

## Effect of Counseling Based on Gamble's Approach on Postpartum Anxiety in Primiparous Women

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### ABSTRACT

**Background & aim:** The postpartum period is a time of extreme vulnerability to various psychiatric disorders, such as anxiety, which exert profound negative impacts on the health of neonates, mothers, and families. Therefore, it is necessary to perform some interventions to prevent and mitigate postpartum anxiety. The current study investigated the effect of counseling based on Gamble's approach on postpartum anxiety in primiparous women.

**Methods:** This randomized clinical trial was carried out on 60 primiparous women referred to Mashhad health centers in 2018. Participants in the intervention group received midwife-led individual counseling based on Gamble's approach during three prenatal and one postpartum session, apart from routine prenatal care. The control group only received routine prenatal care. A questionnaire to measure demographic and obstetric data as well as Depression, Anxiety and Stress Scale-21 (DASS-21) were used to collect data. The obtained data were analyzed in SPSS software (version 16) using Mann-Whitney, chi-square and independent t-test.

**Results:** There was no significant statistical difference between the two groups before intervention ( $P < 0.05$ ). The mean and standard deviations of women's anxiety in the intervention and control groups were obtained as  $7.5 \pm 1.1$  and  $8.6 \pm 2.4$ , respectively. The results of the Mann-Whitney test demonstrated that the level of anxiety in the intervention group was significantly lower, compared to that in the control group ( $P = 0.008$ ).

**Conclusion:** Counseling based on Gamble's approach reduced postpartum anxiety in primiparous women. Therefore, it can be used during pregnancy and postpartum period as an effective, simple, and adverse-effect-free method to reduce anxiety during the postpartum period.

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## Introduction

Childbirth and transition to motherhood are among the most enjoyable and evolutionary events in women's lives (1). Nonetheless, it can be considered a stressful event (2) since mothers experience labor and delivery which can be accompanied by severe pain or fear of death and unexpected medical interventions during the transition from these stages (3). Moreover, they

face expectations, unknown needs, new challenges, and major alterations (4). Motherhood and living with a new person with all its responsibilities provide mothers with a totally new role. It is associated with lifestyle changes and related concerns, especially in the first experience of pregnancy and childbirth (5).

Therefore, being in such a situation can be

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associated with increased vulnerability to the onset or recurrence of emotional and psychological disorders (6). Anxiety is one of the most common emotional reactions of women to these stresses (7). These unpleasant and vague feelings are created in response to internal or external stimuli resulting in physical, emotional, cognitive, or behavioral symptoms (8).

The results of related studies are indicative of an increasing and relatively high prevalence of anxiety symptoms in the postpartum period. In a systematic review study, Goodman et al. (2016) reported the prevalence of postpartum anxiety disorder to be 8.5%. Nevertheless, based on the results of another systematic review study (2018) conducted on 22,1974 women from 34 countries, the prevalence of anxiety disorder in 1-24 weeks after childbirth was obtained as 15%(10). Toler et al. (2018) also reported a 28.9% prevalence of postpartum anxiety (11). Furthermore, in another study conducted in Iran, 85.5% and 14% of mothers reported severe and mild postpartum anxiety, respectively (12).

Postpartum anxiety, which is a situational disorder caused by specific environmental conditions (13), is a natural response to motherhood to some extent (5). Although existing evidence demonstrated that numerous women experience clinical levels of anxiety in the postpartum period, they do not have the exact diagnostic criteria for an anxiety disorder. However, some other mothers may experience excessive and disabling anxiety which can lead to the development or exacerbation of generalized anxiety disorder (GAD) or other anxiety disorders (14).

In particular, postpartum anxiety can be associated with a disorder in infant-mother attachment, postpartum depression, reduced probability of breastfeeding, increased risk of neonatal abuse, delayed neonatal cognitive and social development, and increased risk of anxiety in infants (15-20). The risk factors of postpartum anxiety include individual factors (e.g., low maternal age, higher education, and employment), delivery-related factors (e.g., first-time pregnancy, cesarean section, tokophobia, loss of control during childbirth, low self-esteem for childbirth, and health care personnel, preterm labor), social factors (e.g., absence of family support, marital or family conflict, and social

health problems), and a history of psychiatry (depression and prenatal anxiety) (2).

