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Original Article / *Özgün Araştırma*

Effects of Antenatal Education Program on Postpartum Functional Status and Depression

Antenatal Eğitimin Doğum Sonrası Fonksiyonel Statü ve Depresyona Etkisi

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Abstract

Objective: The aim of the study was to determine the effects of antenatal education on the functional status and depression in women who were in the 6th postpartum week and in the 6th postpartum month.

Methods: The nonrandomized, post-test–control group design was used. The study was conducted on pregnant women who applied to the prenatal center of a hospital in Istanbul. The participants in the education group attended the antenatal education program, whereas those in the control group received routine antenatal care. The study was completed with 65 participants (education group=31 and control group=34). Data collection was performed using the Demographic Questionnaire, the 6th Week Assessment Form, the Inventory of Functional Status after Childbirth (IFSAC), and the Edinburgh Postpartum Depression Scale (EPDS).

Results: The results showed that there was no significant difference in terms of both the EPDS scores and IFSAC scores between the groups at both the 6th week and the 6th month (p>0.05).

Conclusion: It was found that antenatal training may not be effective in decreasing postpartum depression and in improving the postpartum functional status.

Keywords: Antenatal education, postpartum depression, postpartum functional status, nursing

Öz

Amaç: Araştırmanın amacı, antenatal eğitimin, kadınların doğum sonrası 6. hafta ve 6.aydaki fonksiyonel durumlarına ve depresyon durumlarına etkisini değerlendirmektir.

Yöntemler: Araştırma, non-randomize, son test kontrol gruplu tasarım olarak uygulandı. Çalışmanın katılımcıları, İstanbul ilindeki bir hastanenin gebe izlem polikliniğine başvuran gebe kadınlardı. Eğitim grubundaki katılımcılar, antenatal eğitim programına katıldı, kontrol grubundaki katılımcılar ise rutin antenatal bakım aldı. Çalışma 65 katılımcı (eğitim grubu =31 ve kontrol grubu=34) ile tamamlandı. Veriler demografik soru formu, 6. hafta değerlendirme formu, Doğum Sonrası Fonksiyonel Durum Envanteri (DSFDE) ve Edinburg Postpartum Depresyon Ölçeği (EPDÖ) kullanılarak elde edildi.

Bulgular: Katılımcıların doğum sonrası fonksiyonel durum skorlarının ve doğum sonrası depresyon puanlarının, hem 6. haftada hem de 6. ayda gruplar arasında benzerlik gösterdiği ve istatistiksel olarak anlamlı bir fark olmadığı belirlendi (p>0,05).

Sonuç: Antenatal eğitimler doğum sonrası fonksiyonel durumu artırmada ve doğum sonu depresyonu azaltmada etkili olmayabilir.

Anahtar Kelimeler: Antenatal eğitim, doğum sonu depresyon, doğum sonrası fonksiyonel durum, hemşirelik

INTRODUCTION

Antenatal care is a broad concept that covers the period between preconception and birth. The purpose of antenatal care is to identify maternal risks and make appropriate interventions toward risks, to increase the well-being of the mother and infant, and to ensure the birth of a healthy infant. Another purpose of antenatal care is to provide antenatal education on pregnancy, birth, and parenthood for the woman and her family.

Antenatal education is usually provided by midwives, nurses, and gynecologists (1-4). Antenatal education deals with physical, psychological, social, and cultural dimensions and prepares the woman and her family for childbirth and the postnatal period. Antenatal education involves topics such as pregnancy, labor and delivery, puerperium and its features, breastfeeding, baby care, and transition to parenthood (2, 5). In the current literature, it is stated that antenatal education positively affects breastfeeding attitudes of women (6-8), enhances quality of life (1, 9), provides greater knowledge on the hazards of smoking (10), and has a positive influence on the adaptation to new situations, on birth, and on the perception of labor (7).

