





Original Article

## Effect of a Psycho education Interventions on Postpartum Health in North of IRAN

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### Abstract

**Background and objectives:** 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. The aim of this study was to evaluate the effectiveness of a psychoeducation intervention 48 hours before delivery on postpartum general health and to identify the potential role of family in reducing the incidence and severity of these disorders.

**Methods:** This randomized clinical trial was conducted on 80 pregnant mothers admitted to maternity ward of Shahid Sayyad Shirazi Hospital in Gorgan, Iran. Subjects were randomly divided into an intervention (n=40) and a control (n=40) group. Subjects in the intervention group and their spouses received education on postpartum mental health 48 hours before the estimated delivery date. The control group received no education. Data were collected using a demographic questionnaire and the general health questionnaire-28 (GHQ-28) at baseline and at 2<sup>nd</sup> and 4<sup>th</sup> week postpartum. Data were analyzed using SPSS (version 18) at significance level of 0.05.

**Results:** The mean age was 26.3±5.6 years in the intervention group and 27.9 ± 5.1 years in the control group. There was no significant difference between the groups in terms of age, pregnancy order, number of abortions, type of delivery and history of addiction at baseline. The total GHQ-28 score significantly decreased from baseline to the fourth week postpartum in both groups (P=0.001). There was no significant difference between the groups in terms of total GHQ-28 score reduction (P>0.05). In addition, there was no significant difference between the groups in terms of change in GHQ-28 subscale scores over time.

**Conclusion:** The findings of this study indicate that short-term educational intervention, 24-48 hours before delivery, is not effective in improving mental health in the postpartum period. Therefore, educational interventions should be conducted either weeks before or after delivery.

**Keywords:** Psychoeducation; psychotherapy; postpartum period; mental disorders; quality of life

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## INTRODUCTION

Pregnancy and postpartum period are important times in a woman's life in terms of psychological problems (1). Approximately 10-15% of women experience one psychological disorder, such as depression, anxiety or stress, during pregnancy or postpartum period (1, 2). It has been shown that undiagnosed psychological disorders during pregnancy and postpartum are risk factors for malnutrition, poor self-care, drug abuse and self-harm or child abuse (2, 3). Due to the alterations in serum steroids and peptide hormones in pregnancy, depression in pregnancy is prevalent and costly to manage. Women experience high level of stress after delivery, especially in the puerperium period. Therefore, this period makes women prone to psychological disorders (4, 5). The most common postpartum disorders are postpartum blues and postpartum depression (4, 6). Nearly 10-15% of women experience mild to moderate depression within first or second months postpartum (7). Postpartum depression is reported in 30-75% of primiparous women and can affect child health in 10-15% of the cases (8, 9). Postpartum depression has been reported to increase stress, anxiety and depression in couples and negatively affects couple relationship (10). Children of women with severe postpartum depression are at a high risk of long-term complications including developmental delay disorganized or insecure attachment, behavioral problems and low academic performance (11, 12). Moreover, a link has been found between postpartum depression and depression in children during late adolescence (12). Therefore, there is a need for efficient screening of high risk women for postpartum depression.

One of the hypotheses for the high prevalence of depression in the pregnancy and postpartum periods is lack of the ability to adapt with the maternal role (15). Being accompanied by spouse in the first 12 weeks postpartum and receiving psychological support and counselling were found to reduce the rate of depression in mothers

(16). It is important to assess psychological health and design interventions to prevent anxiety, depression and psychological disorders in pregnant women (17). Due to the importance of psychological well-being and family support in the prevention of mental health conditions in pregnancy and postpartum period, this study was aimed to assess the effects of an educational intervention including psychoeducation on postpartum health.

## MATERIALS AND METHODS

### Study subjects

This randomized controlled trial was conducted on women who gave birth through either caesarean section or normal vaginal delivery in the Department of Obstetrics and Gynecology of Shahid Sayyad Shirazi hospital in Gorgan (Northeast of Iran) from December 2016 to January 2017. All women who gave birth to healthy, live, singleton children in the mentioned hospital were included in the study. Exclusion criteria were major depressive disorder, psychosis or taking psychiatric medications and history of mental disorders or addiction in spouse. Subjects were interviewed by the researchers and the required data were obtained directly from the subjects based on self-reporting. Similarly, history of mental disorders and addiction status was obtained from subjects' spouses based on self-reporting.