There is a dearth of studies on postpartum anxiety disorders, and research on maternal mental disorders has focused more on postpartum depression (22, 23). Therefore, given the high prevalence of anxiety and its harmful and long-term effects on mothers and their newborns, even at sub-clinical levels (24), it is of paramount importance to design and provide interventions to reduce these problems (25). Postpartum mental disorders are treated by psychotherapy, social support, and pharmacotherapy. Since medications are prescribed after the emergence of symptoms and they can interfere with breastfeeding, preventative interventions assume critical importance during pregnancy and before the onset of the disorder (26, 27).

One of the interventions that have been proposed for the prevention of mental disorders during pregnancy and postpartum period is counseling and training by the medical staff (28). There are conflicting results regarding the role of counseling in the prevention and treatment of anxiety. In a study conducted by Momeni et al. (2018), five sessions of group psychological counseling successfully reduced anxiety among pregnant women (29). Nonetheless, in the study performed by Khodakarami et al. (2017), an eight-session group counseling failed to create a significant statistical difference in the mean anxiety score of pregnant women in the intervention group, as compared to the control group (10, 30).

Gamble et al.'s counseling strategy (2005) has been suggested to reduce mental disorders during pregnancy and postpartum period. It was used for the first time in the first 72 hours after delivery for women who have had a traumatic delivery and successfully reduced post-traumatic stress and depression during the 3 months after childbirth. However, no significant difference was detected between the two groups regarding the level of maternal anxiety (3). Using the strategy of this counseling, Fenwick et al. (2015) conducted a study on pregnant women in the 24-34th week of pregnancy to assess the fear of childbirth, childbirth outcomes, and mental health after childbirth (31).

The results indicated that the rate of cesarean

section and recall of disturbing labor experiences decreased in the postpartum period (31). In Iran, Androon et al. (2018) carried out a study to reduce pregnancy anxiety using the strategy of this counseling for pregnant women. They reported that three counseling sessions in the weeks of 28-34 of pregnancy (once every two weeks) reduced anxiety during pregnancy (32). However, the present study aimed to investigate the effect of an intervention on postpartum anxiety.

This counseling, which can be provided by a midwife, is a preventive technique, not a psychotherapeutic counseling approach. Counseling based on Gamble's approach is designed based on the principles of cognitive-behavioral therapy. In this counseling, it is believed that people's beliefs, thoughts, and attitudes affect their feelings and behavior. Moreover, it is argued that the change in undesirable thoughts can lead to healthier behaviors and improved emotional well-being. The strategy of this counseling provides women with a golden opportunity to pour out their innermost feelings. Moreover, they can have a correct understanding of events and the relationship of events with their feelings and behavior.

Counseling based on Gamble's approach involves nine strategies, including the development of midwife-parturient woman medical relationship, acknowledgment of the maternal feeling about delivery, assisting mothers to reveal their emotions, eliminating mothers' ambiguities, connecting behaviors, emotions, and delivery, revision of the stages of delivery, developing social support, promoting maternal adaptation, encouraging positive maternal perceptions, and finding solutions (33).

Studies in this field have not been performed in the form of postpartum intervention; nonetheless, prevention and early intervention are required for the mental health of mothers in the postpartum period. Moreover, emotional support is of utmost importance for mothers in the process of childbearing in the prevention or reduction of mental disorders after childbirth. With this background in mind, the present study was conducted to determine the effect of counseling based on Gamble's approach on postpartum anxiety in primiparous women in

Mashhad in 2018.

## Materials and Methods

The present randomized clinical trial was carried out on a total of 60 primiparous women who were referred to healthcare centers in Mashhad, Iran in 2018. The study protocol was approved by the Ethics Committee of Mashhad University of Medical Sciences (code: 970137), followed by multistage sampling. To this end, out of 5 health centers in Mashhad, numbers 2 and 5 were randomly selected by drawing lots. Thereafter, four centers were randomly selected from each health center, followed by sampling. In each center, eligible women were selected by convenient sampling (simple non-probability), and after obtaining written informed consent, using a prepared computer list, the selected women were randomly assigned to two groups of intervention and control groups.