Several studies in Turkey have assessed the influence of antenatal education. In the study by Altıntuğ and Ege (11), it was reported that the trainings given during the final period of pregnancy and immediately following the delivery prepare mothers for discharge and enhance their postpartum quality of life (11). Coşar and Demirci (12), it was found that pregnancy preparation training based on

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the Lamaze philosophy positively influences women's adaptation process to childbirth and perceptions of birth. Furthermore, to our knowledge, small numbers of studies have evaluated the impact of antenatal education on the postpartum functional status (13) and postpartum depression (PPD) (14-17). In Turkey, no study has directly investigated the effect of antenatal education on PPD.

The aim of the present study was to assess the effects of an antenatal education program on the functional status and depression in women who were in the 6th postpartum week and the 6th postpartum month.

METHODS

Design

The study had a nonrandomized, post-test-control group design and was conducted on pregnant women who applied to the prenatal center of a hospital in Istanbul during March 2012 to January 2014.

Hypothesis

Pregnant women receiving antenatal education will have better primary outcomes at the 6th postpartum week and the 6th postpartum month than those not receiving antenatal education.

Primary outcomes:

1. The postpartum functional status was evaluated by the Inventory of Functional Status after Childbirth (IFSAC).

The postpartum functional status is associated with physical and social adaptation. Fawcett et al. (18) described the postpartum functional status as returning to one's prenatal functional status and regaining the ability to successfully perform domestic chores, social activities, newborn care responsibilities, self-care activities, and professional activities (18).

2. PPD was evaluated by the Edinburg Postpartum Depression Scale (EPDS).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), PPD is defined as the continuance of at least 5 symptoms, which may include insomnia/hypersomnia, psychomotor delay, tiredness, sensing of unhappiness or delinquency, reduced condensation, appetite changes, and suicidal thought for 2 weeks or longer. Symptoms of PPD can begin as early as in the 4th week following labor and can persist for 1 year (19).

Participants and Procedure

The study sample consisted of all pregnant women who applied to the prenatal center of the hospital. The center where the study was conducted was preferred because it had no antenatal education classes, although the clinic provides prenatal care to an average of 200 women daily.

The antenatal education program (AEP) was prepared by the authors. AEP was announced through banners and brochures in hospitals. The education group (EG) was thus made up of pregnant women who willingly registered in AEP. The participants who registered in AEP, met the sampling criteria, and completed the 4-week program constituted EG. The control group (CG) consisted of pregnant women who received routine antenatal care, met the sampling criteria, and did not join AEP. A total of 116 women (EG=59 and CG=57) were recruited. The study

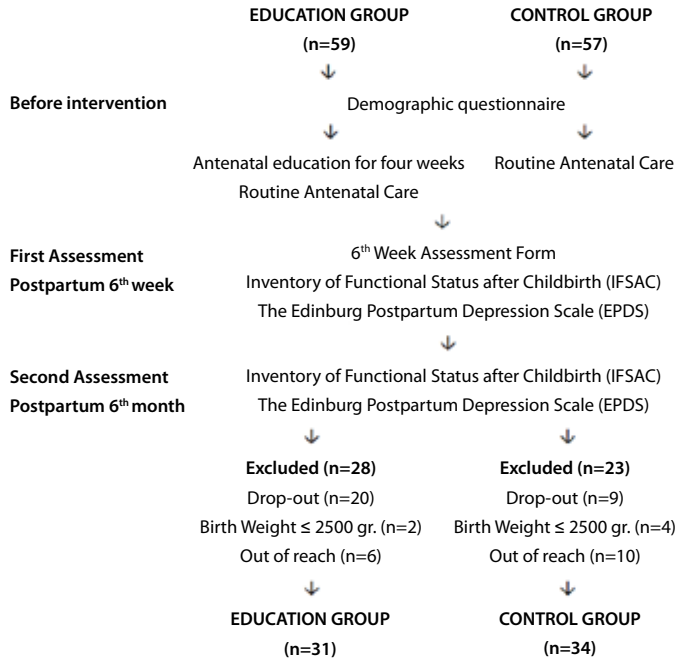

Figure 1. Study flow chart

was completed with 65 participants (EG=31 and CG=34). Fifty-one women were excluded from the study because of the following: neonatal birth weight≤2500, the existence of anomalies in the newborn, not attending entire AEP sessions, or being out of reach during the follow-up period. The study flow chart is provided in Figure 1.

