



## Effectiveness of Structured Education in Reduction of Postpartum Depression Scores: A Quasi-Experimental Study



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### A B S T R A C T

The aim of this study was to evaluate effectiveness of structured education in reduction of postpartum depression scores among women. This was a quasi-experimental study with a pre–post tests and a control group. Non-random sampling was used and the study included a total of 103 Turkish women, 52 of whom were in the intervention group and 51 were in the control group. The women in the intervention group were offered structured education for postpartum depression and given structured education material. Effectiveness of the education given was evaluated by comparing scores for Edinburgh Postpartum Depression Scale obtained before and after delivery between the intervention and the control groups. Before education, median score ( $8.0 \pm 4.8$ ) for Edinburgh Postpartum Depression Scale of the intervention group were significantly higher than the control group ( $6.0 \pm 6.0$ ,  $p = 0.010$ ), but the groups were statistically similar in terms of having depression (intervention: 17.3%, control: 11.8%,  $p = 0.425$ ). After education, the median score for Edinburgh Postpartum Depression Scale and the ratio of the women having depression in the intervention group were significantly lower than in the control group (respectively intervention:  $4.0 \pm 3.0$ , control:  $10.0 \pm 4.0$ ,  $p = 0.000$ ; intervention: 7.7%, control: 25.5%,  $p = 0.015$ ). Besides, the median score ( $8.0 \pm 4.8$ ) of the intervention group before education were significantly higher than the score ( $4.0 \pm 3.0$ ) obtained after education ( $p = 0.000$ ), while the median score ( $6.0 \pm 6.0$ ) of the control group before education were lower than the score ( $10.0 \pm 4.0$ ) obtained after education ( $p = 0.000$ ). This study revealed that structured education offered to women by nurses was effective in reducing the postpartum depression scores and the numbers of women having depression.

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Postpartum depression (PPD) is considered one the most important health problems arising after giving birth due to its high prevalence and serious negative mother–baby outcomes. It is a mental disorder caused by biological, psychological and socio-cultural factors, likely to last for a long time, causing postpartum complications, and requiring treatment and mostly unrecognized by health professionals (Ammermana et al., 2013; Bick & Howard, 2010; Gjerdingen, Katon, & Rich, 2008). Postpartum depression has serious effects on mother–baby bonding, infant care, infant growth and development and maternal and family health (Grote et al., 2010; Horowitz et al., 2013; Muzik et al., 2013). As a result of these negative effects, PPD has been reported to be an important health problem and it has been recommended that prevention, early diagnosis and treatment of PPD should be performed by first line health care services (World Health Organization, 2012).

Postpartum depression is characterized by loss of interest or pleasure, depressed mood, psychomotor agitation or retardation, fatigue/sleep disturbance, changes in appetite, feelings of inadequacy,

worthlessness, or guilt, and decreased concentration, all of which can interfere with effective maternal functioning (Horowitz et al., 2013). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) state that PPD is with peripartum onset, this specifier can be applied to the current or, if full criteria are not currently met for a major depressive episode, most recent episode of major depression if onset of mood symptoms occurs during pregnancy or in the 4 weeks following delivery. Fifty percent of postpartum major depressive episodes actually begin in the before delivery period (American Psychiatric Association, 2013). Thus, these episodes are referred to collectively as peripartum episodes. Women with peripartum major depressive episodes often have severe anxiety and even panic attacks. Prospective studies have demonstrated that mood and anxiety symptoms during pregnancy, as well as the “baby blues,” increase the risk for a postpartum major depressive episode (American Psychiatric Association, 2013).

The prevalence of PPD varies with sample size, differences in population and time of diagnosis. In the studies using Edinburgh Postnatal Depression Scale (EPDS) and conducted in various countries ranged from 7.5% to 59.4% (Ebeigbe & Akhigbe, 2008; Engineer et al., 2013; Fisher et al., 2012; Gausia, Fisher, Ali, & Oosthuizen, 2009; Howard, Flach, Mehay, Sharp, & Tylee, 2011; Limlomwongse & Liabsuetrakul, 2006; Matteo et al., 2012; Milgrom et al., 2008; Park, Meltzer-Brody, & Stickgold, 2013; Wan et al., 2009). In addition, several studies using

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EPDS and conducted in Turkey revealed that the prevalence of the condition ranged from 14% to 37% (Çeber, Bilge, Mermir, & Yücel, 2010; Durukan, İlhan, Bumin, & Ayçan, 2011; Goker et al., 2012; Kitiş & Karaçam, 2010; Kurçer & Keleş, 2009).

There are many risk factors for PPD (Dennis & Vigod, 2013; Fisher et al., 2012; Ikeda & Kamibepu, 2013; Phipps, Raker, Ware, & Zlotnick, 2013; Ross, McQueen, Vigod, & Dennis, 2011). A recent Turkish study reported that most predictive of postpartum depression were psychiatric history during pregnancy, prenatal anxiety, and poor marital relationship in the first postpartum weeks, lack of health insurance and lack of contraceptive use (Kirpinar, Gözümlü, & Pasinlioğlu, 2010). Another Turkish study stated that strong predictors of PPD were previous psychiatric illness, smoking, lower economic status, relationship problem with husband or mother-in-law, dissatisfaction in social relations, previous loss of a baby and/or the gender of baby (Dindar & Erdogan, 2007).

