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Effectiveness of Discharge Education on Postpartum Depression

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Abstract

Purpose—To determine effectiveness of an educational intervention in reducing or preventing symptoms of postpartum depression (PPD).

Study Design and Methods—English-speaking women age 18 or older with a singleton, term, healthy newborn were recruited from an 11-bed maternity unit in Southern New Hampshire. Using a quasi experimental design, the first 120 respondents received usual care (control), and the following 120 respondents received the education (treatment) including PPD predictors, symptoms, prevention and management. Current risk factors were measured using the Postpartum Depression Predictors Inventory-Revised (PDPI-R-R). Symptoms of depression were measured using the Edinburgh Postnatal Depression Scale (EPDS) at 6 weeks, 3 months and 6 months postpartum. Two proportion z-tests were used to determine whether the education significantly impacted EPDS scores at each of the three follow ups.

Results—There was no significant difference in symptoms of depression as measured by the EPDS between the treatment and control group at 6 weeks, 3 months or 6 months postpartum. However, consistent with previous studies, low socioeconomic status and a history of depression or anxiety prior to or during the pregnancy were significant predictors of PPD.

There are no conflicts of interest to be reported.

Suggested Clinical Implications

Identify women at risk prenatally or preconception. Begin education and anticipatory guidance prior to the maternity hospitalization, and establish post-discharge follow-up.

Include screening for PPD in any post-discharge follow-up by nurses (for e.g. lactation support phone calls or patient satisfaction phone calls)

Conduct quality improvement and patient experience surveys to determine women's priorities during the postpartum hospitalization, and when the optimal time is to learn about PPD.

Websites

- Postpartum Support International: Resources for professionals and mothers http://www.postpartum.net/
- Centers for Disease Control and Prevention (CDC): For mothers http://www.cdc.gov/reproductivehealth/depression/

  CDC: For health care providers http://www.cdc.gov/reproductivehealth/Depression/Publications.htm
- Office of Women's Health, U.S. Department of Health and Human Services www.womenshealth.gov

Clinical implications—Postpartum nursing discharge education did not decrease depression symptoms up to 6 months after discharge. More research is needed to determine the most appropriate timing and content of education about PPD. Many women at risk can be identified prior to birth. Education to improve literacy about PPD may need to be provided prenatally and reinforced during postpartum hospitalization and after discharge.

Keywords

Depression; postpartum; Discharge teaching; Patient Education; Nursing care

Introduction

Education and support of women is a goal as well as a deeply-held value of nursing care during the postpartum period (Bastable, 2008; Ladewig, London, & Davidson, 2014). As postpartum depression (PPD) is a common complication of childbirth, anticipatory guidance and education about PPD are important aspects of care (Association of Women's Health Obstetric and Neonatal Nurses [AWHONN], 2015; Segre, O'Hara, Arndt, & Beck, 2010a). The first few days postpartum may not be the most appropriate time for identifying PPD (Horowitz, Murphy, Gregory, & Wojcik, 2009; Logsdon, Tomasulo, Eckert, Beck, & Dennis, 2012), however, postpartum nurses may be the only healthcare provider who addresses PPD (Logsdon et al., 2012).

No studies conducted in the United States that measured outcomes of PPD discharge education by postpartum nurses were identified in our review of the literature. In a randomized controlled trial conducted in Taiwan, Ho et al. (2009) found women who received education from a nurse about PPD prior to discharge from the hospital had fewer depressive symptoms at 3 months postpartum compared to the control group. Our study was designed to determine if these results could be replicated in the United States.

Study Design and Methods

Design

The research was approved by the Institutional Review Board of the hospital as well as the academic institution of the researcher. The study used a quasi-experimental design. Based on Cohen's (1988) sample size table for a one-tailed T-test (power = .80, significance <.01), a sample of 82 women were sought for each of the treatment and control groups. Based on prior longitudinal research (McCarter-Spaulding, 2009), a sample of 120 women was recruited for each of the groups to account for attrition. To avoid contamination caused by diffusion of treatment, the control group was recruited first, representing the "usual care" group. The next 120 eligible women received the educational intervention.

Sample Characteristics

Women were eligible to participate if they were at 18 years of age or older, able to speak and read English, healthy and had given birth to a healthy singleton infant born at 37 weeks gestation or greater. Women were considered healthy if they were not currently being treated for any acute medical conditions (e.g. preeclampsia) or birth complications (e.g. spinal

headache or symptomatic anemia). Women were excluded if their babies were preterm or not healthy enough (e.g. due to hyperbilirubinemia or neonatal abstinence) to be discharged home with them. Women less than 18 years old were excluded as depression in adolescents may be influenced by other factors not measured in this study. Financial constraints did not allow for adequate interpretation services for non-English speaking women.

Instruments

Demographic information—An investigator-developed instrument was used to collect demographic and infant feeding data, including age, parity, race/ethnicity, country of birth, mode of birth, education, infant feeding choice and eligibility for the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Eligibility for WIC was used as a proxy for socioeconomic status (SES). Participants were asked to provide their home address, home and mobile telephone numbers, and an alternate number of someone who would always know where to reach them to enhance our ability to be able maintain contact to collect study data at 6 weeks, 3 months, and 6 months postpartum.

