] In a study of the effects of Internet-delivered Cognitive Behavior Therapy (iCBT) on FOC, although iCBT was effective in reducing FOC, most women preferred face-to-face meetings to iCBT.^[10] A study also examined the effectiveness of two sessions of self-hypnosis and reported that the method decreased both FOC and the duration of labor in nulliparous pregnant women.^[6]

Expressive writing is a self-help method in which people write deeply and meaningfully about a traumatic or disturbing event. Experienced psychologists describe writing as a means of clearing the mind of unpleasant experiences and reducing bitter memories. This method may also help patients who are unwilling or unable to talk to a psychologist or counselor.^[11,12] A study showed the effectiveness of writing on mothers' satisfaction with care in the neonatal intensive care unit.^[12] Expressive writing has also been reported to reduce depression in mothers experiencing preterm delivery.^[13] This technique has also been effective in improving lung function, quality of life, medication adherence, and symptom severity in patients with asthma,^[14] and in reducing symptoms of posttraumatic stress disorder (PTSD) in survivors of breast cancer.^[13-15] A study also showed the positive effects of expressive writing in postpartum women.^[16] Women with FOC need serious support and should be provided with opportunities to express their feelings, experiences, and expectations.^[17] The mental health of these women is of great importance to midwives.^[4,12] While the country's population policy encourages the increase in birth rates and natural childbirth, it is crucial to find simple, low-cost, and effective strategies to reduce FOC. Although some

studies have shown the positive effects of expressive writing in mothers with postpartum depression,^[16] PTSD,^[15] or preterm childbirth,^[13] and no study has examined the effectiveness of this method in nulliparous pregnant women with FOC. Due to the prevalence of FOC and its side effects, the question is whether expressive writing can significantly improve FOC in nulliparous pregnant women?

Objectives

This study aimed to compare the effects of expressive writing and neutral writing on FOC in pregnant nulliparous women.

METHODS

Design and participants

This randomized controlled trial was conducted from May 1 to September 30, 2021, in 200 pregnant women attending two comprehensive health service centers affiliated with Isfahan University of Medical Sciences. The sample size was calculated using the formula for comparing two means and based on data reported by Rabiepoor *et al.*^[18] who conducted an expressive writing program for mothers with preterm infants. The mean Cohen's perceived stress scores in the control and intervention groups 3 months after the intervention were 23.04 ± 7.18 and 18.44 ± 8.06 , respectively. Accordingly, with a type I error of 0.05, a power of 0.80, a μ_1 of 23.04, a μ_2 of 18.44, an S_1 of 7.18, and S_2 of 8.06, the sample size was determined to be 44 per group. However, we recruited 45 participants in each group.

The inclusion criteria were as follows: gestational age of 36 weeks (252 days) or more based on ultrasound and maternally reported date of last menstrual period, ability to read and write in Persian, a score of 28 or more on the Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ), no indication for cesarean section (e.g. multiple births, placenta previa, history of uterine surgery, and skeletal abnormalities), no known psychological diseases, no pregnancy with assisted reproductive technology, no history of abortion, no history of infertility, and mother's willingness to participate in the study. Exclusion criteria were a decision to withdraw from the study, failure to perform expressive writing for more than 3 days, and facing adverse and stressful events during the study (e.g. death of a loved one, hearing bad news, and hospitalization due to midwifery problems).

Before data collection, the researcher prepared a permuted block randomization schedule using an online number generator (i.e. <https://www.sealedenvelope.com>).

com/simple-randomiser/v1/lists/) and the supposed participants were randomly allocated into 23 blocks of 4, to be assigned to a control or an intervention group, 45 in each. Then, two health service centers were randomly selected from all health service centers in Isfahan city.

Every morning, before leaving home, the researcher rolled a dice to determine which health center to go. In the case of even numbers, the researcher went to the Amir Hamzeh Center; if the numbers were odd, she went to the Ibn-E-Sina Center. She introduced herself to the pregnant mothers, explained the objectives of the study, assessed their FOC using the W-DEQ, and if they met all inclusion criteria, invited them to participate in the study. If they agreed, they were allocated to either the expressive writing group or the neutral writing group according to the blocks structure. Out of 200 nulliparous pregnant women, 90 met the inclusion criteria and entered the study [Figure 1].

