

ORIGINAL RESEARCH

Breast-Feeding and Postpartum Depression: Is There a Relationship?

Shaila Misri, MD, FRCPC¹, Dana A Sinclair, PhD², Annie J Kuan, BA³

Objective: To study the relationship between breast-feeding cessation and the onset of postpartum depression.

Method: The association between breast-feeding and depression was retrospectively examined in an obstetrical outpatient sample of 51 postpartum women who were suffering from major depression and who had stopped breast-feeding. Self-report questionnaire data were obtained from the subjects; the severity of the illness and the clinical course of each subject were evaluated.

Results: The majority (39 out of 51; 83%) of the women reported that their depression began before the cessation of breast-feeding, while only 8 patients (17%) stated that their depression was subsequent to breast-feeding cessation.

Conclusions: In an outpatient sample of depressed postpartum women, the onset of depression preceded the cessation of breast-feeding. The severity of the illness did not appear to influence breast-feeding persistence significantly.

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Key Words: postpartum depression, breast-feeding

Researchers and scientists have focused on childbirth related mood disorders in women for centuries. A renewed interest in this old subject matter, first clearly identified and defined by Marcé, has led to the establishment of reproductive psychiatry clinics across North America (1). The repro-

ductive psychiatry clinic deals with women who experience emotional problems during their reproductive life cycle of pregnancy, postpartum, premenstruum, and menopause.

One of the significant, yet puzzling variables encountered by the reproductive psychiatrist, is the question of whether a relationship exists between hormonal fluctuations and the onset of mood disorders in women during their reproductive life changes. For example, women experience significant hormonal changes premenstrually, during pregnancy, in the postpartum, and, finally, during menopause. A percentage of these women report moderate to severe depression during these reproductive events.

In 20 years of clinical experience with obstetrical patients, the senior author observed an association between postpartum depression and the cessation of nursing. In some women, the onset of postpartum depression followed the cessation of nursing, while in other women the depression occurred prior to the termination of breast-feeding. This clinical observation led to further thinking that a hormonal association between postpartum depression and breast-feeding may exist. A survey of the literature shows that a correlation between the 2 is

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¹Clinical Professor, Departments of Psychiatry and Obstetrics/Gynaecology, University of British Columbia; Director, Reproductive Psychiatry Programs, St Paul's Hospital and BC Women's Hospital and Health Centre, Vancouver, British Columbia.

²Research Psychologist, Reproductive Psychiatry Program, St Paul's Hospital, Vancouver, British Columbia.

³Research Assistant, Reproductive Psychiatry Program, BC Women's Hospital and Health Centre, Vancouver, British Columbia.

Address for correspondence: Dr S Misri, Reproductive Psychiatry Program, St Paul's Hospital, 1081 Burrard Street, Vancouver, BC V6Z 1Y6

poorly understood. In order to further investigate this clinical observation, a study was undertaken in an obstetrical population of women referred to the reproductive psychiatry clinics at 2 major teaching hospitals affiliated with the University of British Columbia: St Paul's Hospital and BC Women's Hospital in Vancouver.

Breast-feeding has been widely promoted and supported as nutritionally advantageous for infants in the first 6 months of life (2,3). Furthermore, recent studies indicate that breast-feeding has psychological benefits for both mother and child (4,5). Not surprisingly, the frequency and duration of breast-feeding in developed countries has increased dramatically in recent years (6–9). Despite the high proportion of women who attempt to breast-feed, many persist for only a short period of time (10,11).

Research has begun to examine a variety of hormonal and social factors associated with breast-feeding persistence and the intention to breast-feed, although little attention has focused directly on the relationship between depression and breast-feeding (10–14). Several studies have suggested that hormonal variables related to breast-feeding are associated with the onset of maternal depression. For example, Alder and Bancroft reported a higher incidence of depressive symptoms in fully breast-feeding women at 3 months postpartum as compared with women who did not breast-feed (15). In a study conducted by Susman and Katz, a small sample of women showed that cessation of nursing triggered the onset of depression, thereby suggesting a possible hormonal cause (16).

Recent work by Cooper, Murray, and Stein, however, reports alternative findings that question the role of hormonal factors associated with breast-feeding cessation in the development of depression (17). Their examination of 2 large postpartum community samples revealed that, in the majority of cases, the onset of depression preceded the cessation of breast-feeding.