Postpartum Depression Predictors Inventory-Revised (PDPI-R)—To measure and control for pre-existing risk factors for depression, the postnatal version of the PDPI-R (C. T. Beck, Records, & Rice, 2006) was administered at the first data collection point in the hospital. The PDPI-R measures risk factors such as prior history of depression and/or anxiety, stressful life events and perception of social support (Hanna, Jarman, Savage, & Layton, 2004). The total PDPI-R score, as well as data collected individually on variables such as previous history of depression and perception of social support were analyzed. The PDPI correlates well with the EPDS (Hanna et al., 2004), which was used to measure depression symptoms in this study.

Postpartum depression—The Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden, & Sagovsky, 1987) is a screening instrument that has been tested extensively among various cultural and ethnic groups. A score of ≥ 13 indicates that a woman is likely to be suffering from depression and should seek diagnosis and treatment. Scores between 10 and 13 may increase the sensitivity for identifying women with minor depression (Matthey et al., 2006). In this study, a score ≥ 10 on the EPDS was considered to be symptomatic of PPD. Data were collected at the high risk period of 4–6 weeks postpartum (Wang, Wu, Anderson, & Florence, 2011), at 3 months and again at 6 months to identify women who may be experiencing onset or persistence of PPD symptoms.

Educational intervention

A member of the research team provided the PPD education, using the fact sheet “Depression During and After Pregnancy” (United States Department of Health and Human Services, 2009), which addresses symptoms, risk factors, treatment options, self-care and prevention strategies, risks of not receiving treatment and resources. The instrument is written at a 7th grade reading level and was considered culturally appropriate for this largely Caucasian sample. Content was discussed with the participant and her partner when possible, and a written copy was provided. Discussion generally lasted from 5–20 minutes.

Training for the research team included role play practice and regular review to ensure consistency in teaching.

Usual care—The control group consisted of the first 120 women who agreed to participate and were enrolled. Usual nursing care included a standardized PPD screening, with an algorithm for referral based on the scores. Written information about depression was also provided by the nurse if women scored in the high-risk range.

Procedures

Eligible women were approached on the day prior to their anticipated discharge from the maternity unit of a medical center in Southern New Hampshire. After informed consent was obtained, interested participants provided contact information and completed written questionnaires with demographic, birth, and infant feeding information and the PDPI-R.

Follow-up by mail occurred at six weeks, 3 months and 6 months postpartum, with a self-addressed stamped envelope provided. At each follow-up, participants described changes in their health status or that of the infant, major changes in their life or employment, current infant feeding pattern, and completed the EPDS. Women who did not respond were contacted by phone, and their answers were recorded by the research assistant. If there was no response by phone after several calls, another set of questionnaires was mailed.

Data analysis

Demographic characteristics such as age, partner status, education and socioeconomic status were analyzed to determine their relationship to depression symptoms postpartum. To control for other influences, risk factors for depression were analyzed using the total score and scores on individual variables on the PDPI-R, including a history of depression and anxiety before and during the pregnancy. Two proportion z-tests were used to determine whether each risk factor or the intervention significantly impacted the number of mothers to reach the thresholds of 10 and 13 on the EPDS scores at each of the three follow ups. Women were considered to have symptoms of depression if they scored ≥ 10 on the EPDS. Women whose EPDS was ≥ 13 were also analyzed separately to determine if the effect differed depending on the severity of depression.

Results

Sample

Informed consent and completed initial information were provided by 231 women. Nine women provided informed consent, but subsequently did not complete the initial questionnaires so could not be included in the study. The average age of respondents was 29.68 (SD=5.09, range 18–45) years old. The majority (55.4%) was between the ages of 19–30, with 42.8% between the ages of 31–40. Most (n=205, 89%) were Caucasian and born in the United States and the majority (n=150, 65%) was multiparous. A majority of participants (n=177, 77%) had given birth vaginally. Less than 5% (n=11) of the sample had less than 12 years of education. Fifteen percent (n=31, 15%) reported having completed 12 years of education, while 39 % (n=90) reported having some college, 22% (n=51) completed 16

years of education and 20.4% (n=47) reported greater than 16 years of education. About one third (n=79, 34%) of the sample reported WIC eligibility. There were no significant demographic differences between the intervention and the control group. Preexisting depression risk factors were not significantly different between groups. A small number of women (6.5%) had a total PDPI-R score greater than 10.5. Using individual variables measured on the PDPI-R, 36.8% of the women had a history of anxiety and 20.7% reported a history of depression during the pregnancy; 36.8% reported a history of depression prior to pregnancy.

Effectiveness of the educational intervention

There were no significant differences between women who received the educational intervention and those who received the usual care provided, based on EPDS scores at any of the follow-up points (Table 1). Over the six month period, 10 women (10.2% of those who responded to at least one of the three follow ups) in the control group and 8 women (7.6%) in the intervention group reported receiving treatment for depression. Women with total scores ≥ 13 on the EPDS or those indicating a risk of self-harm were referred for treatment by the research team by protocol. The influence of the research team was not directly measured but based on the timing of treatment initiation; four women in the total sample may have sought help due to intervention by the research team.

