



The Effect of Peers Support on Postpartum Depression: A Single Randomized Clinical Trial

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ABSTRACT

Introduction: Mental disorders during pregnancy and postpartum period can affect the quality of life of mother, baby and the whole family. Psychoeducation can be offered to those at risk to prevent or reduce the incidence of these disorders, but the most appropriate time for such intervention is not determined yet. Postpartum depression and its effects not only involve mothers and their children but it will also affect their families. Therefore, this study aimed to investigate the effect of mothers receiving peer support on postpartum depression. **Methods:** 100 primiparous women participated in a randomized clinical trial. The intervention group received phone calls by their peers from the last three months of pregnancy until two months after delivery. The control group only had access to routine care. Both groups in the second month after delivery were checked regarding depression using Edinburgh Postnatal Depression Scale. Data analysis was performed using independent t-test, chi-square test and covariance analysis. **Results:** Mean depression score before intervention was 13.92 (3.23) in the control group and 14.06 (3.12) in the intervention group. In week 8 after delivery, mean score of depression in control group was 13.29 (4.08) but in the intervention group it was reduced to 10.25 (4.18). Difference in the reduction of mean postpartum depression score between the two groups showed statistically significant difference ($p < 0.001$). **Conclusion:** This study showed that peer support was effective in the prevention of postpartum depression, therefore, it is recommended to be used in the reduction of postpartum depression.

Introduction

During pregnancy and after delivery mothers have needs and expectations. Studies showed that the needs of primiparous mothers are different from mothers who have previously experienced pregnancy and infant care. Fear, anxiety, and lack of confidence in taking care of the newborn and depression in primiparous mothers are higher.¹ Postpartum depression is associated with symptoms such as disability, restlessness, crying, sleeping difficulties, changes in appetite, sadness and sorrows, and suicidal thoughts.² Previous studies showed 10% to 20% prevalence of postpartum depression^{3,4} and a study conducted in Tabriz, Iran reported 34.7% prevalence.⁵ Postpartum depression can have negative consequences on women and their families, and establishes difficulties in the relationship between mother and child. Lack of emotional communication between mother and infant will interfere with the initiation and continuation of breastfeeding.^{6,7} Due to the high prevalence of postpartum depression and its impact on the health of mother and infant which imposes enormous costs on the society, identifying the underlying causes of postpartum depression and attempt to remove them will have a significant role in the prevention of depression and its undesirable effects.⁸ Most findings suggest that factors such as hormonal factors, midwifery, economic,⁹ lack of social support, stressful life events, and prenatal depression are involved in postpartum depression.¹⁰ Depression and anxiety during pregnancy are disorders that not only affects the mother and her infant but even increases the risk of postpartum depression.¹¹ Since the severity of postpartum depression in people with poor social support is higher,¹² having psychosocial support during pregnancy and after delivery has great importance in preventing depression.¹³ According to the importance of having social support as an important factor in the acceptance

of motherhood,¹⁴ there are different kinds of social support which can be offered by the family, spouse, friends, and peers.¹⁵

Transition into motherhood starts when a woman is pregnant and waits for delivery. At this stage, mothers need to gain skills and knowledge, they look for new friends, and want to communicate with other parents.¹⁶ While social support facilitates the transition to motherhood but the short duration of hospital stay is not responsive to the mother's needs and expectations, mothers' participation in group preparation before delivery classes can provide them social support.¹⁷ The presence of mothers in social groups has a significant impact on their physical and mental health. In these groups, mothers have psychological and social interaction with each other, and they can assist one another in dealing with psychological and behavioral disorders which occurs due to changes.¹⁸

Communicating with people who have similar experiences has positive effects on achieving motherhood including breast-feeding duration, increasing confidence, and reducing fear and anxiety in mothers. When mothers interact with people who have experienced similar situations, they can benefit from their knowledge and observations, and gain hope by seeing the grown children of their peers.¹⁹

