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Postpartum Daily Stress, Relationship Quality, and Depressive Symptoms

Melissa Page · Mari S. Wilhelm

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Abstract This study explored the relationships among daily stresses, specifically interpersonal conflict, the quality of supportive spousal relationships, and the experience of postpartum depressive symptoms. In our sample of 51 women nearly 30% reported symptoms consistent with postpartum depression. Using regression analysis and controlling for depression during pregnancy, results suggested that arguments with family members and the depth of the spousal relationship acted as significant predictors of the severity of reported postpartum depressive symptoms. Results of the regression were in the expected direction, but due to the small sample size, the findings should be interpreted with caution. Post-hoc analyses were conducted separating the women into three groups based on their depression scores. Therapeutic interventions to reduce postpartum depressive symptoms are considered.

Keywords Arguments · Stress · Relationship quality · Postpartum depression · Depressive symptoms

Introduction

For some women, the changes and demands of pregnancy on the body as well as from the newborn and other family members may create vulnerability and an increased susceptibility to postpartum depressive symptoms. One of the strongest predictors of postpartum depression is a previous episode, usually during the pregnancy. However, a meta-analysis

M. Page (✉) · M. S. Wilhelm
Family Studies and Human Development, University of Arizona, FCS 217, P.O. Box 210033, Tucson, AZ 85721-0033, USA
e-mail: mpage@u.arizona.edu

M. S. Wilhelm
e-mail: wilhelmm@ag.arizona.edu

of the depression literature spanning 1990–1999 (Beck, 2001) identified a variety of other potential predictors of postpartum depression including individual characteristics, infant characteristics, and relational contexts. The goal of the current study was to explore whether reports of daily stressful experiences were predictive of postpartum depressive symptoms, and the extent to which characteristics of spousal relationships (support and depth) may influence the experience of daily stresses and reports of postpartum depressive symptoms, while controlling for reports of depressive symptoms during the pregnancy.

Depressive Symptoms

Women are twice as likely as men to report symptoms associated with depression (Immerman and Mackey, 2003). This difference between the sexes is particularly evident during the childbearing years (Burke, 2003; Seyfried & Marcus, 2003). In a study by Hoffman and Hatch (2000), 25% of women in their second trimester and 30% in the third trimester were found to have an elevated depressive symptom level. Additional studies of prenatal depression found that stressful events and lack of social support were significantly correlated with elevated depressive symptoms (Marcus, Flynn, Blow, & Barry, 2003; Mercer & Ferketich, 1990).

Depressive symptoms both during and after pregnancy include tearfulness, hopelessness, feeling empty inside, a significant loss of pleasure in all or most daily activities, appetite and weight change, sleep problems (usually insomnia), extreme fatigue or loss of energy, feeling worthless or having inappropriate guilt, difficulty concentrating and making decisions, and thinking about death or suicide. The extent and severity of these symptoms distinguishes three types of depression associated with the postpartum period: postpartum blues, postpartum depression, and postpartum psychosis.

Postpartum blues, also known as baby blues, may occur three to five days after delivery and is believed to result from changes in a woman's hormonal levels following birth. Symptoms that typically resolve themselves within a few days to a week include tearfulness, moodiness, anxiety, irritability, and difficulty sleeping (Seyfried & Marcus, 2003; Williams & Casper, 1998). Postpartum depression, the second and most common form, can evolve from the baby blues, but typically begins within four to twelve weeks following the birth according to the DSM-IV (American Psychiatric Association, 1994), and also may occur due to additional fluctuations in the hormones when menstruation commences or when breastfeeding ceases (Clayton, 2004). Postpartum depression is distinguished from the baby blues and from a regular episode of depression primarily by the onset and duration of symptoms immediately following the birth up to one year (Clayton, 2004). Research has shown that mild to moderate depression is about three times higher for postpartum women one month following delivery than in non-gestational controls (Buckwalter et al., 1999). The final classification of postpartum depression is postpartum psychosis, which in extreme cases results in an extremely rare form of depression that is characterized by thoughts of harming the baby or of committing suicide. This form of postpartum depression affects 1–2% of women and requires immediate medical attention and intervention (Seyfried & Marcus, 2003).

