Effectiveness of psycho-educational counseling on anxiety in preeclampsia

Eficácia do aconselhamento psicoeducacional sobre a ansiedade na pré-eclâmpsia

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Abstract

Introduction: Preeclampsia is a serious complication during pregnancy that not only influences maternal and fetal physical health, but also has maternal mental health outcomes such as anxiety. Prenatal anxiety has negative short- and long-term effects on pre- and postpartum maternal mental health, delivery, and mental health in subsequent pregnancies.

Objective: To investigate the effectiveness of individual psycho-educational counseling on anxiety in pregnant women with preeclampsia.

Methods: This was a randomized, intervention-controlled study involving two governmental hospitals in the municipality of Sirjan, Kerman, from January 30 2017 to March 31 2017. A total of 44 pregnant women with preeclampsia were assessed. The women were randomized into two groups: control (n=22) and intervention (n=22). The intervention consisted of two sessions of individual psycho-educational counseling. The level of anxiety was measured using the Spielberger State-Trait Anxiety Inventory (STAI) as pretest before the first session and as posttest after the second session during the hospitalization period.

Results: There was a significant reduction in the anxiety level after the counselling sessions in the intervention group (p<0.005). In addition, there was a slight increase in the anxiety level in the control group after the study.

Conclusion: According to the results, psycho-educational counseling can significantly reduce the anxiety level in pregnant women with preeclampsia. Therefore, it is recommended that healthcare providers provide this type of therapeutic intervention for pregnant women after hospitalization, in order to reduce their anxiety level and its subsequent negative outcomes.

Clinical trial registration: IRCT2017082029817N3.

Keywords: Psycho-educational counseling, anxiety, preeclampsia, pregnant women.

Resumo

Introdução: A pré-eclâmpsia é uma complicação séria durante a gravidez que não apenas influencia a saúde física da mãe e do feto, mas também tem consequências para a saúde mental materna, por exemplo ansiedade. A ansiedade pré-natal tem efeitos negativos e de longo prazo sobre a saúde mental da mãe antes e após o parto, sobre o parto, assim como sobre a saúde mental em gestações subsequentes.

Objetivo: Investigar a eficácia do aconselhamento psicoeducacional individual com relação aos níveis de ansiedade em gestantes com pré-eclâmpsia.

Métodos: Este foi um estudo randomizado, controlado, que envolveu dois hospitais governamentais na cidade de Sirjan, Kerman, de 30 de janeiro de 2017 a 31 de março de 2017. Um total de 42 gestantes com pré-eclâmpsia foram avaliadas. As mulheres foram randomicamente divididas em dois grupos: controle (n=22) e intervenção (n=22). A intervenção consistiu de duas sessões de aconselhamento psicoeducacional individual. O nível de ansiedade foi medido usando-se o Spielberger State-Trait Anxiety Inventory (STAI) antes da primeira sessão (pré-teste) e após a segunda seção (pós-teste), durante o período de hospitalização.

Resultados: Houve uma redução significativa no nível de ansiedade após as sessões de aconselhamento no grupo intervenção (p<0,005). Além disso, houve um discreto aumento no nível de ansiedade no grupo controle após o estudo.

Conclusão: De acordo com os resultados deste estudo, o aconselhamento psicoeducacional pode reduzir de forma significativa o nível de ansiedade em gestantes com pré-eclâmpsia. Assim, recomenda-se que os profissionais de saúde ofereçam esse tipo de intervenção terapêutica para gestantes após a hospitalização, a fim de reduzir o nível de ansiedade e seus desfechos negativos.

Registro do ensaio clínico: IRCT2017082029817N3.

Descritores: Aconselhamento psicoeducacional, ansiedade, pré-eclâmpsia, gestantes.

Introduction

Pregnancy is usually considered a happy phase of the woman's life.[1] This physiological and natural phenomenon is a pleasant and satisfying experience for many mothers. Although usually blissful, pregnancy is also a stressful period for many women, and some psychologists consider it as a period of emotional crisis.[2] Exposure to different life crises and stressful conditions can lead to anxiety; pregnancy is one of these stressful conditions. In pregnancy, there are many stressors for fetal health that make a person susceptible to mental disorders such as anxiety.[3] Preeclampsia is one of these stressors and is an independent risk factor for the development of anxiety.[4] A pregnancy-related disorder, preeclampsia may affect all organs in the body and is diagnosed in the presence of high blood pressure and excess protein in the urine (proteinuria) after 20 weeks of pregnancy. After diagnosis of this condition, immediate treatment and examination of the mothers, as well as prevention of its complications, such as maternal seizure, are of great importance.[5] Preeclampsia is associated with high maternal mortality and serious complications, as well as risk of perinatal death, premature birth, and intrauterine growth restriction. Even though many studies have investigated preeclampsia, its causative agents are still unknown.[6] Because of the long-term hospitalization required for diagnosis, treatment or follow-up of the patients, as well as the possible occurrence of unpredictable and uncontrollable events, such as preterm labor and fetal complications, this condition represents a major burden on pregnant women. In addition, unexpected medical interventions, and sometimes fear of death, also lead to anxiety and severe fear in mothers.[7]