Sample Size Calculation

The participants were chosen through simple random sampling. The sample size was calculated with power analysis. At the end of the pilot study, it was expected that antenatal education will make a difference of 0.26±0.22 in functional status scores. In this study, the amount of type-I error was taken as 0.05 and the power of the test was taken as 0.80. It was also estimated that 15 participants would be included in each group (20).

Inclusion Criteria

Participants who were aged over 18 years, were in the 20th-36th gestational weeks, were primipara, were married, did not have pregnancy-related complications (preeclampsia, diabetes, and others), or were not diagnosed with depression in the pre pregnancy period were included in the study.

Implementation of AEP

Antenatal education program, which took 4 weeks (12 h), was performed by the authors in the pregnancy education room of the hospital. In education sessions, power point presentations, verbal lectures, videos, demonstrations using infant care materials, and discussion and application methods were used.

Content of AEP

1st Week: Basic Knowledge of Pregnancy

The 1st week of AEP covered fundamental topics related to pregnancy, such as the development of pregnancy, physical and physiological changes, prenatal tests, and abnormal signs during pregnancy.

2nd Week: Care During Pregnancy
The 2nd week covered topics such as nutrition, physical activity, exercise, sexuality, symptoms of pregnancy, and the management of pregnancy symptoms.

3rd Week: Childbirth
The 3rd week covered topics such as preparing a birth plan, the physiology of childbirth, symptoms of going in to labor, interventions employed during labor, and coping with pain (relaxation, focusing, breathing exercises, and others).

4th Week: Postpartum Period
The 4th week included topics such as postpartum nutrition, exercise, sexuality, breastfeeding, infant care, family planning, and physical and emotional changes. It also covered the topics of "maternity blues" and "PPD" recognition and symptoms and strategies for coping with this condition.

Data Collection
Data were gathered in 3 stages, which included the prenatal period, 6th postnatal week, and the 6th postnatal month. The data of EG and CG were collected simultaneously. Data collection was performed using the Demographic Questionnaire (DQ), the 6th Week Assessment Form, IFSAC, and EPDS.

Demographic Questionnaire: The form consisted of questions prepared by the researchers in order to evaluate the socio-demographic characteristics of women (maternal age, maternal education, duration of marriage, and partner age).

6th Week Assessment Form: The form was prepared by the authors in order to assess the type of delivery and physical problems experienced by the women.

Inventory of Functional Status after Childbirth: IFSAC was developed by Fawcet et al. (18) in order to assess the functional recovery after childbirth. The Turkish validity and reliability study of the inventory was performed by Özkan and Sevil (21). IFSAC is a 4-point Likert-type scale consisting of 36 items. It is possible to get scores between 0 and 4 from the scale. Higher scores indicate that the functional status is satisfactory.

In our study, the Cronbach's alpha internal consistency coefficients of the scale at the 6th postpartum week and the 6th postpartum month were found to be 0.70 and 0.73, respectively.

Edinburg Postpartum Depression Scale: The scale was developed by Cox et al. (22), in 1987. The Turkish validity and reliability study of the scale was performed by Engindeniz et al. (23). The aim of the scale is to screen for depression in postpartum women. The 4-point Likert-type scale consists of 10 items. Each item receives a score of 0-3. A score between 0 and 30 can be obtained from the scale. The cutoff value of the scale is 13. Women who score 13 and above are accepted to be at a risk for depression. The sensitivity of the scale is 0.84, and its specificity is 0.88. The Cronbach's alpha coefficient of EPDS was found to be 0.83 at the 6th week and 0.78 at the 6th month.

Statistical Analysis
Analysis of data was performed using the Statistical Package for the Social Sciences 14.0 (SPSS Inc.; Chicago, IL, USA). The comparison of scores between groups was performed using the independent samples t-test and the Mann-Whitney U test. Among the participants, the EPDS scores at the 6th postpartum week had a normal distribution; therefore, the independent samples t-test was used in statistical analysis. Because IFSAC scores at the 6th postpartum month had a non-normal distribution, the Mann-Whitney U test was used for statistical analysis. P values<0.05 were accepted as statistically significant.