### Ethical approval

The study was approved by the ethics committee of Golestan University of Medical Sciences, Gorgan, Iran. A written informed consent was obtained from all subjects and their spouses prior to participation.

### Sample size calculation

Sample size was calculated using the following equation considering 90% power and 95% confidence level:

$$n = \frac{2\delta^2 (Z_{1-\frac{\alpha}{2}} + Z_{1-\beta})^2}{(\mu_1 - \mu_2)^2}$$

Considering 20% drop-out, the sample size in each group was determined as 40 subjects (80 subjects in total). Out of a total of 91 registered women, 80 were enrolled in the study.

#### Data collection tools

Research instruments included a demographic questionnaire and the General Health Questionnaire-28 (GHQ-28), a widely used psychometry tool for screening and identifying psychological disorders in the general population (18). The GHQ-18 includes 28 questions under four subscales (seven items each): somatic, anxiety and insomnia, social dysfunction and severe depression subscales. The questionnaire items are scored based on a 4-point Likert scale (19). Scores higher than 23 indicate lack of general health. The severe depression subscale was included in the study assessments to determine the incidence of asymptomatic severe postpartum depression in the study population.

#### Study design

The subjects were randomly divided into an intervention (n=40) and a control (n=40) group based on a method described previously (19). The control group did not receive any educational intervention regarding postpartum psychological care but only received routine maternal education based on the national protocols. Subjects in the intervention group and their spouses received educational intervention 24-48 hours before the estimated delivery date (EDD). Sessions were held separately for men and women. The psychoeducation sessions for women were held in the delivery unit, while the sessions for men were held in a designated room. Education topics for women included general information regarding the postpartum period and psychological symptoms commonly

experienced in this period as well as management strategies to cope with the symptoms. Education topics for men included information regarding common psychological symptoms in the postpartum period and empathy and support methods. The sessions were held in groups of 4-5 subjects for 40 minutes based on the findings of previous studies that indicated the effectiveness of psychoeducation of 15-90 minutes (20-22). Pregnant women with uterine pain were instructed to leave the class and return as soon as the pain subsided. All subjects were asked to return for follow up two and four weeks after delivery. All questionnaires were filled by the subjects at baseline and at each follow up visit. If a subject could not attend the follow up visits, the questionnaires were filled through phone call.

#### Statistical analysis

Data were analyzed using the SPSS software (version 18). Mean, median and standard deviation (SD) were used to describe variables. The Kolmogorov-Smirnov test was used to assess the normal distribution of continuous variables. Continuous variables were compared between groups using independent t-test. Comparison of continuous variables between time points was performed using one-way repeated measures analysis of variance (ANOVA) and paired sample t-test for pairwise comparison. The chi-square or Fisher's exact test were used for the comparison of categorical variables between groups. Multivariate linear regression and correlation coefficient were also used. All statistical analyses were performed at significance of 0.05.

#### RESULTS

The mean age of the subjects in the intervention and control groups was  $25.7 \pm 6.0$  and  $27.9 \pm 5.1$  years, respectively. There was no significant difference between the groups in terms of age ( $P=0.081$ ), pregnancy

order ( $P=0.148$ ) and mean number of abortions ( $P=0.853$ ). Overall, we found no significant difference between the groups in terms of baseline characteristics (Table 1).

**Table 1. Baseline characteristics of the study subjects**

| Variable                                 |                         | Intervention |            | Control   |            | P-value |
|--|-------------------------|--------------|------------|-----------|------------|---------|
|  |                         | Frequency    | Percentage | Frequency | Percentage |         |
| Type of delivery                         | Normal vaginal delivery | 35           | 87.5       | 33        | 82.5       | 0.531   |
|  | C-section               | 5            | 22.5       | 7         | 27.5       |         |
| Positive history of addiction in spouses |                         | 8            | 20.0       | 9         | 22.5       | 0.785   |
| Positive history of addiction in mothers |                         | 4            | 10.0       | 6         | 15.0       | 0.737†  |

Comparisons were made using chi-square.