Pregnant women with preeclampsia often present more health complaints compared to those with uncomplicated pregnancies, and they may suffer from both psychological and physical problems.[8] Additionally, mean anxiety scores have been shown to be significantly increased in women with preeclampsia.[5] In the study by Rigó et al., anxiety levels in pregnant women with preeclampsia were significantly higher than those in healthy pregnant women.[9] Cetin et al. reported that the frequency of symptoms of mental disorders in pregnant women with preeclampsia was higher than those found in the healthy women. In addition, the highest anxiety score and insomnia severity index were observed in women with severe preeclampsia. Also, they found out that preeclampsia had a negative effect on mental and emotional health and believed that obstetricians should recommend an appropriate mental health care to their patients with preeclampsia at the bedside and in the postpartum period.[10]

Pregnancy-related anxiety is of great importance because it causes various complications. Some researchers believe that severe anxiety during pregnancy may affect the relationship between the mother and the infant and reduce the mother's ability to play her maternal roles, thus influencing the quality of the mother's life.[11,12]

Anxiety is a psychopathological condition that even in the absence of clinical symptoms may have short- and long-term effects on pregnancy (mother and fetus). Common outcomes include preterm labor, low birth weight, lack of prenatal care, reduction in breastfeeding initiation, and postpartum depression and anxiety.[13-18] Maternal stress in pregnancy has negative postpartum side effects and influences children's physical and mental development. At age 2, children of more anxious mothers showed lower mental health scores.[19] Even though there is no direct relationship between the maternal and the fetal nervous systems, maternal emotional and mental states have significant effects on fetal responses and growth. In addition, distortion of the mother's nervous system may disable the fetus to adapt to the maternal-fetal environment.[20,21]

Providing mental health interventions for the pregnant woman is one of the social determinants of mental health and is of great importance: the mother is the first to give affection and love to the child, two essential components of security for the emotional development of children; in other words, maternal affection is the basis for the development of family emotional relationships. The emotional development of children depends on the quality of this affection, and its profound and permanent effects on the child's mental health will be quite evident in adulthood. Therefore, maternal mental health is of great importance, and mothers are expected to be able to deal with problems and to take care of the baby.[2]

Taking care of women with risk factors for anxiety as well as counseling and referring them to more advanced diagnosis and treatments can improve their quality of life and reduce maternal and fetal outcomes and mortality. In this regard, midwives play a very important role as maternal mental-physical supporters. Midwives are responsible for relaxing mothers and reducing their anxiety during pregnancy. By knowing the warning signs of mental disorders, midwives contribute to a timely diagnosis and to the mothers' referral to anxiety treatment programs.[22]

Considering the effects of anxiety on mother and fetus, especially in pregnant women with preeclampsia, this study aimed to evaluate the effectiveness of psycho-educational counseling on anxiety in pregnant

women with preeclampsia at two public hospitals in the municipality of Sirjan, Kerman. It is expected that the intervention will decrease anxiety levels in the sample and consequently improve pregnancy outcomes and the mothers' quality of life.

Materials and methods

In this clinical trial, the effectiveness of psycho-educational counseling on anxiety in pregnant women with preeclampsia admitted to two public hospitals of the municipality of Sirjan in 2016 was investigated. The research population was selected among pregnant women with preeclampsia admitted to the obstetrics and gynecology wards of Imam Reza and Dr. Gharazi hospitals, in Sirjan. The inclusion and eligibility criteria were as follows: pregnant woman with preeclampsia, gestational age ≥20 weeks, low risk pregnancy, ability to understand and speak Persian, and no history of drug use or smoking. Exclusion criteria were: incidence of pregnancy complications (bleeding, diabetes, preterm labor, etc.), occurrence of psychological trauma and/or major stress during the intervention period, non-attendance at training sessions, and history of specific mental illness.