According to the results of a study varied out by Andaroon et al. (32), using the comparison of means formula at the reliability coefficient of 0.95 and test power of 0.80, the sample size was estimated at 29 participants in each group. 36 subjects were assigned to each group considering 20% sample loss. During the study, a total of 12 cases were excluded from the study due to unwillingness to continue participating in the study in the third stage of the counseling session (n=2), failure to answer the phone on the estimated delivery time (n=1 in the intervention group; n=2 in the intervention group), emergency cesarean section (n=3 in the intervention group; n=4 in the intervention group). Accordingly, the analysis was performed on 30 subjects in each group (60 cases in total).

The inclusion criteria of the study were as follows: 1) Iranian and residency in Mashhad, 2) primiparous women, 3) the age range of 18-35 years, 4) basic literacy, 5) gestational age of 35 weeks, 6) singleton pregnancy; 7) intentional pregnancies, 8) no high-risk pregnancy, 9) absence of fetal anomalies and disorders based on ultrasonography, 10) no history of medical and psychological disorders or use of psychiatric medications, 11) no drug or alcohol addiction, 12) no history of infertility, 13) absence of Post-Traumatic Stress Disorder (PTSD) and severe depression, anxiety, and stress based on Depression, Anxiety and Stress Scale - 21 Items (DASS-21) (score Less than 20

for depression, less than 14 for anxiety and less than 25 for stress), and 14) no causes of C-section.

The exclusion criteria entailed: 1) the absence in the counseling program for more than one session, 2) occurrence of high-risk complications during pregnancy, during/after delivery, and 3) occurrence of stressful events during the study. Participants in the intervention group received midwife-led individual counseling based on Gamble's approach, apart from routine prenatal care during the course of study. This counseling lasts for 3 sessions before delivery (two face-to-face sessions for 60-45 min at 35 and 37 weeks and one telephone session for 10-15 min at 36 weeks) and one face-to-face consultation session for 60-45 min. It was performed between 4-12 h after delivery (when mothers' vital signs were normal).

The counseling sessions included two 45-60-min face-to-face sessions in weeks 35 and 37, one 10-15-min phone counseling session in week 36 of gestation, and one 45-60-min face-to-face postpartum counseling session 4-12 h after delivery (when the mother's vital signs were normal).

The content of counseling in each session included: first session (week 35), the establishment of the initial communication, asking simple and non-threatening open-ended questions about pregnancy and maternal perceptions regarding labor, encouraging mothers to express their feelings and thoughts, resolving misunderstandings and ambiguities regarding the issue under discussion. At the end of the session, mothers were asked to understand the connection between their previous expectations, thoughts, and beliefs with current feelings and behaviors within a week and find a logical solution for them.

The second session (Week 36 on the phone): asking mothers about the relationship of their current feelings and behaviors with previous expectations and beliefs, promoting positive maternal thought, and supporting and encouraging mothers to make wise decisions about practical solutions. The third session (week 37): 1) providing solutions to deal with negative thoughts, a positive attitude to childbirth, the necessary information in the

management of childbirth 2) clarifying and eliminating mothers' ambiguities and misunderstandings about childbirth, 3) acknowledging the merit and competence of mothers to solve their problems.

The fourth session (4-12 h after delivery): reviewing the steps of labor and delivery, putting emphasis on receiving emotional support, deciding on practical solutions. During the study, the participants were contacted via phone to be reminded of the next counseling sessions. Moreover, to inform the researchers of their due dates, mothers were contacted weekly since week 37 of gestation until labor. During the study, the cases in the control group were provided by routine prenatal care and training in healthcare centers.

Data collection tools included a mother-newborn demographic questionnaire and a DASS21 questionnaire. The mother-Newborn demographic questionnaire contained 49 questions about individual, obstetrics, childbirth, and neonatal characteristics (maternal individual characteristics=8 items, obstetrics information=7 items, childbirth, newborn=27 items, and maternal satisfaction with childbirth=7 items). This questionnaire was validated by content and formal validity method. To this end, after reading the latest books and related articles in the field of research, it was prepared under the supervision of supervisors and consultants. Subsequently, it was presented to seven faculty members related to the subject of research, and the final tool was used to collect information using their corrective and suggestive opinions.