† The Fisher's exact test was used for the comparison.

The prevalence of abnormal GHQ-28 scores was significantly higher in mothers with history of addiction compared to non-addict mothers (48.8% vs. 33.2% respectively,  $P=0.001$ ). Changes in the GHQ-28 scores over time are presented in table 2. In both groups, there was a significant difference in GHQ-28 scores at 4<sup>th</sup> week postpartum compared to baseline ( $P=0.001$ ). Comparison of GHQ-28 subscale scores showed a significant difference between the anxiety subscale

and other subscales at baseline ( $P=0.001$ ) and between the depression subscale and other subscales at 4<sup>th</sup> week postpartum ( $P=0.007$ ). Mean depression, anxiety and somatic and social dysfunction scores significantly changed from baseline to 4<sup>th</sup> week postpartum in both groups, but the depression score change was not significant in the study groups (Table 2). The power ranged from 0.52 to 0.61 for the chi-square test and from 0.50 to 0.91 for repeated measures ANOVA.

**Table 2. Comparison of GHQ-28 subscale scores between groups over time**

| Variable                            | Time point                      | Intervention group        | Control group             | P-value |
|-------------------------------------|---------------------------------|---------------------------|---------------------------|---------|
| <b>General psychological health</b> | Baseline                        | 33.95 ± 4.39              | 34.52 ± 8.36              | 0.560   |
|                                     | 2 <sup>nd</sup> week postpartum | 33.47 ± 4.21              | 33.34 ± 8.30              | 0.550   |
|                                     | 4 <sup>th</sup> week postpartum | 25.2 ± 5.38               | 25.24 ± 7.90              | 0.590   |
| <b>Somatic dysfunction</b>          | Baseline                        | 8.15 ± 2.88               | 8.62 ± 3.48               | 0.450   |
|                                     | 2 <sup>nd</sup> week postpartum | 7.15 ± 2.88               | 7.65 ± 3.43               | 0.550   |
|                                     | 4 <sup>th</sup> week postpartum | 6.10 ± 2.77               | 6.65 ± 5.12               | 0.540   |
| <b>Social dysfunction</b>           | Baseline                        | 4.32 ± 1.50               | 5.12 ± 3.00               | 0.340   |
|                                     | 2 <sup>nd</sup> week postpartum | 3.77 ± 1.73               | 4.55 ± 2.90               | 0.320   |
|                                     | 4 <sup>th</sup> week postpartum | 2.40 ± 1.21               | 3.00 ± 2.50               | 0.580   |
| <b>Depression</b>                   | Baseline                        | 6.42 ± 2.10               | 6.80 ± 2.80               | 0.560   |
|                                     | 2 <sup>nd</sup> week postpartum | 8.42                      | 9.47 ± 2.20               | 0.310   |
|                                     | 4 <sup>th</sup> week postpartum | 12.50                     | 13.10 ± 3.20              | 0.28    |
| <b>Anxiety</b>                      | Baseline                        | 15.05                     | 14.80 ± 3.10              | 0.230   |
|                                     | 2 <sup>nd</sup> week postpartum | 15.00                     | 14.30 ± 3.50              | 0.300   |
|                                     | 4 <sup>th</sup> week postpartum | 5.25                      | 5.00 ± 4.80               | 0.360   |
| <b>Total GHQ-28 score</b>           | Baseline                        | 33.95 ± 4.39 <sup>a</sup> | 34.52 ± 8.36 <sup>b</sup> | 0.001*  |
|                                     | 2 <sup>nd</sup> week postpartum | 33.47 ± 4.21              | 33.34 ± 8.30              |         |
|                                     | 4 <sup>th</sup> week postpartum | 25.2 ± 5.38 <sup>a</sup>  | 25.24 ± 7.90 <sup>b</sup> |         |

Results are presented as mean ± SD.

Comparisons were made using one-way ANOVA and paired sample t-test for pairwise comparison.

\* Statistically significant difference. <sup>a</sup> P=0.001, <sup>b</sup> P=0.001.