Interventions

Participants in the expressive writing group were instructed to write down their deepest feelings, concerns, and thoughts about childbirth for 20 min a day for 7 days. Participants were asked to discover and write down their deepest feelings and thoughts, mention the details, and use plain sentences with the same words that come to their minds. They were asked to do not worry about the correctness of writing or spelling and being polite or logical. In a preparatory session, participants were asked to write about a disturbing topic (as an example),

and the researcher corrected their way of doing the task, taught them to write more expressively, corrected their problems, and ensured that they had learned the writing method. Participants in the neutral writing group were asked to write for 20 min every day for 7 days about their usual daily events (such as cleaning and cooking) that do not involve their emotions and feelings. During the 7 days of the intervention, all participants were called daily to remind them to write. All participants were asked to put all their notes on a cover. At the end of the 7 days, the W-DEQ was completed again at the health center or at the participant's front door.

On the 7th day, the researcher counted the writings of each participant, gave them back their writings, and asked them to destroy their writings.

Data collection instruments

Data were collected using a two-part questionnaire. The first part included personal characteristics such as mother's age, mother and spouse's occupation, mother and spouse's education level, economic status, and physical activity. There were also two questions on the participants' gestational age and their history of attending childbirth preparation classes. The second part of the questionnaire is the 16-item W-DEQ. All items are scored on a four-point Likert scale from 1 (low fear) to 4 (extreme fear). The minimum and maximum scores are 16 and 64, respectively. Scores 16–27, 28–39, 40–51, and 52–64 are categorized as low, moderate, severe, and extreme FOC, respectively. The

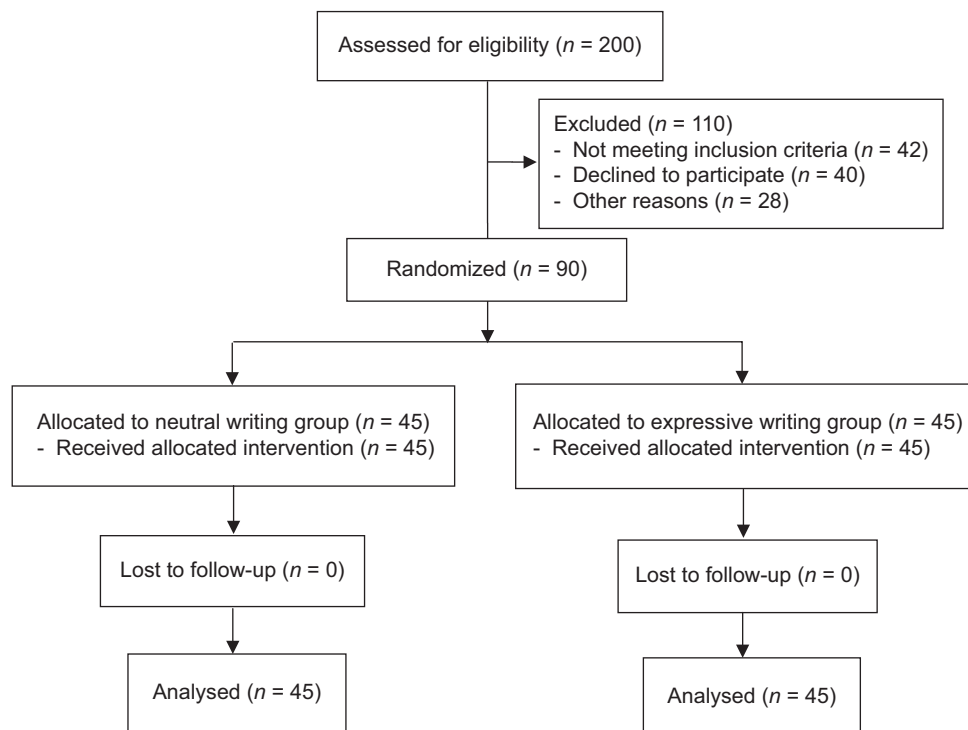


Figure 1: The study of flow diagram

reliability and validity of the W-DEQ have been confirmed in earlier studies.^[19,20] In Iran, the validity and reliability of the W-DEQ were examined by Khorsandi on 100 pregnant women and its Cronbach's alpha was reported at 0.84.^[21] The W-DEQ was completed by our participants in two phases before and after the intervention.

Data analysis

We used the SPSS software version. 16 to analyze the data (IBM, Armonk, NY, United States of America). Descriptive statistics such as frequency, percentage, mean, and standard deviation were calculated to describe the participants' characteristics. The Chi-square test was used to compare the two groups in terms of their characteristics. The independent samples *t*-test and paired *t*-test were used to compare the mean FOC between and within the two study groups. The significance level was considered <0.05 in all tests.