The DASS21 Questionnaire was used to assess postpartum anxiety. This questionnaire included 21 questions with 3 subscales of stress, anxiety, and depression, each of which includes 7 items: stress: 7 items, anxiety=7 items, and depression=7 items. Each item is scored from zero (it doesn't apply to me at all) to 3 (it applies completely to me). The final score of each subscale which is obtained through the sum of the scores of the related items must be doubled.

The questionnaire was validated in a study carried out by Sahebi et al. (2005), and in the study by Effati Daryani et al. (2017) for utilization during pregnancy and postpartum. In the present study, the content validity was



confirmed using the opinion of seven faculty members of Mashhad University of Medical Sciences. In the study by Effati Daryani et al. (2017), the reliability of the DASS21 questionnaire was reported to be 0.80%, 0.72%, and 0.80% for the variables of depression, anxiety, and stress, respectively. In the current study, the Cronbach alpha reliability coefficient for the scales of depression, anxiety, and stress was reported as 0.82%, 0.74%, and 0.78%, respectively.

The maternal and neonatal demographic questionnaire was completed by the self-report and medical record. The DASS21 questionnaire was completed in both groups once before the intervention and once in the intervention group 6-12 h after the last counseling session and in the control group within 18-24 h after delivery. The obtained data were analyzed in SPSS software (version 16). Fisher's exact test and chi-square test were used to compare the groups in terms of qualitative variables.

Independent T-test was also used to compare groups concerning quantitative variables with a normal distribution. To compare the groups in terms of ranked variables and quantitative variables with non-normal distribution, Mann-Whitney, which is a non-parametric test, was used. A p-value less than 0.05 was considered statistically significant.

## Results

The mean age scores of mothers in the intervention and control groups were reported as  $23.3 \pm 3.9$  and  $24.4 \pm 4.4$ , respectively.

The mean gestational ages upon delivery in the intervention and control groups were obtained at  $40.8 \pm 5.7$  and  $39.8 \pm 1.2$  weeks. Most mothers were housewives, including 29 (96.7%) cases in the intervention group and 28 (93.3%) participants in the control group. Regarding educational level, 18 (0.60%) cases in the counseling group and 13 (43.3%) subjects in the normal care group had a diploma. Most participants had a satisfactory income level, including 23 (76.7%) cases in the counseling group and 21 (0.70%) subjects in the normal care group. There was no statistically significant difference between the two groups in terms of maternal age ( $P=0.28$ ), maternal education level ( $P=0.306$ ), maternal occupation status ( $P=0.00$ ), family income level ( $P=0.55$ ), gestational age

upon delivery ( $P=0.35$ ), and the two groups were homogeneous (Table 1).

Furthermore, no statistically significant difference was detected between the two groups regarding delivery data, including the duration of the active phase of labor in the first ( $P=0.86$ ), second ( $P=0.93$ ), and third phase ( $P=0.94$ ), use of oxytocin during labor ( $P=0.75$ ), type of the rupture of the membranes ( $P=0.60$ ), weight of the neonate ( $P=0.83$ ), gender of the neonate ( $P=0.43$ ), 1-min Apgar score ( $P=0.08$ ), and 5-min Apgar score ( $P=0.07$ ; Table 2). With respect to social support, the results of the Mann-Whitney U test demonstrated no significant difference between the intervention and control groups ( $P=0.059$ ; Table 1).

Quantitative variables are expressed in terms of Mean  $\pm$  standard deviation and qualitative variables are expressed in terms of (percentage) number.

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In line with the main objective of the study, the results of the present study denoted that the mean and standard deviations of maternal anxiety in the intervention and control groups were calculated at  $8.7 \pm 1.7$  and  $8.7 \pm 1.8$ , respectively. Mann-Whitney U test did not demonstrate a significant difference, and the two groups were homogeneous in this variable ( $P=0.96$ ; Table 3). After the intervention, the mean and standard deviations of maternal anxiety in the intervention and control groups were obtained at  $7.5 \pm 1.1$  and  $8.6 \pm 2.4$ , respectively. Mann-Whitney U test indicated a significant difference ( $P=0.008$ ) and the mean anxiety score in the intervention group was significantly lower than the control group (Table 3).

