
Postpartum Depression, Marital Dysfunction, and Infant Outcome: A Longitudinal Study

Gayle Roux, PhD, RN, CNS, NP-C
Cheryl Anderson, PhD, RN, MN, CNS
Chris Roan, BSW

Abstract

This longitudinal study explores the relationship of postpartum depression (PPD) and marital dysfunction on infant outcomes from birth to 2 1/2 years of age among middle-class, postpartum women. Participants were recruited during the prenatal period. Twelve mothers completed the study throughout a 2 1/2-year period. Questionnaires, semistructured interviews, and observations were used to collect data. Content analysis of the interviews (Morse & Field, 1995) was conducted and thematic patterns were identified. Clinical PPD and marital dysfunction (defined as little or no support or closeness, or verbal, emotional or physical abuse) characterized nearly one in three mothers. Four themes describing the women's postpartum progression were identified: stress, isolation, resentment, and eventual adjustment by creating a new normal. No major developmental delays or behavioral problems were found among the infants. Eight of the 12 mothers who were initially identified as breastfeeding nursed their infants for 6–18 months. Regardless of financial and educational advantages, mothers in the study experienced depression and marital dysfunction. These findings support other studies that confirm the lack of association of PPD with social class or marital status. Childbirth educators and other health care professionals are encouraged to continue providing expectant families with anticipatory education and community resources in order to increase awareness of mental health and marital risks during the postpartum transition.

Journal of Perinatal Education, 11(4), 25–36; *postpartum depression, marital dysfunction, infant outcomes.*

While over 80% of pregnant women develop a relatively mild mood disturbance called “baby blues” (Rosenthal & O’Grady, 1992), postpartum depression (PPD)

GAYLE ROUX is an assistant professor in the Maternal Child Nursing Department of the School of Nursing at Virginia Commonwealth University in Richmond, Virginia. She is also a nurse researcher in the VCU Building Interdisciplinary Research Careers in Women’s Health Scholars program. CHERYL ANDERSON is an assistant professor in the School of Nursing at the University of Texas at Arlington. She is also an advanced nurse practitioner in maternal child health. CHRIS ROAN worked as a research assistant with Dr. Anderson. She is a graduate of the University of Texas at Arlington, with a master’s degree in social work.

of a major or minor occurrence is a devastating mood disorder affecting approximately 12%-19% of all mothers (Beck, 1993, 1998; Beck & Gable, 2001). Despite considerable biological changes occurring during the postpartum period, a clear association between biologic variables and PPD has not been found. Variables such as prenatal depression and stressful life events (e.g., marital dysfunction or conflict) are gaining researchers' attention, with additional focus on effects to the infant. Given the potential significance of these variables, the purpose of this longitudinal study was to explore PPD, marital dysfunction, and infant outcome among a group of middle-class, postpartum mothers. Aggregation of quantitative and qualitative data was utilized to enhance the depth of the findings.

Review of the Literature

Individual studies have explored the impact of PPD and the quality of the marital relationship (Kung, 2000) and depression and marital conflict on infant outcome (Beck, 1995; Brazelton, Tronick, Adamson, Als, & Wise, 1975; Cogill, Caplan, Alexandra, Robson, & Kumar, 1986; Hall, Gurley, Sachs, & Kryscio, 1991; Murray, 1992; Stephens, 1999). A meta-analysis conducted by Beck (1996) revealed significant relationships between the following eight predictors: prenatal depression, history of previous depression, lack of social support, life stress, child-care stress, maternity blues, marital dissatisfaction, and prenatal anxiety.

Marital dysfunction (defined for this study as a lack of partner closeness or support, or a conflictive or abusive relationship) has implications for both adults and their children. In general, depressed women report more marital dysfunction than nondepressed women, which is illustrated by poor communication, friction, disengagement, and sexual problems (Kung, 2000). In addition, marital dysfunction persists long after the woman clinically recovers from the depression (Stein et al., 1991). Furthermore, the quality of the primary intimate relationship

and the presence of depressive symptoms have been shown to predict parenting attitudes (Hall et al., 1991).

Research on maternal-infant attachment behavior began over 30 years ago. In their classic work, Klaus and Kennell (1976) described a series of disorders that occurred as a result of maladaptive mothering behaviors due to the separation of mother and infant (e.g., vulnerable-child syndrome, battered-child syndrome, and the failure-to-thrive syndrome). Beck's (1995) meta-analysis revealed that PPD has a medium to large effect on mother-infant interaction during the first year following delivery and includes a consistent pattern of results. When compared with nondepressed mothers, depressed mothers demonstrated less affection and fewer responses to infant cues. Depressed mothers were also withdrawn or hostile. Their infants were fussier, more discontent, and made fewer positive facial expressions and vocalizations than the infants of nondepressed mothers (Beck, 1995). In a four-year follow-up study, Coghill and colleagues (1986) found that the children of mothers who were diagnosed with PPD were significantly delayed on a general cognitive index when compared to children in the control group.

