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Changes in Maternal Depressive Symptoms Across the Postpartum Year at Well Childcare Visits

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Abstract

Background: Postpartum depression, which affects 10-15% of childbearing women, can have detrimental effects on child development. Despite clinicians' need to understand the course of postpartum depressive symptoms to incorporate optimal screening protocols, little is known about changes in symptoms across the postpartum year, particularly among low-income, minority women.

Objective: To describe the incidence, continuation, and resolution of symptoms during the postpartum year in urban women experiencing high depressive symptom levels at one or more well childcare visits.

Design: As part of a prior study of postpartum depressive symptoms, demographic data and the Edinburgh Postnatal Depression Scale (EPDS) were systematically collected from pediatric records of a clinic that routinely screens mothers with the EPDS at each first year well childcare visit. To explore the course of depressive symptoms throughout the postpartum year in this pilot study, we included only data from the records that had at least one EPDS ≥ 10 (N=100), a score indicating a high likelihood for clinically significant depressive symptoms.

Results: Among 49 women who completed the EPDS at least once before 3 months and between 3 and 11 months postpartum, 33% had high symptom levels throughout the year, 41% improved after the first three months, and 26% developed high symptom levels after the first three months.

Conclusions: Postpartum depressive symptoms persist in many women throughout the postpartum year. Routine screening throughout the year might better identify both a subgroup of women who develop new symptoms during the year, as well as the women whose symptoms persist.

Keywords

postpartum depression; maternal depression; screening

Introduction

Postpartum depression is a common problem that affects approximately 10% of new mothers.¹⁻⁴ Among women in under-represented minority and socioeconomic groups, the prevalence is even greater with 25% experiencing significant depressive symptoms during the year

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following childbirth.⁵⁻⁸ The potential effects of postpartum depression for infant development are widely known including difficulties with attachment and bonding⁹, behavioral disturbance¹⁰⁻¹² and changes in the pituitary-adrenal responses to stress.¹³ Maternal depression also can affect pediatric healthcare utilization including decreased attendance at well childcare (WCC) visits¹⁴ and increased use of pediatric emergency department services.¹⁵ While the prevalence and effects of postpartum depression are well established, little is known about its natural course including symptom onset, fluctuations, and remission. Furthermore, almost no research has addressed the natural course of postpartum depression among low income, minority women. Understanding the course is critical for pediatric providers who see mothers throughout the postpartum year and who may initiate screening, referrals and even interventions.

While many believe that postpartum depression is most prevalent in the first three months following childbirth,^{16;17} studies have noted that some women can experience clinically significant depressive symptoms for months to years following a postpartum episode.¹⁸ Few studies have differentiated continuous from new depressive symptoms throughout the postpartum year.^{19;20} It is important to understand the natural course of symptoms in order to establish guidelines for frequency and timing of screening for this condition.

To begin to explore the natural course of symptoms, we conducted a retrospective review of pediatric medical records from an urban pediatric practice that serves primarily low income and minority families and routinely screens all mothers for postpartum depression at each WCC visit in the first year following birth. For this pilot study we used these prospectively collected longitudinal data to examine the incidence, continuation and resolution of depressive symptoms among a subset of women who reached a level of clinical concern on the screening tool at some point during the postpartum year.

Methods:

Study Design:

Data were initially collected for a prior study of depressive symptoms in the postpartum year among mothers who 1) accompanied their child to WCC visits in the year following birth, and 2) completed the Edinburgh Postnatal Depression Scale (EPDS) during at least one of these visits. Research personnel systematically collected non-identifiable demographic and depression symptom data, including the Edinburgh Postnatal Depression Scale (EPDS), from medical records of pediatric patients born between November 1, 2000 and April 30, 2002 who received their first year of care through the pediatric practice at the University of Rochester Medical Center in Rochester, NY. This practice serves primarily low-income, minority patients and routinely screens mothers with the EPDS at each WCC visit during the child's first year and includes the EPDS in the pediatric medical record. Data were collected from January through May 2003. The University of Rochester Research Subjects Review Board approved the study.