The cause of depressive symptoms includes a variety of factors, some of which are not changeable, and some that are amenable to change. Largely, ethnicity, age, educational attainment, income, marital status, and a genetic history of depression including family members and personality characteristics are identifiable risk factors that do not provide

equivocal opportunities for change (Beck, 2001; Howell, Mora, & Leventhal, 2006; Seto, Cornelius, Goldschmidt, Morimoto, & Day, 2005). However, issues regarding self-esteem, coping abilities, anxiety and stress responses, level of relationship support, and health care of the mother during pregnancy are important variables to include in prevention and intervention services designed to reduce or prevent depressive symptoms (Boyce & Hickey, 2005; Howell et al., 2006). While a variety of factors may contribute to depressive symptoms both during and after pregnancy, daily stress and relationship quality are the two factors that were explored in this study.

Daily Stresses

Stress is known to affect individuals differentially, such that a stressful event for one person may barely bother another (Walsh, 1996). Boss (2002) suggests that it is the hardships or smaller struggles associated with life events that actually create the sense of stress. This theory is supported by Da Costa, Brender, and Larouche (1998), who reported that utilizing a daily hassles scale resulted in a more sensitive and predictive measure of complications during the birth and postpartum period than does use of the major life events scale (Kanner, Coyne, Schaefer, & Lazarus, 1981).

The postpartum period comprises numerous changes that can create a sense of stress, including fluctuations in hormones, adapting to new sleep routines, and caring for the constant demands of a newborn, and perhaps other children. This notion receives support from researchers who have found that chronic or persistent stress in daily demands, as compared to the infrequent major life events (i.e., job changes, death of a loved one), contributed to adverse pregnancy outcomes such as postpartum depression (Crnic & Greenberg, 1990; Crnic & Low, 2002; Dunkel-Schetter & Lobel, 1998). While individual daily stress may not solely affect a woman's psychological well-being, the cumulative effect of multiple daily stresses occurring in multiple roles (mother, spouse, friend, and worker) potentially affects a woman's adaptability in the larger context of her environment (Bolger, DeLongis, Kessler, & Schilling, 1989; Crnic & Greenberg, 1990; Da Costa, Larouche, Dritsa, & Brender, 2000).

Bolger and colleagues (1989) found interpersonal conflicts to be the most distressing of the daily stresses, resulting in mood variations within the general population. In self-report measures by postpartum women, those reporting interpersonal conflicts during the first month postpartum were more likely to experience and report at 6 months symptoms associated with postpartum depression (Seguin, Potvin, St. Denis, & Loiselle, 1999). Several more recent studies confirmed the increased risk of postpartum depressive symptoms stemming from arguments with a partner (Dennis & Ross, 2006; Johnstone, Boyce, Hickey, Morris-Yates, & Harris, 2001), marital disharmony (Glasser et al., 2000), and partner-associated stress (Gross, Well, Radigan-Garcia, & Dietz, 2002). Likewise, Honey, Morgan, and Bennett (2003) found that "after controlling for depression during pregnancy, a higher number of reported daily stressors were positively associated with low postpartum mood" (p. 139).

Marital conflict has been shown to be highly correlated with depression, and therefore can act as a catalyst for depressive symptoms (Boyce & Hickey, 2005; Zahn-Waxler, Duggal, & Gruber, 2002). When left unresolved, marital conflict can hinder the resolution of depressive symptoms despite efforts of the woman to seek medical or psychotherapy treatment. In addition, marital conflict indirectly impairs the parenting of the child through

the establishment of a hostile social environment and the modeling of poor affective regulation (Zahn-Waxler et al., 2002). Similarly, researchers note that low energy and depressed mood can lead to an increase in marital conflict and disharmony (Burke, 2003; Seto et al., 2005). In sum, marital conflict promotes a vicious cycle for the woman and her family, and conflicts during pregnancy and the postpartum period may result in a higher risk for depressive symptoms. Despite marital conflicts, however, women who are securely married or have a partner are less likely to be affected by the conflict in their relationship than women who are single.

