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Betty-Shannon Prevatt, MA, LPA: bprevat@ncsu.edu, 919-612-3348, ORCID: 0000-0002-5054-5880

Lifetime Substance Use and Postpartum Mental Health

Betty-Shannon Prevatt, MA[1], Sarah L. Desmarais, PhD[1], & Patti Janssen, PhD[2]

[1]*North Carolina State University,* [2]*University of British Columbia*

Introduction

Postpartum mood disorders (PPMD) affect approximately 10-20% of women (CDC, 2008). Unfortunately, only about 25% of women will receive treatment, in part due to underdetection (Goodman and Tyer-Viola, 2010). The impact of PPMD extends beyond the new mom to her children. Indeed, children of mothers with PPMD experience disrupted mother-infant bonding, delays in infant cognitive development, and poor social development, as well as academic delays and psychopathology when they are school-age (Field, 2010; Goodman & Gotlib, 1999; Murrey & Cooper, 1997). As a result, there have been considerable efforts focused on identifying predictors, including sociodemographic characteristics and history of mental health problems, which could guide proactive, targeted interventions.

One potential predictor that has received less attention in postpartum women is lifetime substance use, though it is known to be a robust predictor of mood disorders in other populations (Regier et al.,1990). Moreover, research has typically focused on identifying predictors of postpartum depression specifically, though postpartum women also are at elevated risk for other mood disorders, including anxiety, obsessive compulsive disorder (OCD) and post-traumatic stress disorder (PTSD) (Stone & Menken, 2008).

The Present Study

The present study examined the contributions of lifetime substance use to the prediction of postpartum mood disorders, above and beyond sociodemographic characteristics and history of mental health problems, in a non-clinical, community sample of new mothers.

Methods

One hundred women participated in semi-structured interviews within approximately 3 months postpartum (M = 2.01, SD = 1.32, range = 0-5). Depression, anxiety, stress, and overall postpartum mood were measured using the Depression Anxiety Stress Scales-21 (DASS-21) (Lovibond & Lovibond, 1995). Possible range for each of the subscales is 0-42 with a possible total score range of 0-126. The clinical thresholds for depression, anxiety, and stress symptoms were ≥14, ≥10, and ≥10 respectively. Symptoms of OCD were measured using the Yale-Brown Obsessive-Compulsive Scale (YBOCS) (Goodman et al., 1989). Possible range of scores is 0-40 with scores ≥16 meeting the clinical threshold for OCD. Symptoms of PTSD were measured using the PTSD Symptom Scale-Self Report (PSS-SR) (Foa, Riggs, Dancu, & Rothbaum, 1993). Symptoms consistent with PTSD are indicated by scores ≥ 14, with a possible range of 0-51. Lifetime substance use was measured using the Substance Abuse Subtle Screening Inventory-3 (SASSI) (Miller & Lazowski, 1999).

Measurement of sociodemographic characteristics included self-report of number of biological children, employment status, ethnicity, age, highest education, and relationship status. Participants were also asked to indicate if they had any history of mental health problems.

Results

Participant Characteristics

The participants ranged in age from 20-49 years old (M = 32.47, SD = 4.97). The sample was fairly diverse with regard to ethnicity as 71% were Caucasian, 13% were Asian, 3% were Black/African Canadian, 2% were South Asian, 1% were First Nations, and 10% were "other" ethnicity. The majority of the participants had no other biological children (64%) while 27% had one child, 7% had two children and 2% had three children in addition to the current pregnancy. Most of the participants were in a partnered relationship with 84% married and 10% living with their partner. Of the remaining, five were single and one indicated that she was dating but not living with her partner. The sample appeared to be well-educated with only 8% having a high school diploma or less and 63% having earned a university degree. Finally, most participants were employed, with 65% reporting full-time employment and 17% reporting part-time employment.

Postpartum Functioning

Table 1 presents the mean scores and standard deviations on the study measures. The majority of the participants in the sample did not reach the clinical threshold for postpartum mental health and substance use problems. However, when the scores from all the measures were examined together, 47% of the participants reached a moderate to severe level of postpartum distress on at least one measure of mental health. Additionally, 25% met substance dependence criteria at some point in their history and 43% met the criteria for substance abuse at some point in their history.