The mean reduction of anxiety after the intervention in the intervention and control groups was reported as  $1.1 \pm 1.5$  and  $0.1 \pm 2.4$ , and the Mann-Whitney U test showed this difference to be significant ( $P=0.03$ ; Table 3). In intragroup comparison, the Wilcoxon test indicated that in the intervention group, the difference in anxiety after the intervention was significant, as compared to before the intervention ( $P=0.001$ ). However, this difference was not significant in the control group ( $P=0.70$ ; Table 3).

**Table 1.** Relative frequency distribution of individual, family, and social characteristics of participants in two groups of intervention and control

Variable	Intervention	Control	Test result
<b>Maternal age (year)</b>	23.3±3.9	24.4±4.4	P=0.28 Independent t-tset
<b>Gestational age at birth (week)</b>	40.8±5.7	39.8±1.2	P=0.35 Man-Whitney
<b>Maternal education</b>			
Primary	1(3.3)	3(10.0)	
Junior high school	9(30.0)	6(20.0)	
Diploma	18(60.0)	13(43.3)	P=0.30
Academic education	2(6.7)	8(26.7)	Man-Whitney
Total	30(100.0)	30(100.0)	
<b>Maternal occupation</b>			
Housewife	29(96.7)	28(93.3)	
Employed	1(3.3)	2(6.7)	P=1.00
Total	30(100.0)	30(100.0)	Fisher's exact test
<b>Spouse's education</b>			
Primary	4(13.3)	4(13.3)	
Junior high school	12(40.0)	6(20.0)	
Diploma	12(40.0)	13(43.3)	P=0.09
Academic	2(6.7)	7(23.3)	Man-Whitney
Total	30(100.0)	30(100.0)	
<b>Spouse's age</b>	28.2±4.3	28.8±3.4	P=0.55 Independent t-test
<b>Length of marriage (year)</b>	2.6±2.0	3.2±1.6	P=0.07 Man-Whitney
<b>Income level</b>			
Satisfactory	7(23.3)	9(30.0)	
Unsatisfactory	23(76.7)	21(70.0)	P=0.55
Total	30(100.0)	30(100.0)	Chi-square
<b>Getting regular prenatal care</b>			
Yes	29(96.7)	30(100.0)	
No	1(3.3)	0(0.0)	P=1.00
Total	30(100.0)	30(100.0)	Fisher's exact test
<b>Desired neonate gender in mother's view</b>			
Yes	27(90.0)	28(93.3)	
No	3(10.0)	2(6.7)	P=1.00
Total	30(100.0)	30(100.0)	Fisher's exact test
<b>Desired neonate gender in father's view</b>			
Yes	26(83.3)	25(83.3)	
No	5(16.7)	5(16.7)	P=1.00
Total	30(100.0)	30(100.0)	Chi-square
<b>Social support</b>	11.9±1.8	12.1±2/0	P=0.59 Man-Whitney

**Table 2.** Relative frequency distribution of delivery and neonatal characteristics of participants in two groups of intervention and control

Variable	Intervention	Control	Test result
<b>Onset of labor pains</b>			
Spontaneous	22(73.3)	24(80.0)	P=0.54
Induction	8(26.7)	6(20.0)	Chi-square
Total	30(100.0)	30(100.0)	
<b>Rupture of membranes</b>			
Spontaneous	13(43.3)	15(50.0)	P=0.60
Induction	17(56.7)	15(50.0)	Chi-square
Total	30(100.0)	30(100.0)	
<b>Length of active first stage (min)</b>	28.3±114.2	279.0±123.9	P=0.86 Independent t-test
<b>Length of active second stage (min)</b>	51.1±21.4	51.5±19.1	P=0.93 Independent t-test
<b>Length of active third stage (min)</b>	8.3±5.3	8.8±6.8	P=0.94 Man-Whitney
<b>Use of oxytocin</b>			
Yes	24(80.0)	23 (76.7)	P=0.75
No	6(20.0)	7 (23.3)	Chi-square
Total	30(100.0)	30 (100.0)	
<b>Gender of neonate</b>			
Male	16 (53.3)	13 (43.3)	P=0.43
Female	14 (46.7)	17 (56.7)	Chi-square
Total	30 (100.0)	30 (100.0)	
<b>Weight of neonate(gr)</b>	3259.3±351.8	3321.0±461.0	P=0.83 Man-Whitney