In this regard, one form of social support is the peers' support. Peer support means getting support and encouragement from an equal and alike person.²⁰ In this form of support, people who have similar ethnic and cultural background and the same emotional, social and economic status will communicate with each other. Peer support is different from the support which is received from professional service providers. In providing service by professionals, knowledge, experience and similar concerns do not exist, and the clients do not see themselves at the same situation as the service providers.^{21,22}

Peer mother support program can be used in various fields of health such as depression,²² initiation and duration of breastfeeding,²³ reducing maternal anxiety and stress,²⁴ and increasing self-esteem.²⁵ The findings of Dennis et al. study on the effect of peer support on prevention of postpartum depression showed that postpartum depression in a group of mothers who had been supported by their peers had significantly reduced.²² The results of Cochrane database review on the effect of peer support on maternal health outcomes, suggested that further studies are needed to ensure the effectiveness of peer support. The conflicting results on the benefits of peer support, the existence of different supporting programs which are not generalizable to all populations,²⁶ and also lack of studies in this field in Iran, made us to evaluate the effect of peers support on postpartum depression. This study was conducted with the hope that its findings could lead to improving mother and infant health programs and provide new approaches.

Materials and methods

This was a single- randomized clinical trial study, which was conducted in 2020. Sampling was done from selected hospital of Jhansi and Lucknow. Eligible primiparous women were invited to complete Edinburgh depression survey. Inclusion criteria included 18 to 35 years old, not having internal diseases such as diabetes, epilepsy, anemia, and hypothyroidism, not using psychotropic medications as well as heart and blood pressure medications, not suffering from diseases such as mental retardation, having a healthy fetus shown by ultrasound, and being at least literate. Samples who gained a score of 11-23 in Edinburgh depression survey were entered to the study. All the study populations were referred to psychologist in order to confirm the diagnosis and reject other disorders and the results were followed within a week. According to Abari Aghdam study,²⁷ the sample size was estimated 45 subjects in each group by Stata software with power = 0.9 and $\alpha = 0.05$. By considering 10% probability in loss of samples, a total of 50 people were enrolled in each group. Convenient sampling started in the health care centers to achieve the desired sample size. Selected subjects were entered into the study with consecutive numbers and were randomly assigned to intervention and control groups.

Randomization was done by internet blocking, with blocks of 4s and 6s.

The control group received normal care but the intervention group received peer support in addition to normal care. The peers had the experience of delivery (Cesarian section or natural) and breast feeding and were able to read and write in Hindi. Some peer mothers who referred to health centers were selected, and after obtaining informed consent, 4-hour sessions were held for them in 2 days. Peers were asked to have at least one telephone call a week with the mother under their support. They were asked to emotionally support the mothers during calls and share their experiences in different stages of pregnancy, childbirth, and after delivery. A manual guide, and a form related to phone calls were given to peer mothers, in which they were able to record the number, duration, and outcome of the call and return it to the researcher. Data collection tool consisted of Edinburgh Depression Scale, demographical information including

demographic and social information of mothers, age, occupation, education, social, and emotional support from their spouse and family.

Edinburgh questionnaire was designed by Cox and included 10 questions with 4 parts for each question. Depending on the answer each question obtained 0-3 scores.²⁸ This questionnaire with cutoff point of 11, reliability of 0.83, and validity coefficient of 0.69 was qualified as a reliable test for diagnosis of postpartum depression in women after delivery by Abari Aghdam study,²⁷ which had sensitivity of 0.63 and specificity of 0.85. In this study the reliability of Edinburgh questionnaire was 0.69 (Cronbach's alpha). These questionnaires were completed by mothers once before intervention in the third month of pregnancy and another time in the second month after delivery. The person who collected and analyzed the data was not aware of the control and intervention groups (single-blind). The subjects were excluded from the study if they suffered from a traumatic event during the study, unwilling to continue with the study, and premature delivery which caused hospitalization of the infant (Figure 1). Data analysis was done by SPSS software version 13 (SPSS Inc., Chicago, IL, USA) using descriptive statistics, Student's t-test, chi-square, and covariance analysis.