Due to their emotional status, depressed mothers may also be more likely to bottlefeed their infants. Mothers declining to breastfeed have been characterized as lacking maternal confidence or harboring negative feelings regarding breastfeeding (Dennis, 2002). It can be suggested that women suffering PPD may lack confidence in their role as a mother and may not readily perceive the benefits of breastfeeding. Successful breastfeeding promotes the relationship between mother and infant (Tarkka, Paunonen & Laippala, 1998) and, hence, enhances infant outcome. If a maternal-infant bond is not fortified, a disruption in maternal-infant communication may result in infants responding with distress, irritability, or avoidance (Beck, 1995, 1998; Brazelton et al., 1975; Murray, 1992; Stephens, 1999).

Method

After receiving university and medical center Institutional Review Board approval, the research team approached a convenience sample of middle-class pregnant women for potential participation in the study. The convenience sample was chosen from a tertiary hospital, physicians' offices, and a fee-for-service, community-

Marital dysfunction persists long after the woman clinically recovers from the depression.

based childbirth education class. Middle-class women were selected in order to explore the prevalence of risk factors among a group of demographically advantaged women. Mothers were included in the sample if, by self-report, they defined themselves as middle-class. Thirty-one mothers were obtained prenatally; however, 12 mothers completed the entire 2 1/2-year study.

Quantitative data were collected by using five tools to measure PPD, marital dysfunction, and infant outcomes. Throughout the 2 1/2-year period, home interviews were conducted to explore the mothers' feelings during the extended postpartum period and to determine any experiences of PPD or marital dysfunction. At the conclusion of the study, quantitative and qualitative findings were aggregated to compare and enrich the findings. Detailed quantitative findings were previously reported in an earlier issue of this journal (Anderson, Roux, & Pruitt, 2002).

Instruments

The following five instruments were used in this study:

1. the Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987) to determine PPD;
2. the Abuse Assessment Screen (Nursing Research Consortium on Violence and Abuse, 1991) to determine partner abuse;
3. a researcher-developed tool to measure partner support and closeness and perception of abuse to determine marital dysfunction;
4. the Infant Profile Data Sheet to assess the infants' birth information, newborn behaviors, breastfeeding history, and growth and development; and
5. the Denver Developmental Screening Tool (Powell, 1981) to assess infant development.

The Edinburgh Postnatal Depression Scale (EPDS). The EPDS consists of 10 short statements of common depressive symptoms, with four possible replies for each symptom. Respondents described how they felt over the past week. In a previous sample of depressed women who were diagnosed by the Research Diagnostic Criteria for depressive illness, a score of 12–13 on the EPDS identified them as depressive. Original scoring of the EPDS, as determined by the authors, recommends a cut-

off score of 12–13 for depression. The EPDS has satisfactory validity and is sensitive to changes in the severity of depression over time (Cox et al., 1987). In postpartum samples, sensitivity and specificity of the EPDS have been found to be 86%–76%, respectively. The EPDS has been reported as a validated measure of depressive symptoms in the antenatal and postnatal period with a coefficient alpha of 0.82 when used before and after delivery (Deater-Deckard, Pickering, Dunn, & Golding, 1998).

The Abuse Assessment Screen (AAS). The AAS consists of three questions that identify the type and intensity of violence experienced over a two-year period (Nursing Research Consortium on Violence and Abuse, 1991). This tool has been used to assess partner abuse in both pregnant and nonpregnant women. The effectiveness of two questions (“Have you ever been hit, slapped, kicked, or otherwise physically hurt by your male partner?” and “Have you ever been forced to have sexual activities?”) identified 61% of a sample of women who presented in the emergency department for vaginal bleeding as having experienced abuse (McFarlane, Greenberg, Weltge, & Watson, 1995). These questions were used in this study because of their reported validity and reliability, ease in use, correlation with longer research instruments, and use in other research studies as a measure of abuse (Curry, 1998). Criterion related validity has been established comparing scores on the AAS with three other measures of violence (Campbell, Soeken, McFarlane, & Parker, 1998).

Researcher-developed tool. Due to the unknown availability of a short tool designed to explore the study's selected variables, the third instrument was developed by the researchers and used to assess the history of depression and past occurrences of PPD, social support and partner closeness (marital dysfunction), and selected demographics. Fifteen questions explored happiness before and during the pregnancy and perceptions of partner support and closeness, including perception of abuse. Questions were rated on a 0–6 scale, with 0 indicating “does not describe your feelings at all” and 6 indicating “describes your feelings exactly.” The 15 items represented the literature in the area (face validity) and had a Cronbach's alpha of .85 with the sample of women in this study.

Infant Profile Data Sheet (IPDS). General infant data were collected through the IPDS, a formatted checklist for noting the following: gestational age; birth weight; complications at birth; difficulties with sucking, feeding/eating, and sleeping; and irritability of the newborn. A breastfeeding history was also incorporated.

Denver Developmental Screening Tool (DDST). The standardized DDST was used to measure the infants' growth and development at approximately 2 1/2 years of age. The DDST is designed to identify developmental delays in babies and children under 6 years old. It provides a profile of the child in the areas of gross motor, language, personal/social, and fine motor skills. Procedure dictates that if the score is questionable or abnormal in any of the four areas on two administrations of the test, the child should be referred for additional evaluation (Powell, 1981).