**Table 3.** Mean and standard deviation of anxiety score of mothers under study in the pre- and post-intervention stages in intervention and control groups

Anxiety	Group		Inter-group test results
	Intervention n=30	Control n=30	
	Mean±SD	Mean±SD	
<b>Pre-intervention</b>	8.7±1.7	8.7±1.8	Z=-0.0 P=0.96 Man-Whitney
<b>Post- intervention</b>	7.5±1.1	8.6±2.4	Z=-2.6 P=0.008 Man-Whitney
<b>Difference between pre and post intervention</b>	-1.1±1.5	-0.1±2.4	Z=-2.1 P=0.03 Man-Whitney
<b>Intragroup test results</b>	Z=-3.4 P=0.001 Wilcoxon test	Z=-0.4 P=0.70 Wilcoxon test	

## Discussion

Childbirth as a stressful event can cause anxiety and anxiety disorders in women (2). As evidenced by the results of some studies, counseling can play a peculiar role in the reduction of maternal anxiety during pregnancy and the postpartum period (29). In the present study, the effect of counseling based on Gamble's approach on postpartum anxiety was examined in primiparous women. The obtained results indicated that this counseling is effective in the reduction of maternal anxiety in the postpartum period.

In a similar vein, Ahmadi et al. (2014) conducted a study to assess the effectiveness of psychological interventions in the reduction of anxiety and postpartum depression. They reported that that eight sessions of group counseling with the cognitive-behavioral approach along with pregnancy training reduced anxiety and depression in the intervention group (34). Moreover, the results of the study by Andaroon et al. on the effect of counseling on women's anxiety during pregnancy suggested that three sessions of midwife-led individual counseling based on Gamble's approach reduced antenatal (during pregnancy) anxiety (32). The results of this study are in accordance with the present study.

Counseling based on Gamble's approach is about mothers' current expectations and their feelings about pregnancy and childbirth. In this counseling, to identify the cause of anxiety, the counselor encourages mothers to express their feelings, beliefs, and expectations. At the same time, it supports mothers by understanding their feelings and promoting their positive thoughts and provides them with the necessary information and training. In so doing, mothers are indirectly led to correct their negative beliefs and irrational and destructive expectations and design appropriate solutions.

Giving awareness and education in Gamble's approach is not in the framework of predetermined topics and contents, rather it is based on the needs, feelings, and beliefs of mothers. In a study performed by Azizi et al., counseling based on Gamble's approach could reduce maternal anxiety in women with traumatic childbirth 4-6 weeks after delivery. The results of the present study and the

abovementioned study are consistent. Nevertheless, one of the strengths of the present study is the time of the intervention that is mothers participating in the study received counseling in the late first trimester of pregnancy before delivery and the emergence of the symptoms of anxiety. It was due to the importance of primary prevention and early intervention for maternal mental health.

Therefore, based on the concept of primary prevention, this counseling can have a preventive aspect. As Cowen argues, primary prevention programs attempt to prevent a problem from ever occurring and should be implemented in target groups and communities on healthy individuals or those who are predicted to be at serious risk of disorder (35). Gamble et al. (2005) conducted a clinical trial study to assess the effect of midwifery counseling on women's anxiety after a traumatic delivery in primiparous women. In line with the present study, the results of the mentioned study showed that although women in the intervention group had lower levels of anxiety than the control group, this difference was not statistically significant (3).

In Gamble's study, both primiparous and multiple mothers received a midwife-led face-to-face counseling session in the first 72 h after delivery and a counseling session via phone in the 4-6 weeks after delivery, while the present study was conducted solely on primiparous mothers. The rate of postpartum stress and anxiety in multiple mothers decreases and they experienced less stress, in comparison to primiparous women (36). This discrepancy between the results of the study by Gambel et al. and the present study can be ascribed to cultural differences in the study environment, the number of counseling sessions, and the time of counseling.

