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Suicidal ideation in depressed postpartum women: Associations with childhood trauma, sleep disturbance and anxiety

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ABSTRACT

Background: Suicide is one of the leading causes of death in postpartum women. Identifying modifiable factors related to suicide risk in mothers after delivery is a public health priority. Our study aim was to examine associations between suicidal ideation (SI) and *plausible risk factors* (experience of abuse in childhood or as an adult, sleep disturbance, and anxiety symptoms) in depressed postpartum women.
Methods: This secondary analysis included 628 depressed mothers at 4–6 weeks postpartum. Diagnosis was confirmed with the Structured Clinical Interview for DSM-IV. We examined SI from responses to the Edinburgh Postnatal Depression Scale-EPDS item 10; depression levels on the Structured Interview Guide for the Hamilton Depression Rating Scale, Atypical Depression Symptoms (SIGH-ADS); plus sleep disturbance and anxiety levels with subscales from the EPDS and SIGH-ADS items on sleep and anxiety symptoms.
Results: Of the depressed mothers, 496 (79%) 'never' had thoughts of self-harm; 98 (15.6%) 'hardly ever'; and 34 (5.4%) 'sometimes' or 'quite often'. Logistic regression models indicated that having frequent thoughts of self-harm was related to childhood physical abuse (odds ratio-OR = 1.68, 95% CI = 1.00, 2.81); in mothers without childhood physical abuse, having frequent self-harm thoughts was related to sleep disturbance (OR = 1.15, 95% CI = 1.02, 1.29) and anxiety symptoms (OR = 1.11, 95% CI = 1.01, 1.23).
Discussion: Because women with postpartum depression can present with frequent thoughts of self-harm and a high level of clinical complexity, conducting a detailed safety assessment, that includes evaluation of childhood abuse history and current symptoms of sleep disturbance and anxiety, is a key component in the management of depressed mothers.

1. Introduction

Suicide is one of the leading causes of death in postpartum women (Oates, 2003). Recent findings suggest that suicide is the seventh leading cause of maternal death within 6 months of delivery (1.27 per 100,000 maternal deaths) (Lewis et al., 2011). Major depression, bipolar disorders, alcohol and substance use disorders, schizophrenia, and anxiety disorders contribute to the increased risk for suicide and suicidal behaviors (Hawton and van Heeringen, 2009; Oquendo et al., 1997; Rihmer et al., 1995; Fawcett et al., 1990; Cornelius et al., 1995; Nepon et al., 2010; Busch et al., 2003; Sareen et al., 2005). In the postpartum period, women with a psychiatric disorder, substance use disorder or both disorders were at significantly increased risk for suicide attempts by 27, 6 and 11-fold, respectively (Comtois et al., 2008). Of mothers who died from suicide in the first 6 months after childbirth, the primary diagnoses were severe depression in 21%, substance use disorders in 31% and psychosis in 38% (Lewis et al., 2011).

The inadequate assessment of risk or illness severity (Lewis et al., 2011) plus low rates of seeking mental health treatment (15% of postpartum women with major mood disorders) (Vesga-López et al., 2008) likely compound the risk for suicide in postpartum women (Fawcett et al., 1990; Oquendo et al., 1997). Beyond risk to mothers themselves, maternal suicidality can undermine mother–infant interactions. Mothers with suicidal symptoms display reduced responsiveness and sensitivity to infant cues; their

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infants have less positive affect and reduced engagement with their mothers (Paris et al., 2009).

In addition to psychiatric disorders, other risk factors for suicide or suicidal ideation (SI) in adults include a history of self-harm or suicide attempts (Cavanagh et al., 2003; Hawton and van Heeringen, 2009), suicidal thoughts (Coryell and Young, 2005; Fawcett et al., 1990), a family history of suicide (Brent et al., 1988; Hawton and van Heeringen, 2009; Oquendo et al., 1997; Roy, 1983) and increased levels of hopelessness (Fawcett et al., 1990; Beck et al., 1985). Experiences of childhood physical abuse, sexual abuse and neglect are significantly associated with suicide attempts and thoughts of suicide in the general community (Fuller-Thomson et al., 2012; McCauley et al., 1997; Dube et al., 2001; Joiner et al., 2007; Enns et al., 2006) and in patients with major depressive disorders (Brown et al., 1999; Brodsky et al., 2001; McHolm et al., 2003; Oquendo et al., 2005; Widom et al., 2007). Among severely depressed patients proximal risk factors for suicide and suicidal behaviors include acute intoxication (Oquendo et al., 1997), sleep disturbance (insomnia or nightmares) (Bernert et al., 2005; Fawcett et al., 1990) and heightened symptoms of anxiety or agitation (Busch et al., 2003; Fawcett et al., 1990).