In postpartum depression, it is not yet clear if the onset of depression precedes or follows cessation of breast-feeding or if there is any association at all. To date, research in this area has been conducted exclusively with community samples. It is possible that an outpatient sample of women who have experienced postpartum depression may provide an opportunity to describe more fully the relationship between breast-feeding cessation and the onset of depression.

This study examines the relationship between breast-feeding cessation and the onset of postpartum depression in an outpatient population referred to a specialty clinic. Breast-feeding persistence patterns and maternal attitudes toward breast-feeding among this high-risk sample were also examined.

Method

Sample

An outpatient sample of women ($N = 51$) meeting DSM-IV criteria for major depression with postpartum onset from 1995 to 1996 was recruited from the Reproductive Psychiatry Programs at St Paul's and BC Women's Hospitals. These women were referred to the clinic by family doctors across the province. Only women who had stopped breast-feeding were approached to take part in the study. Seventy-six women were identified and were mailed a questionnaire that asked them to report their feelings of depression in the context of breast-feeding. A return rate of 69% was obtained. All of these patients were moderately to severely depressed and met the criteria for major depression. The severity of the illness was measured by the psychiatrist (senior author) at initial assessment and 3 months later with the Clinical Global Impressions scale.

At the time of data collection, the patient's mean age was 31.7 years (range 22 to 43 years; $SD = 5.3$). Subjects had no confounding illness and were no longer breast-feeding. All subjects but one (98.0%) were married or cohabiting, and all had uneventful pregnancies that resulted in healthy infants with no gross congenital abnormalities and a birth weight of at least 2.5 kg. None of the infants required admission to the special care nursery.

Measures

Infant Feeding Questionnaire (IFQ)

The IFQ is a self-report instrument consisting of 55 items designed to obtain information about the infant feeding patterns of postpartum women. The IFQ was developed for this project and was based on Badenock's infant feeding survey (18). The IFQ, sent to the subjects by mail, took approximately 15 minutes to complete. No control group, such as women who were nursing but not depressed, was assigned because the focus of the study was to ascertain the role of nursing in the onset of postpartum depression.

Clinical Global Impressions Scale (CGI)

The CGI is a clinician-rated, 7-point scale used to rate the severity of a disease; 1 = not at all ill, 7 = the most severely ill (19). CGI scores were used as an indicator of the subject's overall clinical status. Ratings were assigned at the time of clinic assessment and at a 3-month follow-up appointment.

Results

Sample Characteristics

Subjects breast-fed for a mean of 16.7 weeks ($SD = 17$) and exclusively breast-fed for a mean of 10.8 weeks ($SD = 8.9$). Sample parity was similar because 55.1% of the subjects were first-time mothers. The majority of women (67.4%) had no psychiatric history, although 17% had previously suffered from major depressive disorder, and 8.7% had experienced a previous episode of postpartum depression. The majority of

Table 1. Relationship between selected maternal variables and onset of depression

Variable	Onset of depression before breast-feeding cessation (%)	Onset of depression after breast-feeding cessation (%)
Duration of breast-feeding		
Exclusive breast-feeder	84.2 (16) ^a	15.8 (3)
Supplemental breast-feeder	80.8 (21)	19.2 (5)
Parity		
Primiparous	76.0 (19)	24.0 (6)
Multiparous	95.0 (19)	4.5 (1)
Severity of illness		
Mild illness	81.3 (13)	18.8 (3)
Marked illness	83.9 (26)	16.1 (5)
Education		
University/postsecondary	81.1 (30)	18.9 (7)
High school/some high school	90.0 (9)	10.0 (1)
Age		
< 25 years	83.3 (5)	16.7 (1)
> 25 years	84.6 (33)	15.4 (6)

Table 2. Relationship between breast-feeding persistence and selected social variables

Variable	Exclusive breast-feeders (n = 21) (%)	Supplemental breast-feeders (n = 27) (%)
Partner present at delivery	100.0 (20) ^a	100.0 (27)
Partner was helpful with baby	95.0 (19)	96.3 (26)
Mother at home with baby	—	—
Manageable baby	80.0 (16)	60.0 (15)
Baby cried often	60.0 (12)	65.4 (17)
Maternal sleep disturbance	80.0 (16)	88.9 (24)
Complications during labour	65.0 (13)	44.4 (12)
Obstetric interventions during labour and delivery	57.1 (12)	57.7 (15)
Vaginal delivery	61.9 (13)	92.3 (24)

^aNumber of cases in parentheses.

subjects had postsecondary training or had attended university.