Table 1. Characteristics of study participants (n=65)

Characteristics	Education group (n=31)	Control group (n=34)	Statistical analyses
Maternal age (years)			
Mean±SD	27±4.8	26.6±4.7	Z=-0.09; p>0.05[a]
Med (25–75 quarter)	(21–37)	(18–38)	
Partner age (years) (Mean±SD)	29.6±5	29.5±3.6	t=0.52; p>0.05 [b]
Duration of marriage (month)			
Mean±SD	27.9±19.7	34.5±29.2	Z=-0.68; p>0.05[a]
Med (25–75 quarter)	(4–72)	(6–144)	
Maternal education [n (%)]			
Middle school	11 (35.5)	11 (32.4)	X=0.79; p>0.05[c]
High school	13 (41.9)	12 (35.3)	
University degree or above	7 (22.6)	11 (32.4)	
Type of delivery [n (%)]			
Instrumental vaginal	14 (45.2)	15 (44.1)	X=0.007; p>0.05[a]
Caesarean section	17 (54.8)	18 (55.9)	

[a]Mann–Whitney U test, [b]Independent samples t-test, [c]Pearson's chi-squared test. SD: standard deviation

Ethics
This study was in accordance with the Ethics Committee of the Marmara University (protocol no: 09.2011.0051). Permission was taken from the hospital administrators. After revealing the aim and duration of the study to the participants, the participants were announced that they can leave from the study whenever they want. Written informed consent was provided from all the participants.

RESULTS

The mean age of the participants was 27±4.8 years in EG and 26.6±4.7 years in CG. Other characteristics of the participants are presented in Table 1. There was no significant difference among the group characteristics (p>0.05) (Table 1).

It was found that the type of delivery was similar in both the groups (p>0.05) (Table 1). Physical problems experienced by the participants at the first 6 weeks following delivery included nipple cracks [EG=45.2% (n=14); CG=61.8% (n=21)], insomnia [EG=41.9% (n=13); CG=41.2% (n=14)], backache [EG=35.5% (n=11); CG= 26.5% (n=9)], and problems related to stitches in CS and the episiotomy area [EG=32.3% (n=10); CG=23.5% (n=8)]. Postpartum physical problems were similar in both the groups (p>0.05).

Table 2. Scale scores of participants in 6th postpartum week and 6th postpartum month (n=65)

Scales score	Education group (n=31) mean±SD	Control group (n=34) mean±SD	Statistical analyses
EPDS score			
6th postpartum week	8.3±5.8	8.7±6.2	t=-0.29; p>0.05[a]
6th postpartum month	5.7±4.7	6.1±5.6	t=-0.36; p>0.05[a]
IFSAC score			
6th postpartum week	2.2±0.33	2.3±0.34	t=-0.28; p>0.05[a]
6th postpartum month	2.8±0.27	2.7±0.30	Z=-1.3; p>0.05[b]
Median (25–75 quarter)	(2.6–3.1)	(2.5–2.9)	

[a]Independent samples t-test, [b]Mann–Whitney U test. SD: standard deviation; EPDS: Edinburg Postpartum Depression Scale; IFSAC: Inventory of Functional Status After Childbirth

Influence of Antenatal Education on EPDS Scores

The rate of PPD during the 6th postpartum week was found to be 16.1% (n=5) in EG and 32.4% (n=11) in CG, while it was found to be 9.7% (n=3) in EG and 11.8% (n=4) in CG during the 6th month after childbirth. Rates of PPD during the 6th postpartum week and during the 6th month following childbirth were similar in both the groups (p<0.05).

The mean EPDS score at the 6th postpartum week was 8.3±5.8 in EG and 8.7±6.2 in CG. The mean EPDS score at the 6th postpartum month was 5.7±4.7 in EG and 6.1±5.6 in CG. EPDS scores were similar within the groups at the 6thweek and the 6th month, and there was no significant difference between the groups (p>0.05) (Table 2).