Sample size was calculated according to Jokar & Rahmati, using the sample size formula. Considering a confidence interval of 95%, test power of 90%, accuracy of 2, and 15% probability of withdrawal, the sample size was estimated at a minimum of 22 patients in each group (total of 44 cases).[23]

This research is a parallel study with 1:1 allocation ratio involving 44 pregnant women with preeclampsia divided into two groups: control (n=22) and intervention (n=22). Random sampling was performed using block randomization in two stages. In the first stage, sampling was performed on odd days at the first hospital and on even days at the second hospital. In the second stage, the subjects were divided into the intervention and control groups. Data were collected using a questionnaire consisting of two parts, one covering demographic characteristics and the Spielberger State-Trait Anxiety Inventory (STAI). Demographic characteristics included maternal age, education level, occupation, number of pregnancies, number of deliveries, abortion, age of pregnant woman, intended pregnancy and emotional relationships with husband.

The Spielberger State-Trait Anxiety Questionnaire (STAI) was designed by Spielberg in 1970 and revised in 1983. It includes 20 questions answered using a 4-point Likert scale ranging from 0 to 3 (0 = minimal, 1 = mild, 2 = moderate, 3 = severe). Total scores may range

from 20 to 80 and are classified as normal (0-19), mild anxiety (20-40), moderate anxiety (41-60) and severe anxiety (61-80).[24,25] In 1993, Mahram standardized the questionnaire in Iran, with 0.91 reliability through Cronbach's alpha formula.[26] The reliability and validity of this questionnaire have been repeatedly measured.[27]

This study endorsed and followed the Consolidated Standards of Reporting Trials (CONSORT) statement and checklist. The protocols of this study were approved by the ethics committee of the Kerman University of Medical Sciences (IR.KMU.REC.1395.556). This study has been registered in the Iranian Registry of Clinical Trials (IRCT) with registration code IRCT2017082029817N3. After receiving a referral form from the Faculty of Nursing and Midwifery, Kerman University of Medical Sciences, the head of Imam Reza and Dr. Gharazi hospitals of Sirjan allowed the conduction of the study. Data were collected from January 30 2017 to March 31 2017 (2 months).

The objectives of the study were explained by the researcher to the participants, and those who signed the consent form were included. Before any procedure, including injection of magnesium sulfate, the mothers' anxiety level was measured using the STAI questionnaire. Pregnant women with scores ranging from 20 to 60 were selected and divided into the control and intervention groups as described above, i.e., using block randomization. All the women who entered the study filled and signed informed consent forms.

The control group received the service's routine care. The intervention group, in addition to receiving routine care, participated in two sessions of individual psycho-educational counseling (lasting 45 minutes each) with a 24-hour interval.[28] The intervention was conducted by a certified master student of Counselling in Midwifery, under the supervision of a medical doctor who was assistant professor of Guidance and Counselling at the Kerman University of Medical Sciences, Midwifery Department. In the first session, pregnant women were informed about preeclampsia, its signs and symptoms, diagnosis and treatments, evaluation of the fetuses of mothers with preeclampsia and safety of assessments and procedures. The second session focused on teaching and practicing five anxiety self-management techniques in the context of their disease at an emergency hospital ward setting.

After the last session, the questionnaire was once again completed by both groups[29] and the level of anxiety was measured. There were no drop-outs in this intervention. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 22 and were described using central indices, distribution, frequency and percentage. Demographic variables were

compared between the groups using the chi-square and independent *t* tests. Anxiety scores were compared between the groups using analysis of covariance (ANCOVA). Because the difference between mean pretest scores obtained in the control and intervention groups was significant, posttest scores were compared using ANCOVA. Significance was set at p=0.05. The psycho-educational contents of the two sessions were approved by a psychiatry and included reassurance, problem-solving skills training, patient justification, relaxation training and positive emotions.[30,31]

Results

Table 1 shows the frequency distribution and percentages of demographic characteristics in the intervention and control groups: the two groups were similar in terms of demographic characteristics that may influence maternal anxiety during pregnancy, with no significant differences between the groups.

Comparison of mean anxiety scores between the intervention and control groups before and after the intervention, as shown in Table 2, illustrates that

Table 1 - Frequency distribution and percentages of demographic characteristics in the control and intervention groups

Variables	Intervention, n (%)	Control, n (%)	Test	p
Age (years)				
17-30	11 (50)	11 (50)	Chi-square	1
31-46	11 (50)	11 (50)		
Education				
Primary education	8 (36.4)	7 (31.8)		
Secondary education	9 (40.9)	10 (45.5)	Chi-square	0.94
Higher education	5 (22.7)	5 (22.7)		
Occupation				
Housewife	18 (81.8)	18 (81.8)	Fisher	1
Employed	4 (18.2)	4 (18.2)		
Number of pregnancies				
1	6 (27.3)	7 (31.8)		
2	10 (45.5)	10 (45.5)	Chi-square	0.92
≥3	6 (27.3)	7 (31.8)		
Number of deliveries				
0	9 (40.9)	11 (50.0)		
1	10 (45.5)	6 (27.3)	Fisher	0.48
≥2	3 (13.6)	5 (22.7)		
Abortion				
0	13 (59.1)	13 (59.1)		
1	7 (31.8)	8 (36.4)	Fisher	1
≥2	2 (9.1)	1 (4.5)		
Age of pregnant woman (years)				
25-31	8 (36.4)	10 (45.5)	Chi-square	0.54
32-38	14 (63.6)	12 (54.5)		
Emotional relationships				
Good	17 (77.3)	16 (72.7)	Chi-square	0.72
Fair	5 (22.7)	6 (27.3)		
Type of pregnancy				
Intended	19 (86.4)	18 (81.8)	Fisher*	1
Unintended	3 (13.6)	4 (18.2)		