Results

After six months of sampling from Tabriz health care centers, data from 96 patients were analyzed. According to table 1, there was no significant difference regarding personal and social characteristics between intervention and control group.

In the control group, there was no significant difference between the mean depression scores before and after intervention (Table 2). In the intervention group, 8 weeks after delivery there was a decrease in the depression score. Considering depression scores by Edinburgh scale eight weeks after delivery, 13 (27.1%) subjects in the control group and 28 (58.33%) subjects in the group receiving peer support gained scores less than 11.

Analysis of covariance (ANCOVA) was used for data analysis. Equality of variance in the dependent variable in the study groups was needed for covariance analysis. Homogeneity-of-slopes test was used for this purpose. Results indicated no significant interaction between pre-test depression and peer support factor [$P = 0.056$, $F(1, 92) = 3.74$]. Therefore, analysis of covariance was used to test data. Covariance analysis showed that receiving support from peers had a positive significant effect on reducing postpartum depression, and the intensity of this effect was estimated as $ES = 0.148$ (Table 3).

The results regarding the onset of breastfeeding after delivery showed that the mean duration of breastfeeding in the control group was 1.57 (0.56) hours and in the group receiving peer support it was 1.34 (0.49) hours. Independent t-test showed significant difference between the two groups ($p = 0.03$). 39 mothers (81.25%) in the control group and 47 mothers (97.91%) in the intervention group had continued breastfeeding in week 8 after delivery. The difference was assessed with chi-square test and reported as statistically significant ($p = 0.02$).