Data Collection and Analysis. Data collection took place over a 2 1/2-year period. At every contact, mothers were asked to complete the written instruments that assessed PPD, marital dysfunction (abuse), and the infant outcome data (minus birth-related information). If contact was made over the phone, questionnaires were read to the mothers. Completing the questionnaires took approximately 15 minutes. After collecting the written data, researchers again obtained the participants' verbal consent to discuss their experiences in a series of interviews. The mothers scheduled a convenient date, time, and place for the interviews. The interviews took place in a private setting, usually at the mother's home. Interviews were conducted during the day. Participants' partners were not present during the interview. Children, if present in the home, were often in another room or entertained by the research assistant who also attended the majority of interviews. Each mother received 2–7 home visits.

Excluding two exceptions at 5 weeks and 49 weeks, the initial interview was conducted between 4 and 24 weeks postpartum. For the majority of mothers, second interviews took place at approximately 36 weeks, while third and fourth interviews were conducted between 52 and 75 weeks postpartum. Two subjects were interviewed more than four times due to health concerns of either the mother or infant. Home visits ranged from 1–3 hours in length due to variations in individual anxie-

ties disclosed by the mothers such as partner abuse or infant concerns. Phone calls varied from 15–45 minutes. Audiotapes, obtained at home visits and some later interviews, were transcribed. The researchers reviewed the transcriptions to detect errors or omissions. If partner abuse or depression was reported at any contact, community referrals were provided.

At each contact, the IPDS was used to collect infant data. During home visits, the researchers recorded their observations of maternal-infant interactions including eye contact, en face behaviors, talking and playing with the infant, attention, and affection to the infant. In the last interview, the DDST was used to screen toddlers for developmental delays. If the toddler failed in one or more areas, an additional home visit was conducted to repeat developmental testing.

Content analysis of the interview transcripts examined and grouped participant responses by category and provided a descriptive name for each group (Morse & Field, 1995). Data were examined for common categories. When responses to each category reached saturation, descriptions were written (Morse & Field, 1995). The quantitative instruments were scored and descriptive data were utilized to illustrate the background of the mothers and their infants. The qualitative data were aggregated with the quantitative data in order to further illustrate the incidence and context of the home environment, any experiences of PPD or marital dysfunction, and infant outcome.

Results

Sample

The initial postpartum interview included a convenience sample of 18 mothers. Twelve mothers continued in the study until their infants were approximately 2 1/2 years of age or older. Mothers were approximately 34.5 years old, with a range of 28–41 years. Seventeen of the mothers were Caucasian; one was Hispanic. Participants were employed outside of the home—except for two of the mothers—and generally worked in professional occupations such as dentist, lawyer, nurse, or business executive. Despite their demanding work schedules, nine mothers had 2–4 children. Two of the three mothers with only one child became pregnant with their second child before the completion of this study. All of the mothers were

married, had a mean of 15.4 years of education, had health insurance, and received prenatal care. All of the subjects lived in the surrounding suburbs of a large urban city with over one million inhabitants.

Depression and Marital Dysfunction

One in three mothers (33%) reported depression prior to the postpartum interview. Two mothers reported chronic depression and two mothers reported depression during pregnancy. Four additional mothers had scored above 12 on the EPDS prenatally but did not verbally report signs or symptoms of depression. No mother reported past PPD; however, one subject reported a history of PPD “among other family members.” Twenty-five percent of mothers reported past infant losses.

Initial postnatal depression scores (obtained at an average of 15 weeks) ranged between 0–12 with an average score of 6.0 ($n=18$). Scores obtained at the first postpartum interview were higher than EPDS scores collected at subsequent contacts. Between the initial interviews and subsequent contacts, six mothers (33%) withdrew from the study, resulting in a final sample of 12 mothers. EPDS scores from the initial interviews with these withdrawing participants indicated no depression: An average score was 3.5, ranging from 2–9.

The initial interview with 18 participants took place between 5 days to 24 weeks postpartum. During these interviews, over 1/3 (33%) of the 18 mothers could have been classified as clinically depressed by the EPDS. One mother scored 12 on the EPDS. On self-report, four mothers *verbally* indicated feelings of depression, but demonstrated scores of 0, 3, 10, and 11 on the EPDS. Another participant was diagnosed by her physician as depressed and placed on an antidepressant medication prior to the first home visit. Three additional women scored between 9–11 on the EPDS. According to the authors of the EPDS, if other presenting factors exist, such as a verbalization of depression, scores in this range could indicate a classification of clinical depression; however, these women did not verbalize signs and symptoms of depression. Two women who were diagnosed with PPD either by EPDS scores (>11) or by a physician’s diagnosis discussed their depression experiences. One of them described her experience, as presented below:

Ms. H. (EPDS = 12) and her husband were married 11 years before conceiving because Mr. H. “did not want

to have any children.” Mr. H. continually reminded his wife that he had told her that when they married. The pregnancy resulted because of Ms. H.’s insistence and her “thoughts of suicide if she could never have a baby.”