The mean interval between delivery and patient assessment at either of the 2 clinics was 7.6 months ($SD = 6.13$), however the majority of the sample (80.4%) was assessed within the first year of postpartum. At the baseline assessment, 39 women (76.5%) received pharmacotherapeutic intervention.

Onset of Depression

The overwhelming majority of women (83%) reported that their depression began before the cessation of breast-feeding (95% confidence interval). That is, 39 patients indicated that the onset of depressive symptoms preceded the termination of breast-feeding, while only 8 (17%) patients stated that their

depression developed subsequent to breast-feeding cessation. The relationship between selected maternal factors and the onset of depression can be seen in Table 1. A minority of 3 women (7.3%) indicated that their depression emerged early in pregnancy, while 30 women (73.1%) reported depressive symptomatology within the first 2 months of postpartum.

Attitudes toward Breast-Feeding

During pregnancy, all subjects expressed a clear intention to breast-feed, and a majority (78.4%) were definitely looking forward to breast-feeding. After breast-feeding cessation, half the sample ($n = 25$) reported very pleasurable feelings regarding breast-feeding, while one-fourth ($n = 13$) felt neutral about breast-feeding, and one-fourth ($n = 12$) clearly did not enjoy the process.

Breast-Feeding Persistence

Twenty-one women (43.8%) breast-fed exclusively for at least 8 weeks and were categorized as exclusive breast-feeders, whereas 27 women (56.3%) introduced other feeding methods before 8 weeks and were categorized as supplemental breast-feeders. That is, those women who breast-fed exclusively before 8 weeks were compared with those who continued to breast-feed and supplement beyond this 2-month cut-off point. This 8-week cut-off point was based on the distribution of the data, as well as on data which indicate that of those mothers who initiate breast-feeding, half will have ceased breast-feeding after approximately 2 months (20). The exclusive breast-feeders ($n = 21$) were compared with supplemental breast-feeders in terms of select social variables listed in Table 2.

Severity of Illness

Severity of illness scores were assigned to both supplemental and exclusive breast-feeders at the time of clinical assessment. The 27 supplemental breast-feeders had a mean score of 4.9 out of 7 ($SD = 1.3$), while the 21 exclusive breast-feeders also had a mean score of 4.9 ($SD = 1.5$). That is, both groups of women were rated by the clinician as markedly ill versus mildly ill.

Maternal Distress

A composite score was computed to reflect the degree of distress surrounding breast-feeding. This distress variable consisted of the following 4 questionnaire items: enjoyment of breast-feeding, the stress felt in relation to breast-feeding, the perception of how good a job one was doing, and the ability to cope with breast-feeding. Findings revealed that those women who breast-fed fully for at least 8 weeks (exclusive breast-feeders) felt significantly less distress surrounding the breast-feeding process than women who breast-fed for less than 8 weeks ($t = 2.35$, $df = 42.8$, $P = 0.02$).

Early problems with breast-feeding were reported by supplemental and exclusive breast-feeders. Of the 27 supplemental breast-feeders, 19 (70.4%) reported few, if any, problems in the first few days postpartum, and 8 (29.6%) noted major or severe problems over this period. The exclusive breast-

feeders presented similar information in that 12 (57.1%) women experienced few difficulties immediately postpartum, and 9 (42.9%) recalled substantial problems. Of the 17 women who experienced major or severe problems, 13 elaborated further and cited specific physical problems, such as sore breasts, poor latch, and insufficient milk.

Demographic Factors

The demographic factors of age, parity, and education were found to have no statistically significant association with the persistence of breast-feeding. Further examination of the education variables, however, indicated that contrasting educational backgrounds influenced the duration of breast-feeding. For example, women who had attended university breast-fed exclusively for a median of 12 weeks, women with post-secondary training for 8 weeks, and high school graduates for 5 weeks.