Relationship Quality

Support is an over-arching construct that can refer to support provided by a spouse, relative, friend, or other significant individual. Support can be instrumental (goods or services) or emotional (love, understanding) (Beach & Gupta, 2006; Mickelson, Claffey, & Williams, 2006). The type of support provided is most beneficial if it matches perceived need (Logsdon & Usui, 2001). In the Quality of Relationships Inventory (Pierce, 1994), relationship-specific support is defined as the perception the recipient places on the assistance available from the other person in a variety of situations. Empirical data have revealed that social support, and specifically spousal support, provides positive benefits for the recipient. Purdom, Lucas, and Miller (2006) found that spousal support contributed to a greater reduction in role-strain (wife, mother, and worker) by increasing marital quality and promoting general well-being, particularly when parenting young children as compared to older children or no children. Additionally, their study found that adequate spousal support leads to higher reports of marital satisfaction and fewer symptoms of depression (Alkar & Gençöz, 2005; Purdom et al., 2006). Sagrestano, Felman, Rini, Woo, and Dunkel-Schetter (1999) found varying results for support during pregnancy from family and friends based on marital status, socio-economic status, and ethnicity.

Emotional support from a spouse was found to be a key factor in both marital satisfaction and decreased marital conflict, especially for women (Boyce & Hickey, 2005; Mickelson et al., 2006). With regard to directive and nondirective support, nondirective support resulted in greater benefits to both depressed and non-depressed partners. Nondirective support establishes confidence in one's ability to handle a situation while directive support suggests how to handle the situation (Beach & Gupta, 2006). Nondirective support compares to emotional support and was reported to provide adequate support to the recipient regardless of the enactment of tangible support.

In studying the relationship of spousal support and postpartum depression, Seyfreid and Marcus (2003) found that higher levels of postpartum depressive symptoms were associated with poor marital relationships, lack of spousal support, and lack of a trusted confidante. Further, chronic depression can lead to marital distress, and in some cases, to divorce (Burke, 2003). Thus, chronic depression persisting at 9 and 12 months post delivery related more to a poor marital relationship and less to physiological symptoms such as hormonal changes associated with postpartum depression in the early weeks following delivery. Boyce and Hickey (2005), report that the perception of unsatisfactory support or no support increased the risk for postpartum depression. In sum, research findings suggest that spousal support can potentially decrease or prevent the onset of postpartum depressive symptoms in low risk pregnancies, while lack of support acts as a risk factor for development of postpartum depression (Besser, Priel, & Wiznitzer, 2002;

Gotlib, Whiffen, Wallace, & Mount, 1991; Surkan, Peterson, Hughes, & Gottlieb, 2006; Vilhjalmsson, 1993).

Relationship depth as defined in the Quality of Relationships Inventory (Pierce, 1994; Verhofstadt, Buysse, Rosseel, & Peene, 2006) refers to the perception of a relationship as positive, important and secure. Depth places more emphasis on the quality of the relationship rather than the support or the perception of needed support one feels from a significant other. When the relationship is both positive and individuals feel secure with their partners, they report greater self-esteem and coping abilities, and fewer feelings of loneliness, anxiety, or depression (Logsdon & Usui, 2001; Pierce, Sarason, Sarason, Solky-Butzel, & Nagle, 1997). The importance of depth in the relationship, particularly with a spouse or partner, benefits the individual during the transition to parenthood, which has been reported as a period of time known to result in a decline in marital satisfaction (Alkar & Gençöz, 2005; Belsky, Spanier, & Rovine, 1983).