Two additional women scoring between 9–11 on the EPDS verbalized feelings of depression. Both of these women commented on the lack of support from or closeness to either their partner or their parents; one reported a history of chronic depression. The other three women who scored between 9–11 on the EPDS did not verbalize depression; however, they did report family stressors—the “recent loss of a stepmother and two pets,” the lack of partner closeness, and marital and physical abuse. Ms. P. described her marital relationship and home situations, as presented below:

Ms. P. denied abuse in the current marriage. However, her partner was described as “controlling . . . he pins/holds me down so he can talk.” Ms. P. was somewhat reluctant to state this and provided the rationalization that he is “diabetic and, with low blood sugars, he gets irritable.” Assessment with the AAS revealed inconsistent information. At some contacts, Ms. P. reported her husband’s controlling behaviors and forced sexual activities (“I was made to feel like it is my role to put out”), while at other contacts she denied any difficulties. Ms. P. described herself as irritable and said that she yelled at the family. One day, while dressing for work, Mr. P. was watching the infant when the child rolled off the bed and dislocated his shoulder. Both parents blamed each other and “yelled at each other.” Mr. P. looked at the infant and said, “You can’t get on the bed anymore because you have two inept parents.” Midway through the study, Ms. P.’s partner decided the family should move. They relocated to a rural area 50 miles away. Ms. P. remarked several times in the last visits how difficult it “now was to see my friends” and joked about how she told her husband that he had taken her too far away from her friends.

In her first and only home visit, Ms. S. disclosed (both verbally and in writing on the AAS) severe physical abuse from her partner. Yet, she denied depression (both verbally and in the EPDS; score = 9) because “things were so much better now” that she was separated and going to live with her father. Ms. S. revealed a history of abuse for years before the pregnancy (requiring a hospital visit), during the pregnancy (but without battering), and at

two weeks postpartum. She described the most recent postpartum event when she “was choked until unconsciousness . . . and awoke draped over the side of the bathtub . . . with her two children gone.”

Of the two women verbalizing depression and exhibiting low EPDS scores, one described verbal and emotional abuse from her partner. However, when completing the AAS, she did not consider the circumstances as abusive. She reported the following circumstances:

Ms. K. discussed a previously physically abusive relationship, but she denied physical abuse in the current marriage. During the home visit, Ms. K. reported, “The worst is over. At the first two months, I had no support from my husband. He started a new business and worked all the time with long hours.” At 8 weeks postpartum, Ms. K. had concert tickets with a friend. Attending the event would have been her first time out since having the baby. Her husband offered to baby-sit. On the day of the concert, however, he said he had to work. Ms. K. missed the concert because another babysitter was not available. She got very upset and her husband sent her flowers. “He’s sent me more flowers this past four months than our entire nine years of marriage.” Ms. K. also stated, “He yells and hollers at me . . . doesn’t understand my needs . . . he flies off the handle . . .” Regarding marital abuse, Ms. K. remarked, “Sex 4/day . . . a chore . . . no choice . . . ruined it for me.”

The second mother stated that her verbalization of depression was “mostly due to [nonpregnancy-related] stress because my baby and I are both ill.” Subsequently, both mother and infant were hospitalized.

At the second contact, mothers’ (n = 13) depression scores ranged between 1 and 15. Mean EPDS scores decreased from the initial interviews with only one mother indicating depression (EPDS of 15) at 47 weeks follow-up. When asked why she felt she scored so high at this time and not at the first postpartum visit, the mother reported numerous personal medical concerns. She later required a hysterectomy.

At both the third and fourth contacts, slightly lower depression scores (n = 12) ranged from 0 to 10. During the third home visit, one woman at 40 weeks follow-up expressed continued feelings of depression, yet she scored 6 on the EPDS. This subject’s previous EPDS scores were all under 6. She previously verbalized fre-

quent verbal and marital abuse, but she had not indicated abuse on the AAS.

Thematic Analysis of Interviews

Content analysis of the interviews (Morse & Field, 1995) revealed four themes that described the mothers’ experiences. The participants’ exact words were used for these themes. The mothers often initially described a period of feeling fatigued and overwhelmed during their initiation to parenting. A lack of social support and difficulty bridging communication when their partner returned home from work contributed to a sense of isolation. Gradually, the mothers described a return to a new normal by establishing contacts with other mothers, taking a little more time for themselves for activities such as exercise, returning to a more productive balance of career and family time, and enjoying their parenting.

Theme 1 – Stress: “Why am I feeling overwhelmed?”

Stress was common among the participants and noted to be a consequence of a variety of stressors, many of which were not directly related to childbirth. Mothers voiced appropriate feelings of love and bonding with their infant, but were overwhelmed by the lengthy period of adjustment, lack of sleep, and the emotional restructuring needed for themselves and their relationships. Following are some of the mothers’ descriptions of their experiences during the first months postpartum:

[After delivery] I was expecting improvement immediately and instead it’s not that. You are totally worn out from the delivery . . . I adored her, but I was in the house with her all day, she wouldn’t nap. I was stressed 24 hours a day, no sleep. That was like that for the first three months.