Sample:

For the purposes of this study, only data from the medical records (N=100) that included an EPDS ≥ 10 , a score indicating a high likelihood of clinically significant symptoms, were included. Of the 100 records with an EPDS ≥ 10 , 33 had only one completed EPDS form during the postpartum year. Therefore, the final sample for this study included only subjects (N=67) whose pediatric record included two or more completed EPDS forms.

Measurements:

Postpartum depression assessment:

The Edinburgh Postnatal Depression Scale (EPDS), a 10-item, self-administered questionnaire, was developed as a screening tool (not a diagnostic measure) to assess depressive symptoms in women who have recently given birth.²¹ It has been validated in many settings and large community samples.²² Its use in pediatric settings has been previously described.⁶ At 6-8 weeks postpartum, it has a sensitivity of 93% and a specificity of 83% for a score ≥ 10 for major depression when compared to the Standardised Psychiatric Interview.²³ A cut-off score of 10 or above is used to indicate clinically significant symptoms in this study.

Depression Treatment:

Maternal treatment for depression was defined as any notation in any first year WCC visit note that the mother was under care for depression, in mental health treatment (i.e. counseling), or was taking a psychotropic medication.

Data analysis

Proportions were calculated for incidence of high levels of depressive symptoms at each WCC visit. Changes in EPDS scores were analyzed only for subjects (N=49) whose pediatric records included at least one completed EPDS at the 0-4 week or 1-3 month WCC visit (hereafter Early Postpartum) and at least one completed EPDS at the 3-5 month, 5-7 month or 7-11 month WCC visit (hereafter Late Postpartum). The highest score in Early and Late Postpartum was used to describe changes in symptoms. Proportions were calculated for changes in depressive symptom categories from Early to Late Postpartum.

Results

Sample description:

The mean maternal age was 23.6 years (SD 5.3). Maternal race and ethnicity were not available because all data were gathered retrospectively from the pediatric medical records. Therefore, infant race and ethnicity were used as a proxy for maternal race. The child's health insurance (Medicaid or other) was used as a proxy for socioeconomic status. Sixty percent of infants were black, 21% were white, and 16 % were Hispanic. Eighty-three percent of infants were covered by Medicaid.

Course of Symptoms

Distribution of High EPDS scores at Each WCC Visit: 67 medical records included two or more completed EPDS forms for a total of 174 completed EPDS forms. Approximately equal numbers were completed at each WCC visit with the greatest proportions of high scores occurring during the first two WCC visits (Table 1).

Incidence: To determine the occurrence of new cases, we identified women who had an initial EPDS < 10 and a subsequent EPDS ≥ 10 . The WCC visit at which the EPDS score was ≥ 10 was considered a new case. EPDS scores were not available prior to the 0-4 week visit. Therefore, all high EPDS scores at the 0-4 week visit would be new cases to pediatricians, even though some cases may represent a continuation of high symptom levels from pregnancy while others may, indeed, be new cases of depression. New cases occurred at each well childcare visit, with four new cases being identified at the 1-3, 3-5, and 5-7 month visits. These cases represented 18%, 22% and 29% of the high EPDS scores, respectively. At the 7-11 month visit, only 1 new case (7%) was identified.

The course of postpartum depressive symptoms from Early to Late

Postpartum: Among the 49 women who completed at least one EPDS in Early and Late Postpartum, 16 (33%) had high symptom levels (EPDS ≥ 10) in Early and Late Postpartum, 20 (41%) improved to a score below 10 after 3 months, and 13 (26%), who prior to 3 months postpartum had an EPDS score less than 10, developed high depressive symptom levels (EPDS ≥ 10) between >3-11 months postpartum.

Nine (18%) of the 49 pediatric records included documentation of maternal depression treatment. Among the 16 women with high depressive symptoms both early and late postpartum, 4 (25%) had documentation of treatment. Among those whose scores decreased to <10 Late Postpartum (N=20), 3 (15%) had notations of receiving treatment for depression or other psychiatric illnesses. Among those whose scores increased to ≥ 10 Late Postpartum (N=13), 2 (15%) had documentation of treatment.