In summary, the literature supports the idea that family related stressors, particularly conflicts with family members, may increase the risk for postpartum depressive symptoms in response to an environment that already may be stressed given a focus on adapting to the arrival and caretaking of a new infant. It is noted that relationship quality (support or depth) plays an important role with the stresses encountered during the postpartum period, resulting for some women in a potential decrease in reports of depressive symptoms. Thus, our research questioned whether the observance of depression during pregnancy would contribute to postpartum depression with an increase in the reports of depressive symptoms in the presence of daily hassles, and a decrease in reported symptoms based on the presence of relationship support and depth available to the postpartum mother. Correlation and regression analyses were used to confirm the proposed relationships. A test of moderation with each of the relationship quality variables with family arguments was included as an additional relationship variable in the regression analysis.

Method

Procedures

Data used for this article were collected as part of a study on pregnancy and postpartum well-being. Participants were recruited during their prenatal visit at three obstetrical clinics in a large Southwestern city. Additional participants were recruited by word of mouth and flyers. Consent forms to participate in the study were signed during the initial contact. Data from questionnaires completed six weeks postpartum were used in the following analysis, along with an average of the reported depressive symptoms collected from surveys during pregnancy. Upon completion of each questionnaire, participants received a $5 gift certificate to a local vendor.

Measures

Depressive symptoms were measured using the *Center for Epidemiological Studies Depression Scale* (CES-D) (Radloff, 1977). Respondents rated 20 items on a four-point Likert-type scale, with responses ranging from 0—less than one day to 3—five to seven days as they reported how they felt in the last week in response to questions such as "I felt

lonely;" "My sleep was restless;" or "I felt hopeful about the future." Positive items were reverse coded and sums of the items were computed. The possible range of scores is 0 to 60, with scores greater than 16 reflecting symptoms at risk for clinical depression among the general population. Cronbach's alpha for the CES-D scale in our sample was .94. For the purpose of this study, reported postpartum depressive symptoms served as a continuous dependent measure in the regression analysis, while the average of depression during pregnancy was used as a covariate, or control variable.

Daily Stresses is a 20-item questionnaire (Bolger et al., 1989) measuring respondents' reactions to daily stress items such as "How often in the last week have you felt. . .overload at home, overload at work, demands from family, demands from others, arguments with spouse, arguments with a child, arguments with others, and financial or transportation problems." Participants responded to each statement by checking events occurring in the past week. Items checked were coded as 1 and items left blank were coded as 0. The 20 items were divided into the 5 subscales created by Bolger et al. (1989), and the scores summed for each scale. The five subscales included demands from home, demands from work, demands from others, arguments with family, and arguments with others. Cronbach's alpha for all daily hassles items was .69 and ranged from .14 to .60 for each of the five subscales in this sample population. A major focus of the study was to understand the extent to which daily hassles led to increased levels of postpartum depression. The mean score for each of the subscales is reported in Table 1.

The *Quality of Relationships Inventory* (Pierce, 1994) is a 25-item questionnaire utilized to obtain three aspects of relationships: support, conflict, and depth. The conflict scale was not utilized in this analysis due to its similarities with the arguments subscales within the daily hassles measure (arguments with family, $r = .585$, $P < .001$ and arguments with others $r = .324$, $P < .05$). Empirical data support the use of each subscale independently based on a confirmed three-factor structure (Verhofstadt et al., 2006). In our sample, the alpha reliability for the support scale (7 items) was .90 and .63 for the depth subscale (6 items). The respondents rated on a 1–4 Likert scale the degree to which their significant

Table 1 Mean scores for study variables

Scale	M (SD)	Range
Postpartum depression	13.16 (12.52)	[0–60]
Depression during pregnancy	13.36 (7.62)	[0–60]
Age	29.47 (4.73)	[20–39]
Number of pregnancies	2.59 (1.61)	[0–9]
Number of births	.91 (.94)	[0–3]
Educational attainment	1.63 (.49)	[0–2]
Demands from home	1.59 (1.19)	[0–4]
Demands from work	.20 (.40)	[0–1]
Demands from others	.86 (1.04)	[0–3]
Arguments with family	1.31 (1.05)	[0–6]
Arguments with others	.20 (.50)	[0–6]
Relationship support	3.48 (.59)	[0–4]
Relationship depth	3.57 (.36)	[0–4]

Note: $N = 51$

other met the criteria for each question. Items are scored from 1—not at all to 4—very much. For example, a support question asked, "To what extent could you turn to this person for advice about problems?" The depth scale asked, "How significant is this relationship in your life?" The two subscales were summed to create a scale score for use in the analyses.