Why was I feeling overwhelmed? . . . Work was stressing me out . . . my husband was driving me crazy . . . I was going through my what’s-going-on-here stage.

Mothers often initially described a period of feeling fatigued and overwhelmed during their initiation to parenting.

[We were] trying to sell this house, move into another house and packing—with two kids!

[Due to] lack of sleep . . . it's a real shocker that I scored so high [on the EPDS]. I think I was just a little overwhelmed and everything. I would be curious to know how other women—were they . . . right after the pregnancy? It will be interesting to see how I do with this [current pregnancy].

[After the baby was born] I was not feeling good about myself. I was really stressed out for about three months. It was mostly things outside of myself that have mostly affected me. I had just lost my stepmother and two pets.

I was stressed out with my husband.

[I felt] overwhelmed with being a wife and mother. My plate is so full . . . hard to prioritize. I didn't expect going from one to two would be such a transition.

If I don't get my sleep, I am a b——.

I was stressed out with the kids. I was feeling sorry for myself.

Incredibly overwhelmed . . . I am just drained. [Sleep?] What's that? It's interrupted and short.

Theme 2 – An adult in an infant's world: “I felt more isolated and alone.” The women admitted having few adults to talk to or share feelings with regarding their emotions and experiences after delivery. The mothers disclosed feelings of finding it difficult to link the world of caring for an infant with their husband's world when he returned home from work. The mothers expressed this isolation as follows:

[After the baby] I was not feeling good about myself with no adults to talk to. I was feeling isolated.

[My husband] doesn't want to come home and deal with any problems. I felt more isolated and alone. I'm independent—but if I'm that independent, I don't need to be married.”

[My husband] gets home and doesn't want adult conversation.

Theme 3 – Role Change: “I am sometimes resentful.”

The women compared their home situations or relationships to others and believed they were missing out on life. Balancing career and parenting duties raised issues of time management, resentment of financial needs that required working outside the home, and “making meaning” out of the choices they were living. The mothers expressed this struggle as follows:

Sometimes I'd like to quit everything and stay home. I'm jealous of people that get to stay home.

I guess I am sometimes resentful.

Maybe some resentment with my husband . . . due to [my] having more responsibility . . .”

Theme 4 – A new normal: “The whole world looks better.” As the women adjusted to parenting and their multiple roles, they began to notice positive changes, resume old routines, and make plans for the future. During the 2 1/2-year study, many of these readjustments were not consistently apparent until the first year and extended into the second year, postpartum. Mothers expressed more satisfaction and well-being as follows:

[I am] back into a position at work that I adored and doing really well at it. I got back some of the personal stuff . . . like, my self-esteem. I think that had a lot to with it.

I'm very satisfied now. He doesn't like to change diapers, but he does it!

I'm doing a lot better now [after a recent hysterectomy]. I think it helped my attitude. I was anemic. [You feel] better when you have your health—everything just looks better. The whole world looks better.

Now that I quit breastfeeding the baby, it's time to go on a diet. I'm going to start exercising and doing all those things.

It was the lonely factor . . . now I know more moms. [My baby] is in playgroups and I meet more mothers that way.

Infant Outcome

Infant outcome was measured by information derived from the IPDS and the DDST. At the initial interview, the IPDS obtained birth information such as weight, gestational age, neonatal intensive care unit (NICU) admission, and behavioral patterns with sleeping, eating, and irritability (assessed at each contact). Breastfeeding history (initiation and duration) was also acquired. At the last home visit, the DDST was also used to assess the infant's long-term developmental progress at approximately 2 1/2 years of age.

From initial interviews, birth information of 18 infants revealed birthweights ranging from 5 pounds/6 ounces to 9 pounds/11 ounces (2438 to 4394 grams) with a mean birthweight of 7 pounds/5 ounces (3317 grams). Gestational age ranged from 36.5–41 weeks at delivery, with a mean age of 38–39 weeks at delivery. Two full-term infants were born with congenital abnormalities. One infant with multiple congenital abnormalities subsequently died, while a second infant was born with a congenital clubfoot and progressed well. Initially, 12 out of 18 mothers were identified as breastfeeding. No infant behavioral difficulties with sucking/eating, sleeping, irritability, and other newborn problems were reported.

Eight of the 12 mothers who identified initially as breastfeeding nursed their infants for 6–18 months. Mothers who made this choice were adamant about their decision. They chose to breastfeed because of economic savings, others friends who breastfed, previous breastfeeding, or “it is the pediatric guidelines.” Following are some of the mothers' comments about breastfeeding:

I breastfed my first child for the first six months, so when I was pregnant with N., I knew that I was going to breastfeed again, so I never gave it much of a thought as being something I wouldn't do.

I intended to do it for 12 months, but [my baby] was passionate about it.