Ethical consideration

The study was approved by the Ethics Committee of Isfahan University of Medical Sciences (code: IR.MUI.NUREMA.REC.1400.011). The study protocol was also registered in the Iranian Registry of Clinical

Trials (IRCT20091001002531N4). We followed the ethical standard set out in the Helsinki Declaration (1964) and its subsequent amendments. All participants signed a written informed consent at baseline, ensured the data confidentiality, and were free to leave the study. A gift was given to each participant at the end of the study.

RESULTS

The mean age of pregnant women was 29.93 ± 5.20 and 29.18 ± 5.65 years in the neutral and expressive writing groups, respectively. The mean gestational age was 265.31 ± 9.16 and 267.64 ± 9.10 days in the neutral and expressive writing groups, respectively. Two groups were homogenous in their demographic and pregnancy-related characteristics [Table 1].

The independent samples *t*-test showed no significant difference between the mean FOC scores of the neutral and expressive writing groups at baseline ($P = 0.81$). However, the two groups were significantly different at the end of the study ($P = 0.04$). The paired *t*-test showed that the mean FOC score of the expressive writing group decreased significantly at the end of the

Table 1: Comparison of the frequency distribution of demographic and reproductive characteristics between neutral writing and expressive writing groups (n=45)

Variable	Group		P (χ^2)
	Neutral writing, n (%)	Expressive writing, n (%)	
Mother's education			
Less than a high school diploma and high school diploma	15 (33.4)	18 (40.0)	0.44
Associate and Bachelor's degrees	22 (48.9)	23 (51.1)	
Masters and PhD	8 (17.8)	4 (8.9)	
Spouse's education			
Less than a high school diploma and high school diploma	20 (44.5)	28 (62.3)	0.24
Associate and Bachelor's degrees	22 (48.9)	15 (33.3)	
Masters and PhD	3 (6.7)	2 (4.4)	
Mother's job			
Housewife and student	38 (84.5)	39 (86.6)	0.76
Employee and self-employed	7 (15.5)	6 (13.3)	
Spouse's job			
Employee	16 (35.6)	12 (26.7)	0.59
Worker	8 (17.8)	11 (24.4)	
Self-employed	21 (46.7)	22 (48.9)	
Monthly income (million tomans)			
<5	5 (11.1)	5 (11.1)	0.62
5-10	22 (48.9)	25 (55.6)	
>10	18 (40.0)	15 (33.3)	
Physical activity			
Low	19 (42.2)	17 (37.8)	0.67
Average and high	26 (57.8)	28 (62.3)	
Participating in childbirth preparation courses			
Yes	10 (22.2)	13 (28.9)	0.44
No	35 (77.8)	31 (68.9)	

study ($P < 0.001$), whereas it did not change significantly in the neutral writing group ($P = 0.11$) [Table 2]. Among all participants, two mothers reported increased fear after expressive writing.

DISCUSSION

The present study showed that expressive writing could significantly reduce the mean score of FOC in nulliparous pregnant women. Although some studies implemented this method in mothers with preterm childbirth,^[13] or in those with postpartum depression,^[16] no published studies were found on the effect of expressive writing on FOC. Since unpleasant feelings such as fear, anxiety, depression, and stress are usually interrelated, we compare our results with some studies that have examined the effect of expressive writing on other affective disorders including anxiety, depression, and stress in pregnant women. A study showed that expressive writing is effective on depression, anxiety, and stress in nulliparous pregnant women and recommended that midwives can prescribe this simple, free, and effective method to improve mothers' mental health.^[22] Similarly, Montazeri *et al.* have reported that writing therapy can significantly reduce anxiety in pregnant women.^[23] In another study, Rabiepoor *et al.* reported the positive effect of expressive writing on the improvement of depression and stress in mothers whose premature infants were admitted to the neonatal intensive care unit. These researchers also suggested that expressive writing is a convenient and inexpensive method that provides an opportunity for mothers to express their feelings to reduce their postpartum stress and depression.^[18] In contrast, a study of the effectiveness of expressive writing on psychological distress during the COVID-19 pandemic showed that this technique increased people's stress. The researchers concluded that expressive writing during stressful events and unknown lethal diseases such as COVID-19 may be harmful to some people because it draws attention to the danger, increases awareness of the potential threat,