Discussion

Changes in Depressive Symptoms

New Onset: Among women who experienced high depressive symptoms (EPDS ≥ 10) at some point in the postpartum year, one quarter developed the high levels after the first three months postpartum. Furthermore, incident cases occurred at every WCC visit. Our findings suggest that if pediatricians only screened at the 2-week or 2 month WCC visit they would miss more than one out of four women who may meet criteria for clinically significant depression in the postpartum year. The low number of new cases at the 7-11 month WCC visit requires further study as it may be a spurious finding due to the small sample size or it may truly reflect a lower risk during this somewhat “easier” developmental period of an infant’s life. If these preliminary findings are confirmed, recommendations for screening may include, at a minimum, screening during either the 2-week or 2-month visit and again after 3 months postpartum. Larger studies with more cases are needed to focus screening to specific WCC visits. Since new cases appear throughout the postpartum year, it may be most straightforward, and certainly most complete, to screen at all WCC visits during the postpartum year.

Persistence of postpartum depressive symptoms: If pediatricians only screened early, they would miss the fact that 33% of those with high levels of symptoms in early postpartum continue to experience high levels later in the year. Since both the timing and the chronicity of maternal depression can effect child development,^{10;11;24} it is critical to recognize women with persistent symptoms as they may need additional referrals, encouragement or other interventions. While treatment is effective^{25;26}, the amount of time and change in symptoms varies considerably. Women who are in treatment may continue to experience significant symptoms, as evidenced by this pilot study in which 25% of women experiencing high depressive symptom levels throughout the year were documented as being in treatment. Thus, repeated screening of mothers who previously screened positive may be warranted, even if the mother reports that she is receiving treatment.

Decrease in Symptoms: Approximately 41% of those experiencing high depressive symptom levels in the first three months postpartum improved to a level below the cut-off score of 10 later in the year. The decrease in symptoms may have been due to treatment but we did not have access to maternal records to assess the receipt or effectiveness of treatment. From the information available in the infant records, three mothers did appear to improve with treatment. Whether the remaining 17 women improved with or without treatment is unknown. Further study is warranted to help pediatricians better identify who requires “watchful waiting” versus intervention.

Limitations: The study's findings are limited due to the small sample size, the observational nature of the study, the retrospective medical record review method, and the reliance on pediatric records as the source of maternal information. The findings may not be generalizable as it was conducted in only one urban academic medical center practice that serves a primarily underserved minority population and only includes women who completed two or more EPDS during the postpartum year. Women who completed one or no EPDS may have a different course or severity of symptoms as severely depressed women may be unable or unwilling to complete repeated screening measures.

Summary

To our knowledge, this pilot study is the first to describe the natural course of depressive symptoms among urban, low-income, women throughout the postpartum year as observed in a real world pediatric setting using standard clinical measures. While three-quarters of women who had depressive symptoms at some time during the postpartum year manifested these symptoms during the first 3 months postpartum, one-quarter did not manifest symptoms until after 3 months following delivery. Three distinct patterns occurred: persistence of depressive symptoms (in one-third), improvements (in more than 40%), and new onset of symptoms (in one-quarter). Future exploration of the natural course of postpartum depression is needed to develop optimal clinical approaches to knowing who to watch and who to refer for treatment.

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Table 1

Number and Scores of Completed EPDS at Each WCC Visit Among Women With High Depressive Symptoms Who Had At Least 2 EPDS Scores (N=67 Women)

WCC Visit	Total # completed EPDS (N)	EPDS $\geq$ 10 N (%)	EPDS < 10 N (%)
0-4 weeks	39	26 (67%)	13 (33%)
1-3 months	36	22 (61%)	14 (39%)
3-5 months	37	18 (49%)	19 (51%)
5-7 months	32	14 (44%)	18 (56%)
7-11 months	30	15 (50%)	15 (50%)
Total	174	95 (%)	79 (%)