The reduction of suicide risk in mothers with major mood disorders is a public health priority. After delivery, women with postpartum major depression, puerperal psychosis and recurrent episodes of Bipolar Disorder (BD), often had thoughts of self-harm or SI (Wisner et al., 2013; Howard et al., 2011; Sit et al., 2006; Pope et al., 2013). Findings from a postpartum depression screening program of 10,000 women, indicated postpartum women who screened positive for depression had high rates of self-harm ideation (19.3%) and frequent thoughts of self-harm (3.2%) (Wisner et al., 2013). Depression screening of 4000+ postpartum women in the community also suggested 4% had frequent thoughts of self-harm "sometimes" or "quite often" (Howard et al., 2011).

To understand the risk of suicide or thoughts of self-harm in postpartum women, we can begin by exploring the known risk factors for suicide or SI in adults with and without major mood disorders. Given the compelling findings from our group (Wisner et al., 2013) and others (Howard et al., 2011; Paris et al., 2009; Pope et al., 2013), we conducted secondary analyses to determine whether the known risk factors for suicidal symptoms in adults with and without mood disorders also applied to women after childbirth. Our study aim was to examine associations between SI and *plausible risk factors* (trauma history i.e. the experience of abuse in childhood or as an adult, sleep disturbance, and anxiety symptoms) in depressed postpartum women. The hypothesis was the experience of childhood abuse, current sleep disturbance, and increased levels of maternal anxiety would be associated with increased thoughts of self-harm in depressed postpartum women at 4–6 weeks after childbirth.

2. Methods

In the earlier report, we described in detail the design and methodology of the original postpartum depression (PPD) screening study approved by the University of Pittsburgh Institutional Review Board (Wisner et al., 2013). Postpartum women were enrolled in a depression screening program based at a major obstetrical hospital (Wisner et al., 2013). On the maternity ward, nurses or social workers approached women who delivered a live infant, provided information about PPD, and offered depression screens by telephone at 4–6 weeks postpartum. Potential participants who were 18 years or older signed a waiver to give permission for the phone screen. Exclusion criteria included non-English speaking, less than 18 years old, unable to provide consent or no phone availability.

To screen for PPD, we used the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987). The EPDS is a brief 10-item screening measure and is the most commonly used PPD screening tool worldwide (Gibson et al., 2009). Other appealing aspects of the EPDS included the uncomplicated scoring system by simple addition, proven patient acceptability in different socioeconomic and ethnic groups (Gibson et al., 2009), and evidence of psychometric validity (Hanusa et al., 2008). Postpartum women with a depression-positive phone screen (EPDS $\geq$ 10) (Cox et al., 1987) were offered an in-home evaluation to confirm the psychiatric diagnosis. At the home visit, Master's level clinicians completed the diagnostic evaluation; the Structured Clinical Interview for DSM-IV (SCID) (First et al., 1996) was used to confirm the primary and secondary psychiatric diagnoses (Table 1). Clinicians recorded the demographic and clinical data which included age, race, education, marital status, parity, chronic medical conditions and the time of depression onset (Tables 2 and 3). Woman who declined the in-home evaluation were offered an assessment for PPD by telephone with the SCID criteria for MDD only.

2.1. Study participants (Fig. 1)

For this secondary analysis, we included depressed postpartum women who were enrolled in the primary study (R01 MH 071825 for Identification and Therapy of Postpartum Depression; PI: Dr. Wisner). Study participants had an SCID-confirmed primary diagnosis of a current major depressive disorder (Hawton and van Heeringen, 2009) or anxiety disorder (Sareen et al., 2005). The primary study was designed to examine the outcomes of unipolar major depression in women during the first postpartum year. We completed the SCID interview to confirm diagnosis on all potential study patients and the clinical assessments of depression levels, anxiety symptoms and sleep disturbance only on the eligible patients with unipolar major postpartum depression. Patients with bipolar disorders and primary psychotic disorders were excluded because they were ineligible for the primary study and did not provide a complete set of clinical data for the required analyses.

2.2. Thoughts of self-harm

To evaluate self-harm ideation, we examined item 10 of the EPDS (presented as "The thought of harming myself has occurred to me"). Possible responses included 'never' = 0, 'hardly ever' = 1, 'sometimes' = 2, or 'quite often' = 3. Women who had high scores (EPDS $\geq$ 20) or any thoughts of self-harm (EPDS item 10 $\geq$ 1) were interviewed immediately by the supervising clinician to assess for safety and to develop an emergency intervention.

2.3. Abuse history

To define exposures to childhood and adult physical and sexual abuse, we inquired with standardized questions from the Dissociative Disorders Interview Schedule (DDIS) (Ross et al., 1989) which included the following items: As an adult, have you ever been hit, slapped, kicked or otherwise physically hurt by someone? As an adult, have you ever been forced to have an unwanted sexual act? Were you physically abused as a child or adolescent? Were you sexually abused as a child or adolescent? The inquiry provided dichotomous (yes/no) responses that were used to quantify the frequencies of each of the abuse exposures. Clinicians specifically explored for abuse history as part of an evaluation of patient safety, the risk for interpersonal violence, and other risks for comorbid disorders related to depressive disorders including post-traumatic stress disorder (PTSD). Abuse history was obtained by empathic inquiry into the patient's experience of physical abuse or sexual