Participants

We utilized data provided by 51 women who completed postpartum surveys six weeks after delivery. Of the 51 postpartum surveys, the ethnic breakdown included 71% (n = 36) Caucasian, 21% (n = 11) Hispanic, 4% (n = 2) Asian, and 4% (n = 2) other. The age of the women ranged from 20–39 with a mean of 29.5. The level of education ranged from having completed high school to graduate school. The majority of women (86%, n = 44) had completed college or some college. Eighty-four percent (n = 43) of the women reported a spouse as their significant other, while the remaining 16% (n = 8) reported a partner. The number of children living at home ranged from 0 to 6. A comparison of women with incomplete postpartum surveys (N = 20) to the entire sample represented in Table 1, found education (M = 4.15, P = .004) as the only significant difference. Given the high correlation between depression during pregnancy and postpartum depressive symptoms, we constructed a contingency table (Table 2) to represent women who remained depressed throughout the study compared to those women whose depression resolved by the postpartum and those who reported depression only at the postpartum period. For our sample of 51 women, ten women reported depressive symptoms throughout their pregnancy and the postpartum period. A total of 15 women reported depressive symptoms during their pregnancy; and for six of those women, the depressive symptoms had resolved by the postpartum period. Six women reported depressive symptoms during the postpartum period only, which resulted in a total of 15 women reporting symptoms postpartum.

Results

This study focused on understanding the relationships among self-reported symptoms of postpartum depression, experience with daily stress, and relationship quality. Mean scores and bivariate correlations for relevant study variables are detailed in Tables 1 and 3 respectively. Based on the correlations among the study variables, only four variables were significantly associated with the outcome variable of postpartum depressive symptoms. The variables included depression during pregnancy, arguments with family, relationship

Table 2 Summary of depressive symptoms during pregnancy and in the postpartum period

Postpartum depression	Depression during pregnancy		
	Yes	No	Total
Yes	9	6	15
No	6	30	36
Total	15	36	51

support, and relationship depth. When both relationship quality variables were entered into the regression, the two variables were both non-significant. However, the high inter-correlation between relationship support and depth ($r = .65$, $P < .01$) resulted in the decision to examine our research questions regarding spousal support. Given the vast amount of literature using the support variable (Alkar & Gençöz, 2005; Purdom et al., 2006), we decided to pursue further the depth of the relationship to determine the association of this variable to the other predictor and criterion variable within the regression model.

Overall, the participants in our study reported a mean level of 13.6 on the CES-D with a possible range of scores from 0 to 60. Fifteen of the 51 new mothers (29.4%) self-reported and identified symptoms scoring greater than 16 on the CES-D, which is consistent with prior reports of 3–33% for postpartum depression (Da Costa et al., 2000).

Regression Analysis

In order to determine whether family arguments and relationship depth predicted postpartum depressive symptoms beyond that accounted for by reported depression during pregnancy, these two variables were entered in the second block of the regression analysis.

Table 3 Correlation matrix of predictor variables and dependent variable

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Postpartum depression	–	.26*	.08	−.01	.18	.03	.27	.42**	.26	−.46**	−.35*
2. Depression during pregnancy		–	−.37**	−.50**	.35*	.05	.42**	.11	.24	−.28*	−.12
3. Maternal age			–	.49**	−.29*	−.05	−.43**	−.09	−.11	−.01	−.09
4. Educational attainment				–	−.05	−.08	−.37**	−.14	−.14	.46**	.40**
5. Demands from home					–	.01	.38**	.36**	.18	−.19	−.17
6. Demands from work						–	.50**	.09	.31*	.07	.02
7. Demands from others							–	.24	.45**	−.21	−.19
8. Arguments with family								–	.31*	−.43**	−.24
9. Arguments with others									–	−.16	.06
10. Relationship support										–	.65**
11. Relationship depth											–

Note: * $P < .05$, ** $P < .01$

The result of the regression analysis is shown in Table 4. Depression during pregnancy had the strongest beta weight in both blocks, confirming previous findings for depression during pregnancy as a primary predictor of postpartum depression (Beck, 2001). Arguments with family reached significance (β = .300, P Post hoc analysis).