and exacerbates the possibility of negative outcomes.^[24] However, our findings together with some earlier studies show that expressive writing can alleviate a variety of mental disorders such as anxiety, depression, stress, fear, and FOC. Unpleasant feelings such as fear and anxiety are usually interrelated.^[25] Slade *et al.* reported that pregnant women usually experience a mixture of general anxiety, pregnancy-specific stress, and FOC.^[26] Perhaps expressive writing reduces pregnant women's FOC by lowering general anxiety, improving mindfulness, and creating mental engagement in writing. On the other hand, FOC cannot be compared with the fear and anxiety of COVID-19. Pregnancy and childbirth are natural, usually willed and desirable experiences for a woman, and their beginning and outcomes are clear. COVID-19, however, is a novel and deadly disease that has killed many people, and people have little reliable information about its characteristics and prognosis. Therefore, people suffer from anxiety caused by ambiguity in all aspects of COVID-19 (prevention, treatment, mode of transmission, relieving, and aggravating factors).

Despite the effectiveness of expressive writing, two of the mothers in this group experienced more fear after expressive writing. Perhaps the duration of the intervention was not enough for these mothers. Ahmadi-Tahoor Soltani *et al.* have also reported that expressive writing evokes mainly negative memories in the short term and can therefore have a negative effect on mood, however, its positive effects emerge when practiced over a longer time.^[27]

Expressive writing should be performed when one's emotions are in a state of arousal. Since the mothers did the writing at home, their psychological state while writing was not under the control of the researchers and this limitation may have affected the results of the study. Another limitation may be related to the personality of the participants because some people are not able to release and freely express their feelings due to their distrust or personality traits. Finally, the readers should notice that this study was not blinded.

CONCLUSIONS

The findings demonstrated the effectiveness of expressive writing on FOC in nulliparous pregnant women. Due to the important role of midwives and obstetricians in the psycho-emotional health of pregnant women, the use of expressive writing is recommended as an effective, free, easy, and accessible self-help method.

Acknowledgments

This article was derived from a master thesis of midwifery (project number 3991079), Isfahan University of Medical Sciences, Isfahan, Iran. The authors would

Table 2: Comparison of mean score of fear of childbirth before and after intervention between neutral writing and expressive writing groups (n=45)

Fear of childbirth	Group ^a		P ^b
	Neutral writing	Expressive writing	
Before intervention	36.31 ± 7.35	35.96 ± 6.80	0.81
After intervention	34.98 ± 8.18	31.58 ± 7.99	0.04
P ^c	0.11	<0.001	
Difference in FOC before and after the intervention	-1.33 ± 5.40	-4.38 ± 6.79	0.02

^aData presented as mean±SD, ^bIndependent *t*-test, ^cPaired *t*-test. FOC: Fear of childbirth, SD: Standard deviation

like to acknowledge the research deputy at Isfahan University of medical sciences for their support. We also are thankful of all patients who participated in this study.