Symptoms and risk factors of PPD should be identified and appropriate measures should be taken early so that maternal mental health can be promoted and so that parents can have a good start for living with their babies. To provide continuous postpartum care, nurses and/or midwives should be always in contact with mothers in the postpartum period, identify mothers' care needs and take preventive measures to protect and promote both physical and mental health. Thanks to education and counseling offered by nurses and midwives, mother–baby bonding can be improved, women at high risk of depression can be identified, preventive care for PPD can be provided and mothers can be referred to health centers for the early diagnosis and treatment of PPD (Horowitz et al., 2013; Kurçer & Keleş, 2009; Meltzer-Brody, 2011).

The World Health Organization (2013) emphasized that prevention, diagnose and care for maternal mental disorders might be integrated into general health care. Accordingly, the most common strategy for prevention of maternal mental disorders is identification of risk factors and women at high risk by using valid and reliable scales and education of women and their spouses about management of and care for the disorders.

There have been studies on this issue reported in the literature. Horowitz et al. (2013) performed a randomized controlled trial with three phases. The aim of the study was to reveal whether nurses' home visits decreased severity of PPD and improved mother–baby bonding. They found that empathetic listening to mothers, focusing with interest and care, helping mothers to reflect on themselves during data collection and video-recording of mother–baby bonding contributed to education offered by nurses, promoted mother–baby bonding and reduced severity of depression.

In another study, mothers were asked to express their opinions to determine the scope of education material used to persuade mothers to identify signs of PPD and seek for medical help. Data obtained were categorized under three themes, i.e. reliable, correct and emphatic communication (clear and understandable communication), tolerance (with different cultures, educational backgrounds, economic status and ethnic groups) and being interactive (digital tablets and smart photo applications) (McComish, Groh, & Moldenhauer, 2013).

Glavin, Smith, Sorum, and Ellefsen (2010) reported that supportive counseling based on a non-directive counseling method and offered by public health nurses was effective in PPD. In addition, the Program of Resources, Information and Support for Mothers (PRISM) (Lumley et al., 2006) and Healthy Start CARES Program (balancing, measuring, directing and evaluating women's healthy start and health promotion behavior) (Sit et al., 2009) have been shown to decrease symptoms of PPD. However, studies to test more general and easy to use methods which will facilitate provision of care for a higher number of women by nurses and/or midwives and other health professionals working at first line health care centers are required.

Although, PPD is one of the major health problems during the postpartum period in Turkey, there is no standard care procedure for the prevention, early diagnosis and treatment of postpartum depression. The Turkish Ministry of Health recommended that EPDS should be

routinely used in identifying women at risk of PPD in the Postpartum Care Guidelines (Turkish Ministry of Health, 2009). However, there are still significant gaps in the preventive care and health promotion related to postpartum depression. To our knowledge, no developed and tested educational material could be found for this purpose in the literatures. Therefore, this study was aimed to develop an educational material and to evaluate effectiveness of the structured education by using the educational materials in reduction of PPD symptoms in women. A structured educational material was developed by the researchers in the light of the literature (Bick & Howard, 2010; Ebeigbe & Akhigbe, 2008; Gjerdingen et al., 2008; Karaçam, Öz, & Taşkın, 2004; Kitiş & Karaçam, 2010). This material includes information about motherhood sadness, psychosis, depression, frequency, prevalence, symptoms, causes, risk factors and treatment of depression and effects of PPD on mothers, their babies and families and recommendations mothers can make use of to prevent and overcome PPD. Content validity of the educational material was done in the preparation stage of the study and a pilot structured education trial was performed using the educational material to standardize the educational process. The hypothesis of the study was that the women in the intervention group offered structured education by a nurse would receive lower PPD scores than the women in the control group not receiving education. Because PPD severity may change over time and may or may not have been affected by study participation, we also posed the following question: How will maternal depression vary over time for the intervention and control groups?

## METHODS

### Study Design

This was a quasi-experimental study with a pre- and post-test and a controlled group. The study was performed on women for whom health care was provided by Bayraklı Fourteenth Gerbay Family Health Care Centre and Karşıyaka Ninth Zübeyde Hanım Family Health Care Centre, İzmir, Turkey, between November 2010 and June 2011. These two family centers were selected because of their proximity to each other and from the socio-demographic point of view, the availability of individuals with similar status as well as families with different socio-economic statuses.

### Study Participants

The study included a total of 103 Turkish women with convenience sampling, and 52 of whom were in the intervention group and 51 were in the control group. We could not randomize the women into the intervention and control groups in order not to cause a differentiation in care offered to the women by the family health care center where the study was carried out. But these family health care centers were randomly assigned into the intervention and control groups respectively by second author, and participants were assigned to each group according to family health care centers. Intervention and data collection were made by the first author.

The size of the sample needed for this study was calculated based on the preliminary data from the first 35 participants in the intervention and control groups of this study. The minimum number of participants to be included in the study sample was calculated by using a power analysis (power = 0.80,  $\alpha$  = 0.05) with McNemar test and each group was found to include 45 participants. During the study period, out of total 168 women, 87 and 81 were planned to be assigned into the intervention and control groups respectively. The women aged 18–40 years, not having any health problems and having a single, healthy baby were included into the study. The women having a history of prenatal depression and depression, familial history of mental diseases, multiple pregnancies, a serious health problem diagnosed in their babies, a systemic disease (diabetes, hypertension, heart diseases

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