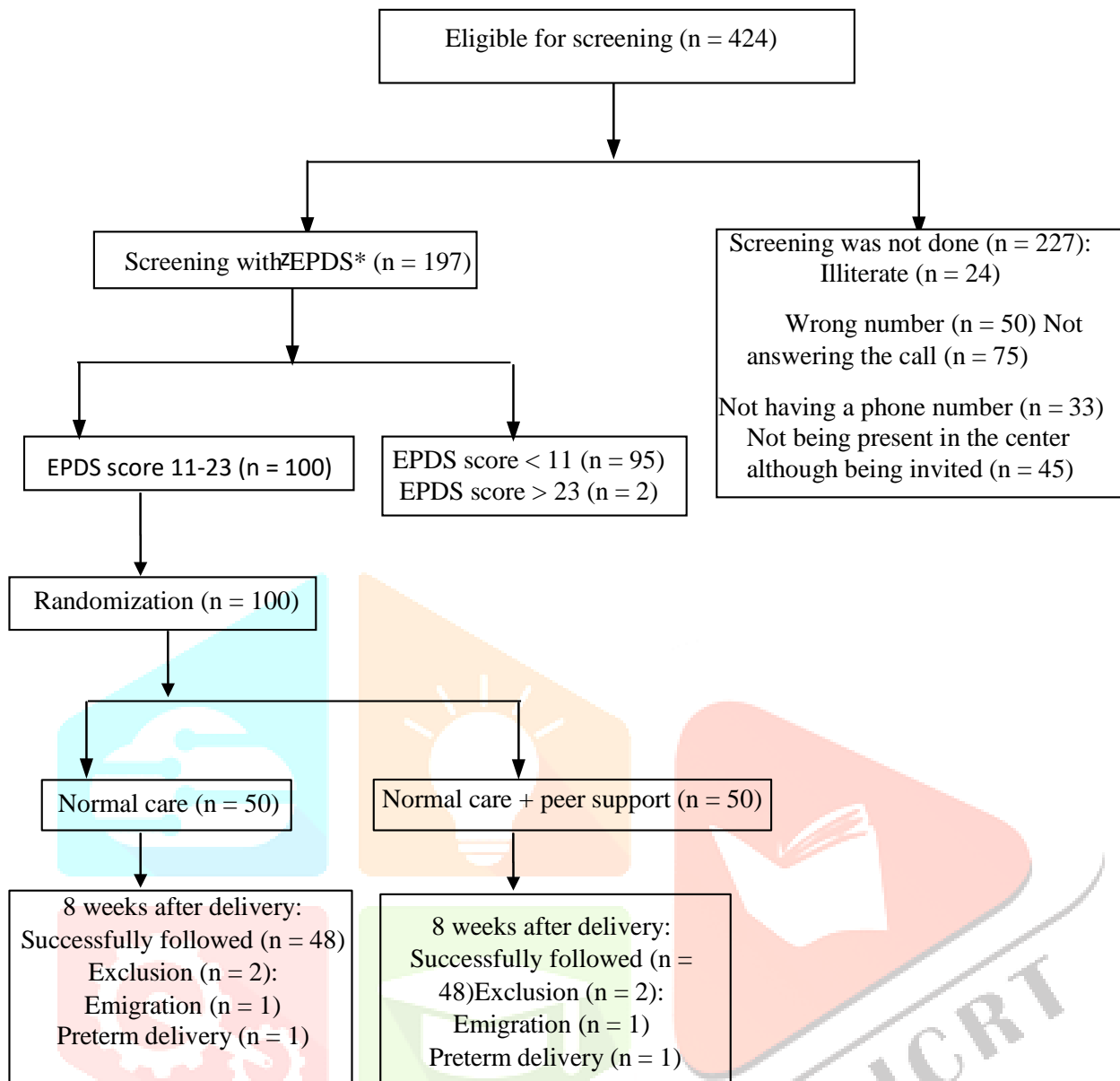


Figure 1. Flow diagram of study participants

Table 1. Personal and social characteristics of the participants in the control and intervention groups

	Control group (n = 50) N (%)	Intervention group (n = 50) N (%)	Statistical indicators
Mother's age (year)	24.34 (4.34)	24.14 (3.86)	t = 0.24, df = 98 p = 0.8
Education			
Primary	10 (20)	7 (14)	x ² = 0.67, df = 3 p = 0.88
Secondary	16 (32)	18 (36)	
Diploma	21 (42)	22 (44)	
University	3 (6)	3 (6)	
Occupation			
Housewife			x ² = 1, df = 2 P = 0.6
Working at home	48 (96)	49 (98)	
Working outside	1 (2) 1 (2)	1 (2) 0	
Housing			
Owner	21 (42)	26 (52)	x ² = 1, df = 1 p = 0.31
Leased	29 (58)	24 (48)	
Satisfaction from pregnancy			
Yes	40 (80)	45 (90)	p = 0.16
No	10 (20)	5 (10)	
Husband's age (year)	29 (4.28)	28 (4.37)	t = 6.9, df = 98 p = 0.49
Occupation			
Private	44 (88)	45 (90)	x ² = 4.47, df = 2 p = 0.1
Employee	5 (10)	1 (2)	
Unemployed	1 (2)	4 (8)	
Insurance status			
Have	36 (72)	34 (68)	x ² = 0.19, df = 1 p = 0.66
Do not have	14 (28)	16 (32)	
Marital satisfaction			
Yes	45 (90)	47 (94)	x ² = 0.54, df = 1 p = 0.46
No	5 (10)	3 (6)	
Having family support			
Yes	42 (84)	47 (94)	x ² = 2.55, df = 1 p = 0.11
No	8 (16)	3 (6)	

Table 2. Depression scores before and after intervention in control and intervention groups

Group	Depression variable	Number	Minimum scores	Maximum scores	Mean (SD)	Statistical indicators
Control	Before interventions	50	11	23	13.92(3.23)	t = 47, df = 1.33, p = 0.19
	8 weeks after delivery	48	5	24	13.29(4.08)	
Intervention	Before intervention	50	11	22	14.06 (3.12)	t = 47, df = 5.66, p < 0.001
	8 weeks after delivery	48	5	23	10.25 (4.18)	

Table 3. Covariance analysis of the impact of peer support on postpartum depression

