Research paper

Breastfeeding and postpartum depression: Assessing the influence of breastfeeding intention and other risk factors

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ABSTRACT

Background: Risk and protective factors for postpartum depression have been extensively studied, and in recent studies an association between breastfeeding and maternal mood has been reported. The present retrospective, cross-sectional study was conducted to evaluate the association between breastfeeding-related variables and postpartum depression (based on Edinburgh Postnatal Depression Scale threshold criteria) within the context of other known risk factors.
Method: Breastfeeding information, demographic information, and scores on the Edinburgh Postnatal Depression Scale were examined from the Canadian Maternity Experience Survey. This survey contains data collected from 6421 Canadian mothers between October 2006 and January 2007, and 2848 women between five and seven months postpartum were included in the current analyses.
Results: In contrast to previous research, logistic regression analyses revealed that when considered within the context of other risk factors, breastfeeding attempt and duration were not associated with postpartum depression at five to seven months postpartum. Although a relationship between the prenatal intention to combination feed and postpartum depression was observed, these variables were no longer related once other potential risk factors were controlled for. Factors that were associated with postpartum depression included lower income, higher perceived stress, lower perceived social support, no history of depression, or no recent history of abuse.
Limitations: A clinical diagnostic instrument was not used and variable selection was restricted to data collected as part of this survey.
Conclusion: These findings suggest that the association between breastfeeding and postpartum depression reported by previous researchers may in fact be due to alternative risk factors.

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1. Introduction

Postpartum depression is a serious mental health condition that affects an estimated 13–19% of women who have recently given birth (O'Hara and McCabe, 2013). Postpartum depression is characterized as a persistent low mood in new mothers, which is often accompanied by feelings of sadness, worthlessness, and/or hopelessness. While the clinical profile of postpartum depression is similar to depression occurring at other times in a woman's life, it may differ in some respects due to the profound physiological changes occurring during pregnancy and the postpartum period (Bloch et al., 2000; O'Hara and McCabe, 2013).

Due to the severe consequences and functional impairment associated with the disorder, potential risk and protective factors for postpartum depression have been extensively studied. Risk factors that have been identified in the literature include younger age, lower level education, being single/divorced/separated, not wanting the pregnancy, lower socioeconomic status/income, primiparity, smoking, history of alcohol use, history of physical or sexual abuse, the experience of birth and postpartum stressors, history of depression and antidepressant use, residing in large urban areas, plan to return to work in the early postpartum, and poor social support (Dagher and Shenassa, 2012; O'Hara and McCabe, 2013). As well, an association between breastfeeding and maternal mood has been reported (Dias and Figueiredo, 2015; Figueiredo et al., 2013).

Initially the relationship was conceptualized as postpartum depression resulting in lower rates of breastfeeding initiation and early cessation (Seimyr et al., 2004). More recently however,

reports indicated that while postpartum depression may reduce rates of breastfeeding, not engaging in breastfeeding may increase the risk of postpartum depression. Additionally, there is some evidence that longer duration of breastfeeding may protect against postpartum depression (Figueiredo et al., 2013). Some researchers, however, have not found an association between breastfeeding and postpartum depression (Davey et al., 2011; McKee et al., 2004).

While numerous studies have evaluated the association between postpartum depression and breastfeeding (Dias and Figueiredo, 2015), few studies (Davey et al., 2011; Nielsen Forman et al., 2000; Borra et al., 2015) have looked at the rate of postpartum depression in women who never initiated (or failed to initiate) breastfeeding or in women who made the decision prenatally not to breastfeed and did not attempt to breastfeed. In response, the current study aimed to add to this available research by assessing if: 1) women who did not attempt breastfeeding were at greater risk of postpartum depression compared to women who attempted breastfeeding, and if intent to breastfeed influenced this association; and 2) if breastfeeding duration was related to the experience of postpartum depressive symptoms.

2. Method

2.1. Procedure

This study was a retrospective, cross-sectional design utilizing survey data derived as part of the Canadian Maternity Experiences Survey (CMES; Public Health Agency of Canada, 2009). Permission to access the CMES raw data-set was obtained from the Social Sciences and Humanities Research Council, a division of the Government of Canada. The data was accessed through a Research Data Centre and the research protocol was approved by a University Research Ethics Board.