* Fisher's exact test.

after holding counseling sessions, this difference was significant. There was no data normality in the pretest step. Therefore, Mann-Whitney's test was applied to check the relationship between mean anxiety scores obtained in the two groups before the intervention. For the same reason, ANCOVA was used after the intervention to control for inconsistency of data normality between pretest and posttest results.

Comparison of pre- and posttest mean anxiety scores in the intervention and control groups (Table 3) shows that the psycho-educational intervention led to a significant reduction of anxiety. Conversely, in the control group, not only did anxiety not reduce, it slightly increased after the intervention.

Discussion

Preeclampsia, as an emergency event that affects 1.2 to 27% of pregnancies, is an important stressor in nulliparous as well as multiparous women.[40-42] Contrariwise, anxiety can increase the risk of preeclampsia in pregnancy.[43] The main purpose of this research was to determine the effects of psycho-educational counseling on anxiety levels in pregnant women with preeclampsia. The findings showed that the mean anxiety scores in pregnant women with preeclampsia in the intervention group before and after the intervention were 51.36±5.52 and 46.09±8.44,

respectively, indicating a reduction in anxiety levels in pregnant women with preeclampsia. The studies of Asghari et al. on 60 women[32] and of Chao-Min on 120 women with preeclampsia[33] showed that cognitive-behavioral therapy, health education and mental nursing could significantly reduce the level of anxiety. In the study by Bastani et al., relaxation training decreased the anxiety of pregnant women significantly,[34] which is consistent with the present study.

Anxiety side-effects in pregnant women suffering from preeclampsia are often caused by concerns about fetal health, hospitalization, and lack of sufficient knowledge about the therapeutic interventions performed on them in the ward that can threaten fetal life, as well as somatic symptoms related to their state anxiety.[5,44-46] The contents of psycho-educational counselling in this research were designed in such a way as to enhance the level of knowledge of pregnant women about the pathophysiology of their acute problem, to familiarize them with the therapeutic services offered, to reassure them about their own health and fetal health (provided the problem does not progress to eclampsia or becomes rarely complicated), to train problem-solving skills as well as anxiety management techniques, and patient's appropriate justification to the problem. The above mentioned acquired abilities and positive attitudes may reduce the level of anxiety and promote maternal mental health during pregnancy.[47] The study by Delaram & Soltanpour on the effectiveness of counseling in the

Table 2 - Comparison of mean anxiety scores between the intervention and control groups before and after the intervention

Test	Intervention Mean ± SD	Control Mean ± SD	Test	p
Pretest	51.36±5.52	47.36±3.59	Mann-Whitney	0.0001
	52.50	47		
Posttest	46.09±8.44	48.5±63.11	ANCOVA	0.001
	50	50		

ANCOVA = analysis of covariance; SD = standard deviation.

Table 3 - Comparison of the pre- and posttest mean anxiety scores in the intervention and control groups

Group	Intervention Mean ± SD	Control Mean ± SD	Test	p
Intervention	51.36±5.52	47.36±3.59	Wilcoxon*	0.0001
	52.50	50		
Control	47.36±3.59	48.5±63.11	Wilcoxon	0.77
	47	50		

SD = standard deviation.
* Wilcoxon signed-ranks test.

third trimester of pregnancy showed that counseling can reduce maternal anxiety.[35]

Regardless of the topics covered by psycho-educational counseling, this type of intervention has shown successful influences on different types of anxiety disorders. Rummel-Kluge et al. found that this intervention was effective in 77% of the 622 patients with anxiety disorders, and therapeutic costs were significantly reduced.[36] Conversely, it is interesting that prenatal and intrapartum methods used to decrease anxiety could reduce postpartum anxiety and cause a positive attitude towards childbirth.[37,38] Not all studies, however, have found a reduction in postpartum depression.[39]

Conclusion

It seems that psycho-educational counseling can be generalized and is applicable to other similar settings. This method has shown positive effects in reducing the level of anxiety as well as improving the mental health of pregnant women with preeclampsia.

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Disclosure

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