Successful counseling requires the use of a range of theoretical and practical counseling techniques. Therefore, counseling cannot be hurried, and a face-to-face counseling session is not sufficient to establish an effective and helpful relationship (37-39). On the other hand, telephone counseling is not very effective due to the absence of any visual cues, such as body language. Although there is ample evidence of



the potential benefits of this type of counseling, one of the primary concerns in this type of relationship is the inability of therapists and clients to build a strong therapeutic relationship in the absence of nonverbal cues.

The appearance and movements of the clients give the counselors some cues to recognize their problems, and feelings and emotions play a key role in our negotiations. In this regard, if we cannot observe and understand the feelings of the other party and focus only on his/her words, the odds of obtaining effective results will be reduced (40). In the present study, three face-to-face counseling sessions were performed at 35, 37 weeks of gestation and immediately after delivery, and only one telephone counseling session was presented at 36 week of gestation.

In line with the results of the present study, the findings of another study (2016) showed that supportive counseling significantly reduced the anxiety of women who are at risk of preterm delivery (41). Since anxiety is a vague feeling of fear and anxiety of unknown origin, in counseling based on Gamble's approach, mothers are encouraged to understand the connection between their thoughts and feelings, and how thoughts and feelings influence their behavior, which in turn, helps mothers to identify the problem and cause of anxiety.

Thereafter, the counselor provides some information regarding the cause of the problem, and increases mothers' knowledge, and promotes their positive thoughts and abilities. In so doing, mothers are led to discover the right solution, cope with and reduce stress and anxiety, and increase adaptation to their new situation. In a study in this regard, Kaboli et al. (2017) assessed the effect of group counseling based on the cognitive-behavioral approach on antenatal stress and anxiety. They reported that counseling with a cognitive-behavioral approach reduced maternal stress and anxiety in the intervention group and the mean stress and anxiety scores between the two groups were statistically significant (42).

The results of the mentioned study are in accordance with the present study. Nonetheless, in this study, the content and approach of counseling, as well as the way counseling will go

is different from the present study. In the present study, the counseling was performed individually. In this type of counseling, the counselors exclusively focus on the words and needs of a client. The time limit of group counseling is less in this type of counseling, and the counselor can effectively discuss the client's problems in every session (43).

In the process of counseling based on Gamble's approach, the factors that lead to a poor understanding of mothers are assessed. Moreover, in this counseling, mothers' feelings about perceived events and the factors that cause stress and anxiety are connected, which in turn, reduces self-blame and increases flexibility and control in mothers, and prevents mental recurrence of stress following childbirth and mental disorders (3, 33). This counseling can help prevent postpartum anxiety by helping mothers gain a clear understanding of the situation. Moreover, it provides new approaches to a better understanding of issues, leading to increased adjustment, adaptability, and endurance in the face of potential problems.

The results of the present study suggested that counseling based on Gamble's approach leads to a reduction in postpartum anxiety in women receiving counseling. Every study has some limitations which must be addressed in the paper and the present study is not an exception. For one thing, the participants in the current study were not blinded to the treatment since they received counseling. Moreover, participants' minor and undiagnosed physical and mental illnesses which could affect the results of the research were out of researchers' control. Furthermore, considering all the predisposing factors of creating anxiety in the inclusion criteria limits the generalizability of the results to the whole society.

## Conclusion

The results of the present study demonstrated that counseling based on Gamble's approach as an easy and low-cost method can reduce postpartum anxiety in primiparous women. Therefore, given the importance of maternal mental health during pregnancy, childbirth, and after childbirth, midwives greatly contribute to the provision of counseling services during this period. Therefore, due to the applicability of

counseling based on Gamble's approach to midwifery, it is recommended that this type of counseling be integrated into the healthcare programs of pregnant mothers to prevent or reduce postpartum psychological trauma. This counseling can provide mothers with the necessary information and a golden opportunity to talk and express their problems and doubts.

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### Conflicts of interest

Authors declared no conflicts of interest.

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