Source of changes	Total square	df	Mean square	F	P	Partial Eta Squared
Pre-test depression	274.16	1	274.16	19.07	< 0.001	0.170
Peer support	231.75	1	231.75	16.12	< 0.001	0.148
Error	1336	93	14.37			

Discussion:

Telephone intervention is a flexible and confidential approach. People who are involved in the intervention will not face social stigma due to being unknown. Due to the social and economic differences which are becoming less important and the removal of access barriers such as distance and transportation problems, this approach is a useful method in terms of costs.^{29,30} Although with the advancement of technology in recent decades new means of communication such as Internet and Email are created, but people still have wider access to telephone.^{30,31} Due to the mentioned reasons, telephone was used in this study since it was the most accessible tool for the majority of the participants. Different studies showed that lack of social support was one of the factors influencing postpartum depression.^{9,12} Receiving social support and social ties is like a shield against depression during and after pregnancy.¹⁵ Having communication with peer people who have the same social and cultural situations and have experienced the same problems and concerns is considered as a form of social support.²⁰ The results of the present study also showed that the mothers who received phone calls from their peers had lesser depression signs in week 8 after delivery than the control group who had only received routine care. These findings were consistent with the results of Dennis et al. study which investigated the effect of telephone support on postpartum depression. In their study, 14% of the people in the intervention group had depression score more than 12, but in the control group it was 25%.²² The difference between Dennis et al. study and the present study was that in their study mothers with depression score of more than 9 and at maximum 2 weeks after delivery entered the study, but in the present study mothers with depression score of 11 and more and being in the last trimester of pregnancy were chosen as study subjects. In their study, Preyde and Ardal also indicated the positive effect of peer mother support on postpartum depression in week 16 after delivery (2.20 against 4.88),²⁴ that was consistent with the present study. The difference with the present study is that Beck Depression Inventory was used to study postpartum depression, and also no kind of screening before entering the study was conducted to assess mothers' depression. The present study showed that receiving support from peer mothers had positive impact on the initiation and continuation of breastfeeding. This result was also consistent with the results of Dennis et al. study which breastfeeding in the intervention group was 56.8% but in the control group it was 40.3% with statistically significant difference.²³ However, Muirhead et al. did not reach significant results regarding the effect of peers support on initiation and continuation of breastfeeding.³² This might be due to the large sample size and small number of peer mothers. The number of mothers in the intervention group was 112 people while the number of peer mothers was 12. In the present study, 17 peer mothers were trained to support 50 participants.³² Another difference was the kind of communication, which in the mentioned study the mothers called their peers if needed. While in the present study, peers were trained to call the mother under their support at least once a week. Comparing this study with the previous similar studies showed that identification of depressed individuals was done in the last trimester of pregnancy. Since depression during pregnancy is one of the risk factors of postpartum depression,³³ starting an on time intervention can prevent postpartum depression. Thus, if educational and supportive practices be initiated during pregnancy, they can be beneficial in the prevention of postpartum depression.³⁴ The participation of primiparous mothers, with no history of pregnancy or abortion, made all the participants to be homogeneous in the experience of delivery and taking care of the newborn. In addition, this group of mothers needs to have various reviews and investigations due to their specific problems. The mothers who did not have a separate phone line and lived with their family and spouse reported to have difficulty and limitations in answering their peer mother's phone call. This can be one of the limitations of the study which was not in the control of the researcher. The results of the present study are related to primiparous mothers with term infants. It is recommended to have further studies on mothers with preterm infants. Another limitation was that the mothers did not have a face to face communication with their peer mothers; therefore,

taking into account the different supportive programs, it is recommended that further studies using different methodologies be conducted.

Conclusion:

According to the effectiveness of peer support in the prevention of postpartum depression, it is suggested that the health authorities provide conditions that in the health programs mothers and children can benefit from the peer mother advantages.

Ethical issues:

None to be declared.

Conflict of interest:

The authors declare no conflict of interest in this study.

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