Factors influencing why women stopped breastfeeding included the lack of support from friends and family, the need to return to work, medical reasons (decreased milk supply, breast infection), and self-consciousness when breastfeeding in public. The mothers' comments included the following:

[My baby] was about 6 months old . . . she got to where she wouldn't nurse. I'll be real honest with you. I smoked and I drank coffee and it was not best for her.

I breastfed for, I think, three months, then I went back to work. At work, it's not like I have a place to go to in the office where you can pump during the day and stuff like that. The thing is, my doctor will probably want me to start on Zoloft immediately after birth for this next one, which I will delay for three months.

I did it about nine months. I would have done it longer, but my milk dried up. At work, I would forget to pump . . . ended up getting a breast infection.

Later home visits to families found healthy, happy toddlers. Infants with NICU histories revealed no subsequent concerns or only minor behavioral difficulties, which had often abated. Mothers' reports included the following:

[At first, he] didn't like breastfeeding and was very gaggy, which made him irritable. But he's doing well now and has breastfed for several months.

[He] was about six months behind in his language development because of his ear problems [infant had tubes placed in his ears] . . . [He] sleeps very well. When he gets frustrated . . . head down on floor and cries . . . [He] eats very good, eats anything except cheese.

[Early on, he was] fussy and a poor eater. [Infant was 37 weeks at delivery.]

Other infants with unremarkable birth histories displayed no major concerns with eating, sleeping, or irritability. One mother, whose infant was hospitalized at 1.5 years of age, described her baby as a “cuddler who doesn't like to sleep. [He] is beginning with the temper tantrums when he will scream, cry or throw things, and is incredibly dependent on me.” The mother admitted feeling anxious about her children choking on things. She also expressed anxiety over leaving her children when she and her husband take a trip, as illustrated below:

No one can care for them but me, an irrational fear. He's an excellent father . . . But when we missed the plane once, it almost happened that we had to come home in separate planes, me with baby and him with

[our 2-year-old]. I started crying, concerned he could not take care of her.

At the end of two years, the toddlers did not appear to be affected by maternal depression or marital dysfunction. Mothers generally provided their infants with attention and affectionate play. Final DDST scores were within normal limits or advanced in some areas for all toddlers at approximately 2 1/2 years old. Only two infants required a repeat testing for a failure in one area.

Discussion

This longitudinal study investigated an advantaged, middle-class group of professional women on the relationship between PPD and marital dysfunction and the impact on infant outcome. Both interviews and written instruments were used to obtain the information to provide cross-data validity checks (Patton, 1999) and to avoid overestimation of phenomena, as is characteristically noted with self-reporting (Gotlib, Whiffen, Mount, Milne, & Corby, 1989).

Limitations of the study included a small sample size in one geographical setting. The inconvenience in scheduling interviews due to a hectic lifestyle and a lack of time, return to work, or a family move resulted in an attrition rate of over 50%. However, mothers who elected to terminate the study early were similar to the remaining mothers in both demographic data and EPDS scores. Reasons for remaining in the study might have been a personal perception of a positive benefit in discussing their experiences with a professional, or a need to discuss difficulties with depression or marital dysfunction. Representativeness of this small sample should be viewed with caution. However, one must also consider that these findings are not uncommon; rather, they are overlooked by health care providers and researchers who assume that depression and abuse are more common among low-income women with fewer resources. In addition, this study's lengthy rapport and the researchers' high level of comfort with the mothers for over 2 1/2 years, along with quantitative data of their experiences expressed in interviews, might provide a deeper explanation of their home and emotional context. Further longitudinal research is necessary with this advantaged population.

Additional limitations include the need for further

validation of the researcher-developed instrument and use of a larger sample for more psychometric testing on the instrument. Lastly, interviews varied across a wide timeframe of events and biopsychosocial changes due to accessibility of mothers and the logistics of meetings. Interviews conducted at five days and 49 weeks lead to an inconsistent timeframe. The mother interviewed at five days postpartum had an EPDS score of 3; however, researchers were unable to contact her for future home visits and she was subsequently withdrawn from the study. The other mother first seen at 49 weeks reported PPD and antidepressant use since 12 weeks postpartum. Interviews, therefore, ranged between 4 and 49 weeks (mean: 15 weeks). While this timeframe was inconsistent among participants, it did allow for a longitudinal perspective of a diagnosis of PPD rather than "baby blues." PPD generally peaks between 2–8 weeks after delivery (Horowitz, et al., 2001) and remits within the first 2–3 months postpartum; however, up to 70% of depressed women can continue to experience symptoms at 6 months to a year after delivery (Whiffen & Gotlib, 1993). Given the natural history of PPD (start, peak, and end) plus other potential extraneous variables, a limitation will always exist. In this study, for example, some mothers remembered information better than others over the 2 1/2-year period.

Verbalization of marital dysfunction (described as lacking partner support or closeness) or partner abuse characterized nearly one in three of the women—a finding that exposes the vulnerability of this sample of new mothers. The incidence of marital dysfunction was evident in both the quantitative and qualitative data. While a marital relationship often changes during pregnancy when adapting to the coming family addition, some families continue or begin partner abuse. Prospective and retrospective studies indicate that 7%–65% of pregnant women experience abuse during pregnancy (Curry, 1998). The abuse commonly extends to the postpartum period.