Based on the postpartum depression literature, we decided to analyze and describe our non-clinical sample by utilizing the two cut-off points for the CES-D (16 and 24). We divided our sample into three groups: women scoring 0–15, women scoring 16–23, and women scoring 24–60. Table 5 includes the mean and standard deviation scores for the three subgroups, as well as t-test values located in the notes section. The sub-sample of 6 women scoring 16–23 represents 12% of the total sample (n = 51) and 40% of the depressed sample (n = 15). The sub-sample of 9 women scoring 24 or above represents 18% of the total sample (n = 51) and 60% of the depressed sub-sample (n = 15).

A T-test comparison of women scoring 0–15 and 16–23 on the CES-D resulted in two variables that were significantly different (postpartum depression, t = –6.261, P < .001; and relationship support, t = 3.48, P < .01).

The second T-test compared women scoring 0–15 with those scoring 24–60 and resulted in seven variables reaching significance (postpartum depression, t = –11.413, P < .001, depression during pregnancy, t = −4.014, P < .001, educational attainment, t = 3.222, P < .01, demands from home, t = −2.352, P < .05, arguments with family, t = −2.631, P < .05, relationship support, t = 3.804, P < .001, relationship depth, t = 3.456, P < .01). A third comparison was completed for women scoring 16–23 with those scoring greater than 24; the only variable significantly different between these two groups was the level of postpartum depression (t = −3.147, P < .01).

Discussion

In this exploratory study of 51 women, the impact of daily hassles, relationship support, and relationship depth were analyzed for their contribution in the observance of postpartum depressive symptoms, while controlling for depression reported during pregnancy. All four of the predictors included in our model are supported in the literature in association with postpartum depression (Beck, 2001). Beck reported effect sizes for childcare stress and life stress, social support, marital relationship, and prenatal depression. Variations from our

Table 4 Summary of regression analysis for variables predicting postpartum depressive symptoms (N = 51)

Variable	B	SE B	β
Step 1			
Depression during pregnancy	1.04	.182	.634***
Step 2			
Depression during pregnancy	.944	.161	.575***
Arguments with family	3.58	1.19	.300**
Relationship depth	−7.16	3.46	−.207*

Note: * P < .05, ** P < .01, *** P < .001; R^2 = .402 for Step 1; R^2 = .561 for Step 2; $F_{(3, 47)}$ = 20.021, P < .001

Table 5 Mean scores for postpartum depression study variables by group status

Group status Scale [Range]	1. CES-D < 16 (N = 36) M (SD)	2. CES-D 16–23 (N = 6) M (SD)	3. CES-D > 24 (N = 9) M (SD)
Postpartum depression [0–60]	6.72 (4.75)	19.33[a] (3.01)	34.78[b,c] (11.63)
Depression during pregnancy [0–60]	11.03 (5.11)	15.41 (4.63)	21.27[b] (11.74)
Age [20–39]	29.86 (4.22)	29.83 (5.04)	27.67 (6.44)
Number of pregnancies [0–9]	2.31 (1.20)	3.00 (1.41)	3.38 (2.77)
Number of births [0–3]	.81 (.90)	1.00 (.89)	1.25 (1.17)
Educational attainment [0–2]	1.75 (.44)	1.50 (.55)	1.22[b] (.44)
Demands from home [0–4]	1.50 (1.11)	1.50 (1.38)	2.00[b] (1.41)
Demands from work [0–1]	.20 (.40)	.00 (.00)	.33 (.50)
Demands from others [0–3]	.67 (.86)	1.00 (.89)	1.56 (1.51)
Arguments with family [0–6]	1.06 (.86)	1.83 (1.17)	2.00[b] (1.32)
Arguments with others [0–6]	.17 (.45)	.00 (.00)	.44 (.73)
Relationship support [0–4]	3.68 (.34)	3.07[a] (.67)	2.98[b] (.89)
Relationship depth [0–4]	3.66 (.25)	3.53 (.13)	3.21[b] (.60)