Financial support and sponsorship

This article has been supported financially by Isfahan University of Medical Sciences.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Zengin H, Bafali IO, Caka SY, Tiryaki O, Cinar N. Childbirth and postpartum period fear and the related factors in pregnancy. *J Coll Physicians Surg Pak* 2020;30:144-8.
- Mehrabadi M, Masoudifar M, Parvizi A, Rakhshani MH, Mortazavi F. Effects of childbirth preparation classes program based on national guideline on fear of childbirth in pregnant women: A randomized clinical trial. *Iranian J Obstet Gynecol Infert* 2020;23:58-68.
- Yousefi Z, Ahmadi Z, Dehghani F, Gharlipour Z, Izadkhan FS. Relationship between fear of childbirth and personality type among pregnant women. *Qom Univ Med Sci J* 2019;13:44-52.
- Sharifzadeh M, Bolbol Haghighi N, Keramat A, Goli M, Motaghi Z. Effectiveness of midwifery counseling based on solution-focused approaches on fear of childbirth. *Koomesh* 2018;20:375-83.
- O'Connell MA, Leahy-Warren P, Kenny LC, Khashan AS. Pregnancy outcomes in women with severe fear of childbirth. *J Psychosom Res* 2019;120:105-9.
- Kamalimanesh B, Moradi M, Fathi M, Afiat M, Boroumand Rezazadeh M, Shakeri M T. Effect of self-hypnosis on the experience of delivery fear and duration of labor in primiparity: A randomized clinical trial. *J Birjand Univ Med Sci* 2021;28:23-11.
- Bouzari B, Fatahi A. Effect of behavioral group therapy on childbirth fear and anxiety in pregnant women. *Middle East J Disabil Stud* 2018;8:37.
- Larsson B, Karlström A, Rubertsson C, Hildingsson I. The effects of counseling on fear of childbirth. *Acta Obstet Gynecol Scand* 2015;94:629-36.
- Kacperczyk-Bartnik J, Bartnik P, Symonides A, Sroka-Ostrowska N, Dobrowolska-Redo A, Romejko-Wolniewicz E. Association between antenatal classes attendance and perceived fear and pain during labour. *Taiwan J Obstet Gynecol* 2019;58:492-6.
- Baylis R, Ekdahl J, Haines H, Rubertsson C. Women's experiences of internet-delivered cognitive behaviour therapy (iCBT) for fear of birth. *Women Birth* 2020;33:e227-33.
- Valtonen J. The health benefits of autobiographical writing: An interdisciplinary perspective. *J Med Humanit* 2021;42:1-19.
- Tavasoli A, Akhoundzadeh G, Hojjati H. The effect of narrative writing of mothers on their stress with care in the neonatal intensive care unit. *Complement Med J* 2020;10:196-205.
- Horsch A, Tolsa JF, Gilbert L, du Chêne LJ, Müller-Nix C, Bickle Graz M. Improving maternal mental health following preterm birth using an expressive writing intervention: A randomized controlled trial. *Child Psychiatry Hum Dev* 2016;47:780-91.
- Smith HE, Jones CJ, Hankins M, Field A, Theadom A, Bowskill R, *et al.* The effects of expressive writing on lung function, quality of life, medication use, and symptoms in adults with asthma: A randomized controlled trial. *Psychosom Med* 2015;77:429-37.
- Chu Q, Wu IH, Lu Q. Expressive writing intervention for posttraumatic stress disorder among Chinese American breast cancer survivors: The moderating role of social constraints. *Qual Life Res* 2020;29:891-9.
- Crawley R, Ayers S, Button S, Thornton A, Field AP, Lee S, *et al.* Feasibility and acceptability of expressive writing with postpartum women: A randomised controlled trial. *BMC Pregnancy Childbirth* 2018;18:75.
- Wigert H, Nilsson C, Dencker A, Begley C, Jangsten E, Sparud-Lundin C, *et al.* Women's experiences of fear of childbirth: A metasynthesis of qualitative studies. *Int J Qual Stud Health Well-being* 2020;15:1704484.
- Rabiepoor S, Vatankeh-Alamdary N, Khalkhali HR. The effect of expressive writing on postpartum depression and stress of mothers with a preterm infant in NICU. *J Clin Psychol Med Settings* 2020;27:867-74.
- Wijma K, Wijma B, Zar M. Psychometric aspects of the W-DEQ; a new questionnaire for the measurement of fear of childbirth. *J Psychosom Obstet Gynaecol* 1998;19:84-97.
- Carlsson IM, Ziegert K, Nissen E. The relationship between childbirth self-efficacy and aspects of well-being, birth interventions and birth outcomes. *Midwifery* 2015;31:1000-7.
- Khorsandi M, Ghofranipour F, Heydarnia A, Faghhi Zadeh S, Vafaei M, Rosta F, *et al.* The effect of childbirth preparation classes on childbirth fear and normal delivery among primiparous women. *J Arak Uni Med Sci* 2008;11:29-36.
- Mirmolaei ST, Khalili F, Besharat MA, Kazemnejad A. The effect of narrative writing on depression, anxiety, and stress of pregnant women. *J Client Cent Nurs Care* 2020;6:43-54.
- Montazeri M, Esmailpour K, Mohammad-Alizadeh-Charandabi S, Golizadeh S, Mirghafourvand M. The effect of writing therapy on anxiety in pregnant women: A randomized controlled trial. *Iran J Psychiatry Behav Sci* 2020;14:e98256.
- Vukčević Marković M, Bjekić J, Priebe S. Effectiveness of expressive writing in the reduction of psychological distress during the COVID-19 pandemic: A randomized controlled trial. *Front Psychol* 2020;11:587282.
- Chernecky CC, Murphy-Ende K. *Acute Care Oncology Nursing*. 2nd ed. United States: Sunders; 2008.
- Slade P, Sheen K, Weeks A, Wray S, De Pascalis L, Lunt K, *et al.* Do stress and anxiety in early pregnancy affect the progress of labor: Evidence from the wirral child health and development study. *Acta Obstet Gynecol Scand* 2021;100:1288-96.
- Ahmadi-Tahoor Soltani M, Ramezani V, Abdollahi MH, Najafi M, Rabiei M. The effectiveness of emotional disclosure (written and verbal) on symptoms of depression, anxiety and stress in students. *J Clin Psychol* 2011;2:51-9.