Mothers in this study addressed marital issues, subse-

The incidence of marital dysfunction was evident in both the quantitative and qualitative data.

quent depression (reported by verbalization in interviews or EPDS scores), and the challenges of new parenting roles. However, participants provided positive environments for their children. Among this sample of mothers, higher maternal education and income, outside jobs, nannies, and a choice to breastfeed could have offset any possible negative effects to the children.

Mean overall EPDS scores decreased over time from the first to fourth interviews. Approximately 1/3 of the mothers were initially clinically diagnosed as depressed by EPDS scores, verbalization, or a physician's diagnosis. Regardless of financial and educational advantages, the mothers appeared to grapple with some of the social issues of being new parents, including feeling overwhelmed and isolated. This finding offers additional support to other study results confirming the lack of association of PPD with social class. The high incidence of clinical depression in this sample of women may reflect a self-selection bias, a common finding with self-reporting, or a true percentage and the identification of an at-risk population often unrecognized. Previous studies have identified self-reported rates of PPD at 25% and higher (Horowitz, Damato, Solon, von Metzsch, & Gill, 1995; McIntosh, 1993; Sequin, Potvin, & St. Dennis, 1999; Zlotnick, Johnson, Miller, Pearlstein, & Howard, 2001). Logsdon, McBride, and Birkner (1994) reported a 32% PPD rate at one month postdelivery.

Research extended over a 2 1/2-year timeframe in order to obtain more precise data on the newborns' growth and development and to accurately assess mothers with PPD or marital dysfunction. While investigators consider the need for a common operational definition of postpartum depression, researchers must also continue to explore the presence and consequence of PPD among all women, whether advantaged or of lower socioeconomic status.

In this study, the postpartum transition was characterized by four theme clusters that described the participants' experiences over the 2 1/2-year period. Experiencing stress, isolation, and resentment described the mothers' early postpartum period; resuming old routines and planning new activities described their later postpartum period as the mothers assumed "a new normal." Feeling fatigued and overwhelmed and lacking adult company during the earlier postpartum period may be important variables relating to the incidence of PPD or the general, emotional well-being of new mothers.

Despite marital dysfunction, partner abuse, or PPD, infants appeared generally unaffected, behaviorally or developmentally. However, a 2 1/2-year study may not be long enough to assess potential developmental problems as the children grow older. Childbirth educators (CBEs) and nurses are encouraged to provide anticipatory education on breastfeeding and role changes in parenting, as well as information on community resources to access and treat conditions when difficulties arise. The findings in this study suggest that CBEs and other health care providers need to discuss strategies to increase utilization of personal and community support systems to enhance adaptation during the postpartum period. Additional CBE workshops to update educators on common mental health issues such as PPD and marital dysfunction may be an important link to providing comprehensive resources for childbearing families. Assessments at birth and during follow-up periods must always consider these psychosocial issues for all women. Assessment and documentation of marital dysfunction and partner abuse, social resources, chronic stressors, and depression are needed to ensure early diagnosis, referral, and implementation of interventions that can enhance the well-being of all mothers and their children. This preparation can foster adjustment to improve health outcomes for mothers and their children and partners during the postpartum years. A suggested addition to the CBE curriculum is a dialogue led by an experienced cohort of mothers with the expectant parents to discuss personal struggles and successful strategies to enhance well-being during the postpartum years.

Acknowledgment

This study was partially funded by a Research Enhancement Award to Dr. Cheryl Anderson from the University of Texas at Arlington.

A suggested addition to the CBE curriculum is a dialogue led by an experienced cohort of mothers with the expectant parents to discuss personal struggles and successful strategies to enhance well-being during the postpartum years.