Note: [a] T-test between CES-D < 16 and CES-D = 16–23: postpartum depression, $t = -6.261$, $P < .001$; relationship support, $t = 3.48$, $P < .01$

[b] T-test between CES-D < 16 and CES-D > 24: postpartum depression, $t = -11.413$, $P < .001$, depression during pregnancy, $t = -4.014$, $P < .001$, educational attainment, $t = 3.222$, $P < .01$, demands from home, $t = -2.352$, $P < .05$, arguments with family, $t = -2.631$, $P < .05$, relationship support, $t = 3.804$, $P < .001$, relationship depth, $t = 3.456$, $P < .01$

[c] T-test between CES-D = 16–23 and CES-D > 24: postpartum depression, $t = -3.147$, $P < .01$

study included the utilization of daily hassles, specifically arguments with family, and two scales from the Quality of Relationship Inventory: relationship support and depth.

Self Reports of Depressive Symptoms

Almost 30% of our sample self-reported depressive symptoms during the postpartum period. One note of concern is the scoring of a 0 on the CES-D scale by two women, which possibly pulled down the mean score for the entire sample shown in Table 1. However, despite a smaller sample size, there continues to be a modest rate of women reporting depressive symptoms. Because of the strong relationship between prenatal depression and postpartum depression, identifying and tracking women with depressive symptoms during their pregnancy is one way the healthcare system may work to reduce the prevalence of untreated women in the postpartum period. With 15 total women reporting depressive symptoms during pregnancy, it was not surprising that 9 women reporting depressive symptoms during their pregnancy continued to report symptoms 6 weeks postpartum. It is interesting to note that six women no longer reported symptoms after the birth of the baby, and 6 new women had elevated symptoms during the postpartum period only.

Impact of Daily Stress on Levels of Postpartum Depression

The bivariate correlation of the five subscales of daily hassles and postpartum depression reached significance only for arguments with family members. This finding was not unexpected as there is a substantial literature base that posits a stronger relationship from arguments within interpersonal relationships than from demands or non-interpersonal interactions (Bolger et al., 1989; Dennis & Ross, 2006; Johnstone et al., 2001; Skärsäter, Ågren, & Dencker, 2001), as well as a specific association between marital conflicts and postpartum depression (Zahn-Waxler et al., 2002).

With regard to the other four daily stressors, it is likely that at six-weeks postpartum only a few women had returned to work, thus accounting for the low number of demands or arguments associated with work. While it seems unusual that demands from home were not significant in the correlations, the post hoc analysis found demands from home reached significance when comparing the mean scores from women scoring greater than 24 on the CES-D with those scoring less than 16, suggesting that women experiencing a higher number of depressive symptoms are reacting to more of the daily hassles than the rest of the sample. This finding was suppressed in the correlation with postpartum depression when using the entire sample. Reviewing the data, for the six women no longer depressed in the postpartum, four of the six reported fewer arguments after the birth of the baby compared to during the pregnancy. One woman reported the same amount and one woman had more. In contrast to these results, of the 15 women reporting postpartum depressive symptoms, 11 also reported an increase in the number of family arguments.