Table 1. Psychometric Properties of Measures of Postpartum Mood and Historical Substance Dependence

	n	*M*	*SD*	Range	% Meeting Clinical Threshold
DASS Total Score	100	25.12	17.44	0-80	--
DASS Depression	100	5.74	5.70	0-24	14%
DASS Anxiety	100	5.02	5.43	0-24	20%
DASS Stress	100	14.36	9.21	0-38	30%
YBOCS Total Score	100	5.58	6.88	0-23	13%
PSS-SR Total Score	100	7.37	7.82	0-34	22%
SASSI Alcohol Scale*	98	6.47	5.35	0-28	--
SASSI Other Drug Scale*	98	3.22	6.23	0-41	--

Note. -- Clinical threshold not applicable for these scales. *Multiple clinical thresholds.

Prediction Models

Table 2 presents the significance for each step in predicting specific postpartum mood symptoms. Hierarchical multiple regression was used with the first step comprised of sociodemographic characteristics, the second step added history of mental health issues, and the third step added lifetime alcohol and drug use. Results showed that consideration of lifetime substance use improved the prediction of postpartum mood overall (R^2 = .53, R^2_{change} = .04, p = .036), PTSD (R^2 = .47, R^2_{change} = .06, p = .008), stress (R^2 = .48, R^2_{change} = .04, p = .054), and anxiety (R^2 = .43, R^2_{change} = .04, p = .074) but not depression (R^2 = .36,

Results

Table 2. Significance of Models Predicting Postpartum Mental Health Symptoms

	Step 1	Step 2		Step 3	
Disorder	*F (p)*	*F (p)*	F_{change} *p*	*F (p)*	F_{change} *p*
PTSD	5.21 (<.001)	8.97 (<.001)	<.001	8.75 (<.001)	.008
Postpartum Mood Overall	2.29 (.042)	12.52 (<.001)	<.001	11.04 (<.001)	.036
DASS Stress	.96 (.458)	10.39 (<.001)	<.001	9.12 (<.001)	.054
DASS Anxiety	4.66 (<.001)	8.22 (<.001)	<.001	7.23 (<.001)	.074
OCD	1.32 (.256)	5.61 (<.001)	<.001	4.73 (<.001)	.242
DASS Depression	2.22 (.048)	6.60 (<.001)	<.001	5.39 (<.001)	.329

R^2_{change} = .02, p = .329) or OCD (R^2 = .33, R^2_{change} = .02, p = .242), above and beyond sociodemographic characteristics and history of mental health problems.

Unique Predictors

Lifetime drug use was a unique predictor of postpartum mood overall (β = .23, p = .022), symptoms of anxiety (β = .22, p = .044), and stress (β = .25, p = .020). Though the model predicting PTSD was significant, lifetime drug use was not a unique predictor (β = .18, p = .093). Lifetime alcohol use did not emerge as a unique predictor of any postpartum mood symptoms (βs ≤ .15, ps ≥.955).

Discussion

The present study revealed considerable rates of moderate to severe postpartum mood distress in a non-clinical, community sample. Lifetime drug use was a significant predictor for poor postpartum mood outcomes. Findings suggest that, in addition to routine screening for prior mental health history, providers of prenatal and antenatal care should also screen for history of substance abuse and dependence as early detection could contribute to improved intervention efforts (Taillac, Goler, Armstrong, Haley, & Osejo, 2007). Thus, routine screening may improve identification of women at risk for postpartum mood disorders who otherwise may have been overlooked.

For reasons beyond the researchers control, a limitation of the study was the lack of information regarding current – as opposed to lifetime - substance use. Analyses nonetheless suggest that even a history of drug use can have a negative impact on postpartum mental health. Additional limitations include overlap in the symptoms measured across the questionnaires and relative homogeneity of the sample. Future studies should seek to build on the current work using a more diverse sample and prospective research design.

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Betty-Shannon Prevatt, MA, LPA: bprevat@ncsu.edu, 919-612-3348, ORCID: 0000-0002-5054-5880