References

- Anderson, C., Roux, G., & Pruitt, A. (2002). Prenatal depression, violence, substance use, and perception of support in pregnant middle-class women. *Journal of Perinatal Education, 11*(1), 14–21.
- Beck, C. (1993). Teetering on the edge: A substantive theory of postpartum depression. *Nursing Research, 42*, 42–48.
- Beck, C. (1995). The effect of postpartum depression on maternal infant interaction: A meta-analysis. *Nursing Research, 44*, 298–304.
- Beck, C. (1996). Meta-analysis of predictors of postpartum depression. *Nursing Research, 45*, 297–303.
- Beck, C. (1998). A checklist to identify women at risk for developing postpartum depression. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 27*(1), 39–47.
- Beck, C., & Gable, R. (2001). Comparative analysis of the performance of the Postpartum Depression Screening Scale with two other depression instruments. *Nursing Research, 50*, 242–250.
- Brazelton, T., Tronick, E., Adamson, C., Als, H., & Wise, S. (1975). Early mother-infant reciprocity. In Ciba Foundation, #33, *Parent-infant interaction*. Amsterdam: Elsevier.
- Campbell, J., Soeken, K., McFarlane, J., & Parker, B. (1998). Risk factors for femicide among pregnant and nonpregnant battered women. In J. C. Campbell (Ed.), *Empowering survivors of abuse: Health care for battered women and their children* (pp. 90–97). London: Sage Publications.
- Cogill, S., Caplan, H., Alexandra, H., Robson, K., & Kumar, R. (1986). Impact of postnatal depression on cognitive development of young children. *British Medical Journal, 292*, 1165–1167.
- Cox, J., Holden, M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry, 150*, 782–786.
- Curry, M. (1998). The interrelationships between abuse, substance use, and psychosocial stress during pregnancy. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 27*(6), 692–699.
- Deater-Deckard, K., Pickering, K., Dunn, J., & Golding, J. (1998). Family structure and depressive symptoms in men preceding and following the birth of a child. *American Journal of Psychiatry, 55*(1), 818–823.
- Dennis, C. (2002). Breastfeeding initiation and duration: A 1990–2000 literature review. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 31*, 12–32.
- Gotlib, I. H., Whiffen, V. E., Mount, J. H., Milne, K., & Corby, N. I. (1989). Prevalence rates and demographic characteristics associated with depression in pregnancy and the postpartum. *Journal of Consulting and Clinical Psychology, 57*(2), 269–274.
- Hall, L., Gurley, D., Sachs, B., & Kryscio, R. (1991). Psychosocial predictors of maternal depressive symptoms, parenting attitudes and child behavior in single-parenting families. *Nursing Research, 40*(4), 214–219.
- Horowitz, J., Bell, M., Tryulski, J., Munro, B., Moser, D., Hartz, S., McCordie, L., & Sakol, E. (2001). Promoting responsiveness between mothers with depressant symptoms and their infants. *Journal of Nursing Scholarship, 33*, 323–329.
- Horowitz, J., Damato, E., Solon, L., von Metzsch, G., & Gill, V. (1995). Postpartum depression: Issues in clinical assessment. *Journal of Perinatology, 15*, 268–278.
- Klaus, M., & Kennell, J. (1976). *Maternal infant bonding*. St Louis, MO: C.V. Mosby.
- Kung, W. (2000). The intertwined relationship between depression and marital distress: Elements of marital therapy conducive to effective treatment outcome. *Journal of Marital and Family Therapy, 26*, 51–63.
- Logsdon, M. C., McBride, A., & Birkner, J. C. (1994). Social support and postpartum depression. *Research in Nursing & Health, 17*, 449–467.
- McFarlane, J., Greenberg, L., Weltge, A., & Watson, M. (1995). Identification of abuse in emergency department: Effectiveness of a two-question screening tool. *Journal of Emergency Nursing, 21*(5), 391–394.
- McIntosh, J. (1993). The experience of motherhood and the development of depression in the postnatal period. *Journal of Clinical Nursing, 2*, 243–249.
- Morse, J., & Field, P. (1995). *Qualitative research methods for health professionals*. Thousand Oaks, CA: Sage Publications.
- Murray, L. (1992). The impact of postnatal depression on infant development. *Journal of Child Psychology & Psychiatry, 33*, 543–561.
- Nursing Research Consortium on Violence and Abuse. (1991). Abuse assessment screen. In J. Campbell & J. Humphreys (Eds.), *Nursing care of survivors of family violence* (1993, p. 252). St. Louis, MO: Mosby.
- Patton, M. (1999). Enhancing the quality and credibility of qualitative analysis. *HSR: Health Services Research, 34*, 1189–1209.
- Powell, M. (1981). *Assessment and management of developmental changes and problems in children*. St Louis, MO: Mosby.
- Rosenthal, M., & O'Grady, J. (1992). Affective and anxiety disorders. In J. O'Grady & M. Rosenthal (Eds.), *Obstetrics: Psychological and psychiatric syndromes* (p. 109). Washington, DC: American Psychiatric Press.
- Sequin, L., Potvin, L., & St. Dennis, M. (1999). Depressive symptoms in the late postpartum among low socioeconomic status women. *Birth, 26*, 157–163.
- Stein, A., Gath, D., Bucher, J., Bond, A., Day, A., & Cooper, J. (1991). Multidisciplinary perspectives on postpartum de-

Postpartum Depression, Marital Dysfunction, and Infant Outcome: A Longitudinal Study

- pression: An anthropological critique. *Social Science Medicine*, 17, 1027–1041.
- Stephens, D. (1999). Battered womens' views of their children. *Journal of Interpersonal Violence*, 14, 731–746.
- Tarkka, M., Paunonen, M., & Laippala, P. (1998). What contributes to breastfeeding success after childbirth in a maternity ward in Finland? *Birth*, 25, 175–181.
- Whiffen, V., & Gotlib, L. (1993). Comparison of postpartum and nonpostpartum depression: Clinical presentation, psychiatric history, and psychosocial functioning. *Journal of Consulting and Clinical Psychology*, 61, 485–494.
- Zlotnick, C., Johnson, S., Miller, I., Pearlstein, T., & Howard, M. (2001). Postpartum depression in women receiving public assistance: Pilot study of an interpersonal-therapy-oriented group intervention. *American Journal of Psychiatry*, 158, 638–640.