Discussion

Previous reports in the literature that have investigated the association between depression and breast-feeding have been conducted only with community samples and have revealed equivocal results. Our finding that depression occurred before breast-feeding cessation for the majority of treated outpatient subjects supports the work of Cooper and others and provides additional data that challenge the role of hormonal fluctuations associated with breast-feeding in the onset of depression (17). The retrospective nature of this study, however, has limited our ability to determine the exact nature of the relationship between the onset of depression and the cessation of breast-feeding. Clearly, prospective examination of this association is needed as women move through the postpartum period.

Exclusive and supplemental breast-feeders were rated similarly by the clinician regarding the severity of their depressive symptoms, as both groups of women were regarded as markedly ill. The lack of impact of the severity of illness on the duration of breast-feeding suggests that even in the context of significant psychiatric illness, the attempt to establish breast-feeding is an important issue to mothers.

Further results revealed that women who did not persist with breast-feeding perceived themselves as coping poorly with the nursing process. As these women encountered similar rates of problems with breast-feeding as compared to those women who persisted, it is possible that a mother's perception of her coping ability, as opposed to actual physical difficulties, may influence her commitment to breast-feeding.

The perception of coping ability is an important clinical issue in the context of maternal depression, and it is clear that postpartum depression adversely affects infant and child development (21).

Studies show that infants of chronically depressed mothers suffer from impaired cognitive development and may exhibit behavioural problems during preschool years. (22,23). As mothers feel that their ability to breast-feed is synonymous

with their ability to bond with their child or to be adequate mothers, assisting women in the continuation of breast-feeding may enhance their perceptions of well-being and satisfaction, which may in turn influence interaction with their infants (24).

Clinical Implications of the Findings

Our finding that depression precedes breast-feeding cessation in postpartum women opens up a whole different issue of pharmacological intervention in depressed nursing mothers (unpublished observations). The majority of the women in our sample reported onset of depression in the first 2 months of postpartum and insisted on continuing nursing in spite of the severity of their illness. In other words, very few mothers were willing to give up nursing regardless of their mood. This poses a dilemma for the treating psychiatrist because pharmacotherapy is inevitably warranted in these depressed patients. All antidepressants are secreted in maternal milk, and, presently, the long-term neurobehavioural consequences of drug exposure to infants is unknown. Yet, conversely, the effect of untreated depressed mothers on babies cannot be understated (25). Hence careful evaluation is prospectively needed of mothers on antidepressant medication who wish to continue nursing their infants.

The role of breast-feeding is one of the many factors that contribute to the onset of postpartum depression. Obviously, other biological and environmental factors need further research. The senior author recently completed a study at the British Columbia's Women's Hospital to understand the role of partner support in recovery from postpartum depression.

In conclusion, postpartum depression seems to have recently attracted the attention of sophisticated researchers around the world. The etiology, pathophysiology, and course of the complex phenomenon of postpartum depression, with its biochemical and psychosocial variables, still remains an enigma to the reproductive psychiatrist.

Clinical Implications

- No association was found between onset of postpartum depression and cessation of breast-feeding.
- A significant proportion of women nurse their babies in spite of experiencing postpartum depression.
- If breast-feeding women with postpartum depression decide to nurse their infants, because antidepressants are excreted in the milk, it has major clinical implications.

Limitations

- It is a retrospective study. More prospective studies are needed.
- The numbers of the samples were small.
- The study did not look at the issue of infant-mother bonding.

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Résumé

Objectif : Étudier la relation entre l'arrêt de l'allaitement et le début de la dépression du post-partum.

Méthode : On a réalisé un examen rétrospectif du lien entre l'allaitement et la dépression dans un échantillon de 51 patientes recevant des soins obstétricaux ambulatoires pendant le post-partum, atteintes de dépression majeure et ayant cessé d'allaiter. Les données étaient extraites de questionnaires remplis par les sujets, et on a évalué la gravité de la maladie et l'évolution clinique de chaque sujet.

Résultats : La majorité des femmes (39 sur 51; 83 %) des femmes a déclaré que la dépression avait débuté avant de cesser d'allaiter, alors que seulement 8 patientes (17 %) ont mentionné que leur dépression avait suivi l'arrêt de l'allaitement.

Conclusions : Dans un échantillon de femmes recevant des soins ambulatoires et atteintes de dépression du post-partum, la dépression avait commencé avant qu'elles aient cessé d'allaiter. La gravité de la maladie ne semblait pas influencer de façon significative sur la persistance de l'allaitement.