## DISCUSSION

This study was conducted to assess the effectiveness of a psychoeducation intervention on general health of mothers after delivery based on the GHQ-28 questionnaire. The results indicated that the psychoeducation intervention in the first 24-48 hours postpartum did not have a significant effect on general health of mothers. However, we found that the general health of mothers with history of

addiction was significantly higher than that of non-addict counterparts. This finding might negatively affect the intervention outcome in the mothers with a history of addiction. Therefore, it is recommended to offer social support instead of psychoeducation for female addicts in order to reduce anxiety.

Previous studies have reported that life skills education has a role in maternal

mental health and reducing postpartum depression. In all studies, educational interventions were offered either during pregnancy or in the first weeks of postpartum. A study conducted on 60 newly delivered mothers in Iran reported that an eight-week self-presentation educational intervention for 60-90 minutes twice weekly at 4-8 weeks postpartum significantly reduced depression scores (23). In another study on 54 women in Iran, six sessions (45-90 minutes) of problem solving skills education for nine weeks significantly reduced depression scores, based on the Beck's depression inventory (24). Similarly, another study reported that 20 sessions (60-90 minutes) of life skills education significantly improved GHQ-28 scores (3). Unlike the previous studies, the present study consisted of one session of psychoeducation 24-48 hours before delivery. Lack of significant findings in our study might indicate that psychoeducation for duration of 40 minutes near EDD might not have a significant effect on postpartum depression.

In our study, the depression subscale scores significantly increased in the 4<sup>th</sup> week postpartum in both groups, while more than 30% of the subjects had abnormal GHQ-28 scores. The scores were significantly higher in women with a positive history of addiction compared to non-addicts. Inconsistent with our findings, a previous study in Iran found that 15.5% of women experienced postpartum depression and no significant association between personal characteristics and postpartum depression (25). In another study, the prevalence of postpartum depression was reported to be 20% and no relationship was reported between postpartum depression and age, educational level and birth order (24). The prevalence of postpartum depression was reported to range from 30 to 75% among primiparous women (26). Unlike most previous studies that were population studies with the aim of assessing the prevalence and risk factors of postpartum depression, the

present study was a clinical trial with the aim to assess the effect of psychoeducation on postpartum depression; therefore, the sample size was calculated based on the effect size not prevalence. It is also noteworthy to mention that due to the high prevalence of postpartum depression, the results might not be inferable to the whole population as the study population was not representative of the general population. These findings should be confirmed in studies with a larger sample size or in multicenter studies.

We observed a significant reduction in anxiety subscale scores at 4<sup>th</sup> week postpartum in both groups. This finding might indicate that 4<sup>th</sup> week postpartum is an ideal time for educational interventions. However, given the high incidence of postpartum depression during the first and second months postpartum, preventive interventions might be more effective if conducted during pregnancy. Therefore, it is recommended that these interventions be performed either few months before delivery or four weeks after delivery.

In our study, the power analysis revealed that most ANOVA tests including the comparison of total GHQ-28 scores between groups was of high power ( $>0.80$ ), while the chi-square test had low power. This implies that regardless of the matching, the findings of this study did not have the required power to be generalized to the whole population, while the significant change in GHQ-28 could be generalized to the whole population. This might also justify the lack of significant change in the GHQ-28 subscale scores in the groups. Another limitation of this study was the short follow up duration and not considering confounding factors for postpartum depression, including maternal education, occupation and socioeconomic status. Therefore, it is recommended to conduct future studies on larger populations while assessing the effects of confounding factors on the outcome of psychoeducation intervention on postpartum depression.

## CONCLUSION

The findings of this study indicate that short-term educational intervention, 24-48 hours before delivery, is not effective in improving mental health in the postpartum period. Therefore, educational interventions should be conducted either weeks before or after delivery. We found that the depression scores in both groups significantly reduce at 4<sup>th</sup> week postpartum.

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## DECLARATIONS

### Funding

Not applicable.

### Ethics approvals and consent to participate

The study was approved by the ethics committee of Golestan University of Medical Sciences, Gorgan, Iran. A written informed consent was obtained from all subjects and their spouses prior to participation.

### Conflict of interest

The author declares that there is no conflict of interest regarding publication of this article.

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