Influence of Antenatal Education on IFSAC Scores

The mean IFSAC score at the 6th postpartum week was 2.2±0.33 in EG and 2.3±0.34 in CG. The mean IFSAC score at the 6th postpartum month was 2.8±0.27 in EG and 2.7±0.30 in CG. IFSAC scores were similar within the groups at the 6th week and the 6thmonth, and there was no significant difference between the groups (p>0.05) (Table 2).

DISCUSSION

In the current literature, there are studies examining the effect of antenatal education on various factors (1, 6, 9-12). In our country, although only 1 study has evaluated the effect of antenatal education on the postpartum functional status (13), no study has directly investigated the effect of antenatal education on PPD. To the best of our knowledge, the present study is the first to simultaneously examine the influence of antenatal education on PPD and the postpartum functional status. It is thought that the findings of the present study will make a contribution to the literature.

Our results denoted that antenatal education was not helpful in enhancing the postpartum functional status of women and decreasing PPD scores.

It was seen that the mean age and education level of participants in our study were higher than those in other studies (24, 25). This finding may indicate that women with a higher educational level are willing to take part in antenatal education. Adaptation to marriage and to the newborn are important crises in a woman's life. It may be difficult for a woman to accept pregnancy and the baby, particularly in cases of unplanned pregnancies (26). Moreover, unplanned pregnancies negatively affect IFSAC scores (24). In our study, the marriage duration of the participants and the rate of planned pregnancies showed similarities to those in other studies (24, 25, 27) and were similar in both the groups.

Previous research has demonstrated that having a C-section (CS) negatively affects the postpartum functional status (27) and increases the risk of PPD (28). Our results showed that the rate of CS was high as reported in other studies (24, 27) and was similar in both the groups.

Supporting our findings, other studies have revealed that a significant portion of women experience postpartum fatigue, breast problems, constipation, backache, pains in CS and episiotomy areas, headache, hemorrhoid, and problems in stitches (25, 29, 30). There are studies supporting that physical problems that cannot be controlled through education increase the risk of PPD and *negatively impact* the functional status (31). In the present study, physical complaints were experienced at similar levels in both the groups, which may facilitate our interpretation of the influence of antenatal education on PPD and the functional status.

Postpartum depression is an important health issue that women face in the postpartum period (5). During the antenatal education provided in our study, information was given to the participants about PPD and relevant coping strategies. However, it was found that the scores of women who received and who did not receive antenatal education at both the 6th postpartum week and the 6th postpartum month were similar. This finding supports our main hypothesis, i.e., pregnant women who receive antenatal education will have lower EPDS scores at the 6th postpartum week and the 6th postpartum month than those who do not receive antenatal education. Our findings are similar to those of recent studies (14-17). In the study of Buist et al. (14), pregnant women received antenatal education with their partners. In another study, education about postnatal depression was given to the participants in a single session (17). Nevertheless, these studies reported that antenatal education is not effective in reducing the risk of PPD.

Considering the fact that PPD is affected by numerous variables, it is possible that antenatal education may not influence PPD. More studies investigating the effect of antenatal educations on PPD are needed.

Our hypothesis that women who receive antenatal education will have higher IFSAC scores than those who do not receive antenatal education was not supported by the findings of the present study. However, similar to previous studies (11), the IFSAC scores of women who received and those who did not receive antenatal education at the 6th postpartum week and the 6th postpartum month were similar. This finding indicates that because the functional status is associated with social and psychological adaptation, antenatal education alone may not be sufficient to improve it.

Study Limitations

Although the study was planned as a randomized controlled study, randomization could not be achieved because the number of women who participated in our study was relatively low and drop-outs were frequent. Therefore, because of the small sample size, research results cannot be generalized to the relevant population.

Implications for Nursing and Health Policy

AEP alone may not be effective in decreasing PPD and in improving the postpartum functional status. Nurses should plan a special education program (on preventing and coping with PPD/improving the postpartum functional status, and others) rather than general AEP to prevent PPD and to improve the postpartum functional status in women. Besides, multicenter studies with larger sample sizes may enable better assessment of the effects of AEP on postpartum women.

CONCLUSION

Antenatal education program alone may not be effective in decreasing PPD and in improving the postpartum functional status.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Marmara University School of Medicine (Protocol No: 09.2011.0051, Date: 03.03.2011).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

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