2.2. Participants

A sample of 8542 postpartum women, stratified by province and territory, were identified based on their 2006 Canadian Census survey responses, of which 6421 (78%) consented to complete the survey. Eligible participants were birth mothers who were 15 years of age and older, who had a singleton live birth in Canada, and who lived with their infant at the time of the interview. Birth mothers were not eligible to participate in the survey if they were under 15 years of age at the time of giving birth, or lived on a First Nations reserve or in an institution at the time of data collection. As well, mothers who had a multiple birth, a stillbirth, or had experienced an infant death, were not eligible as the survey did not focus on birth mothers who experienced those specific circumstances.

For sample continuity, only women who were five to seven months postpartum were considered in this analysis (N=2848). The mean age of women included in this analysis was 30.39 (SD=5.11). Tables 1 and 2 present descriptive statistics for the women included in the analyses in this study.

2.3. Materials

Canadian Maternity Experiences Survey (CMES; Public Health Agency of Canada, 2009). The CMES was developed and implemented by the Public Health Agency of Canada in collaboration with Statistics Canada and data was collected between October 23, 2006 and January 31, 2007. The survey was an initiative to acquire representative pan-Canadian data on women's experiences during pregnancy and the postpartum period. Demographics and

Table 1
Descriptive statistics of female participants and variables in the analysis.

Variable	Mean (SD)	Relative frequency
Mother's age (N=2848)	30.39 (5.11)	
Education (N=2831)		
Did not graduate high school		182 (6.4%)
Graduated high school		382 (13.4%)
Some postsecondary		179 (6.3%)
Completed postsecondary education		2088 (73.3%)
Marital Status (N=2847)		
Married		2632 (92.4%)
Widowed, separated, or divorced		57 (2.0%)
Single		158 (5.6%)
Wanted pregnancy (N=2831)		
Yes		2649 (93.0%)
No		182 (6.4%)
Household income (N=2703)		
> $10000–$50000		944 (34.8%)
$50000–$100000		1194 (44.1%)
$100000–$150000		425 (15.7%)
$150000–$200000		85 (3.1%)
> $200000		56 (2.1%)
Number of live births (N=2845)	1.80 (0.96)	
Currently smoke (N=2849)		
Yes		424 (14.9%)
No		2424 (85.1%)
Drank during pregnancy (N=2840)		
Yes		283 (9.9%)
No		2557 (89.8%)
History of abuse (past two years) (N=2846)		
Yes		304 (10.7%)
No		2542 (89.3%)
Stress in the past year prior to delivery (N=2840)		
Not stressful		1213 (42.7%)
Somewhat stressful		1267 (44.6%)
Very stressful		360 (12.7%)
History of depression or antidepressant use[*] (N=2844)		
Yes		432 (15.2%)
No		2412 (84.8%)
Lived rurally (N=2748)		
Yes		462 (16.2%)
No		2286 (80.3%)
Social support availability (N=2839)		
None of the time		40 (1.4%)
A little of the time		125 (4.4%)
Some of the time		283 (10.0%)
Most of the time		912 (32.1%)
All of the time		1479 (52.1)
Had returned to work postpartum (N=2845)		314 (11.0%)

[*] Prior to pregnancy.

sociocultural characteristics and depression scores, as well as intention, initiation, and duration of breastfeeding were obtained from the raw survey data. Questions regarding feeding status were similar to the definitions provided by the World Health Organization (2008).

2.4. Measures

Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987). Postpartum depressive symptoms were measured based on the women's scores on the EPDS, a scale widely-used to assess postpartum depression and postpartum depression risk (Beck, 2001). The EPDS is a 10 item self-report scale that asks women to report the extent to which they have experienced specific depressive symptoms within the past seven days on a four point Likert-type scale. The cut-off classifications are based on literature which suggests that total scores of 0–9 indicate not depressed, 10–12 indicate some depressive symptoms present, and 13–30 are