Spousal Support from Relationship Depth

All of the women in our sample answered the Quality of Relationship Inventory by reporting about their spouse or partner. As a whole, the sample reported high levels of both support and depth. Despite a significant negative correlation with postpartum depression, when both relationship support and relationship depth were included in the regression model, high multicollinearity obscured the significance of either variable. Depth, according to Pierce (1994), measures the extent to which the relationship exerts a significant impact on the person's life. So the key distinction focuses on the impact of the relationship rather than merely the presence or availability of support. In our study, both the correlation and regression for relationship depth were negatively related to postpartum depressive symptoms resulting in a decrease in depressive symptoms. However, contrary to our assumptions, relationship depth did not act as a moderator between arguments with family and the reporting of postpartum depressive symptoms. Likewise, the main effect and the interaction between relationship support and arguments with family also were non-significant. Even though the interaction was non-significant, however, the finding for a main effect of depth resulting in a reduction in symptoms should be noted for intervention and prevention of postpartum depression. Similar to the findings reported above, for the 15 depressed women, 8 reported a reduction in the depth of their relationship, with an additional 3 reporting no change.

Post hoc Analysis

Findings from this study supported previous results that daily stress in the form of arguments may serve as predictors of postpartum depression as observed in regression analyses;

likewise, relationship quality in the form of depth acted to reduce the reported symptoms for the sample as a whole. We were interested in looking more specifically at the characteristics of the women reporting depressive symptoms compared to those scoring below the cut-off. Interestingly in the post hoc analysis comparing mean scores on the study variables, the majority of significant findings came from the group of women reporting greater than 24 on the CES-D. Of the women scoring greater than 24 on the CES-D, 5 of the 9 (56%) reported 3 arguments with family members, while only 2 of the women reported no arguments with family. Those same 5 women reported between 2 and 4 demands from home; and 4 of the women also experienced demands from others. As mentioned previously, demands from home appeared to be suppressed in the full sample, but the post hoc analysis revealed that women scoring greater than 24 reported a significantly different level of demands from home. Likewise, in this sub-sample of women, relationship depth and relationship support were significantly different than for women scoring less than 16 on the CES-D. Not surprisingly, both depression during pregnancy and during postpartum for this group were different from the group reporting the fewest symptoms, and the symptoms they reported during the postpartum period were different from those of the middle group as well. Finally, the lower educational level is reflective of the younger age of the women in the most depressed sample.

Limitations

As with any study, limitations pose a risk in interpretation of the data. First, the nature of our study was largely exploratory to determine the role of daily hassles and quality of relationships among postpartum women. The small sample size limited the types of analyses possible as well as the generalizability of our findings to the larger population. Our sample also differed from the general population in that there were no teenage mothers, the women as a whole were highly educated, and they were enrolled via their health clinics. Additionally, shared method variance from the use of self-reporting surveys can result in biased or inaccurate information, thus use of more than one reporter or source of data to triangulate the study variables would strengthen the findings. A longitudinal study with an ecological focus looking at marital quality before, during, and after pregnancy could examine changes to the marital environment, the stressors prior to and after delivery, and the role of education or therapeutic interventions.

Implications

Individual therapy for the woman as well as couple or family therapy may allow for both traditional interventions as well as for creative strategies to alleviate postpartum depressive symptoms. Attention to relationship depth, arguments with family members, as well as demands from home may be helpful in this regard. Indeed, these relationship variables represent areas found to be amenable to intervention via psychotherapy, marital therapy, or family therapy (Clark, Tluczek, & Wenzel, 2003; Gollan, Friedman, & Miller, 2002).

Conclusion

In conclusion, this study controlled for depressive symptoms occurring during the pregnancy while exploring the relationship of daily stresses to reported levels of postpartum

depressive symptoms in the presence of relationship support and relationship depth. The use of relationship depth was unique in our study, and the findings are promising and should be replicated in a larger sample. In our study, arguments with family and relationship depth were significantly related to the dependent variable, having opposite effects. Consistent with prior research findings, arguments with family members increased reported symptoms of depression, while our study utilized relationship depth to explore a decrease in reported symptoms. The majority of the 15 postpartum depressed women reported an increase in arguments and a decrease in depth after the birth of the baby, indicating an important area for prevention and intervention. Continued early identification of women reporting depressive symptoms can limit their potentially detrimental impact on the marital relationship by engaging these women in appropriate therapeutic interventions. Further exploration of the ecological context for the home environment and of the marital dyad could further the understanding of the variables explored in this study, particularly by incorporating relationship depth to replicate the findings presented here.

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