Significant predictors of symptoms of PPD

Postpartum PDPI-R scores accurately predicted women who would experience some depression symptoms at one or more follow-up points. Among the 13 women who scored greater than 10 on the PDPI-R and responded to at least one of the EPDS follow ups, 76.9% reported an EPDS of at least 10 on a follow up EPDS. At 6 weeks postpartum, 10.6% of the women who responded were experiencing some symptoms of depression, 10.3% experienced symptoms at 3 months, and 12.2% were symptomatic at 6 months postpartum. At 6 weeks postpartum 4.7% of the sample reached the threshold of an EPDS score ≥13, 5.2% at 3 months, and 7.1% at 6 months.

The only demographic variable that significantly predicted depression symptoms was SES as measured by WIC eligibility. A history of depression and/or anxiety during pregnancy was also a significant predictor ($p < .001$) of symptoms of depression at all three follow-up points. If low SES and a history or depression and/or anxiety during the pregnancy were both reported, respondents were significantly more likely to report symptoms of depression. Age, marital status, parity and education were not predictors of PPD symptoms, consistent with previous studies (O'Hara & Swain, 1996).

Limitations

Although numerous attempts were made to contact respondents both by mail and phone, many women could not be reached for all of the scheduled follow-up data collection processes at 3 weeks, 3 months and 6 months postpartum. The demands of a newborn likely reduce attention to mailed surveys or phone messages. Using email or text messaging and providing small incentives to respond may have improved study retention.

Clinical Nursing Implications

Discharge education did not have a significant influence on preventing PPD symptoms in this sample. Perhaps the usual care for women at risk for depression was not significantly different than the intervention offered by the research team, minimizing distinctions between the treatment and usual care. The timing of education may not have been optimal, or education by itself may not be adequate to change health outcomes. Physical recovery, infant care, entertaining visitors, as well as patient acuity on the unit create many distractions for both the nurse and the postpartum woman in the process of discharge teaching. While postpartum patients may feel they received satisfactory (Lindpaintner et al., 2013), high-quality education (Weiss & Lokken, 2009), it may be more than what women can take in and recall during the first few days postpartum (Bastable, 2008). Given that fatigue is implicated in PPD (Dennis & Ross, 2005), too much time spend on discharge education may actually have negative consequences. Education beginning prenatally, briefly addressed during hospitalization and then reinforced post-discharge may be more effective.

Evidence of the effectiveness can vary widely depending on the outcome variable measured (S. L. Beck et al., 2013). Measuring depression symptoms using the EPDS may reflect more individual factors than an understanding about identifying and managing PPD. Decreased use of healthcare after discharge (Weiss et al., 2008) has been used as a measure of teaching effectiveness, while use of services would be a positive effect of PPD education. However, in this sample there were no significant differences between groups in the rate of accessing treatment. Perhaps measuring variables such as parenting stress and relationship satisfaction (Yawn et al., 2012) in addition to symptoms and treatment would be more sensitive outcome measures.

This study attempted to replicate findings from a study conducted in Taiwan (Ho et al., 2009). Perhaps cultural differences could also explain the contrasting results (Bina, 2008). Feasibly measuring mental health literacy (Jorm, 2000) which includes knowledge and beliefs about mental health, risk factors, self-help and professional treatment, may better reflect outcomes of patient education about PPD.

Results of this study confirm that low SES and a history of depression or anxiety during pregnancy predict PPD symptoms up to 6 months postpartum; factors that can be identified prenatally or even prior to conception. Prioritizing nursing time to provide care for at-risk women may be more effective than a standardized educational intervention. Education about PPD during the busy hospitalization might not be an effective use of nursing time, and may reduce attention to important priorities such as infant feeding and maternal care as well as rest. While patients and nurses are open to addressing PPD (Segre, O'Hara, Arndt, & Beck, 2010b; Sofronas, Feeley, Zelkowitz, & Sabbagh, 2011) further research is needed to determine effective nursing interventions during the childbearing year. Current discharge teaching practices may even be a barrier to maternal mental health and a distraction from other more important priorities. The assumption that more discharge education has a positive effect on health outcomes may need to be reexamined. Risks of untreated depression make this an important priority for nursing and health care.

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Table 1

Relationship of Symptoms of Postpartum Depression (EPDS ≥ 10) by Treatment Designation

	6 Weeks			3 Months			6 Months		
	n	**%≥10 EPDS**	***p***	**n**	**%≥10 EPDS**	***p***	**n**	**%≥10 EPDS**	***p***
Usual Care (Control)	95	13%	.165	92	8%	.105	81	10%	.172
Intervention (Treatment)	75	8%		82	13%		74	15%	

Proportions were compared and *p* values were computed using two-proportion one-tailed *z*-tests.

Each *p* value corresponds to the difference in the proportions in the box to their direct left.