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Research report

A new concept of maternity blues: Is there a subgroup of women with rapid cycling mood symptoms?



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ABSTRACT

Background: Rapid cycling mood symptoms during the first postpartum week are an important aspect of maternity blues. The aim of this study is to identify women with these rapid cycling mood symptoms in the general population and to investigate possible risk factors of these symptoms.

Methods: The Maternity Blues Scale (MBS) was validated in The Netherlands in 949 women at one week postpartum. Personal and family history of mood disorders and obstetric demographics were collected and the Edinburgh Postnatal Depression Scale (EPDS) was completed. A 16-item three-factor MBS solution was found: depression, negative and positive affect. The latter two were used to define a rapid cycling mood symptoms group.

Results: Using the 75th percentile cut-off, 20 (2%) women reported high negative/high positive affect (rapid cycling mood group) and 65 (7%) women were depressed (EPDS \geq 11). A previous episode of depression, major life events and instrumental delivery were independently related to depression (OR 3.5, 2.5 and 2.3, respectively) while only a history of depression in first-degree relatives was independently related to rapid cycling mood (OR 3.4, 95% CI 1.2–9.8).

Limitations First, no syndromal diagnoses were obtained for depression and rapid cycling mood disorder. Second, history of depression was self-reported (not based on structural psychiatric interviews). Third, our study was not designed to study the longitudinal follow-up of women with rapid cycling mood symptoms.

Conclusion the 16-item MBS could be useful in screening programs in detecting postpartum women at risk for (severe) mood disorders. Postpartum women with 'rapid cycling mood symptoms' can be identified with a possible more familiar form of mood disorder.

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1. Introduction

Within the first week following childbirth, a considerable proportion of women shows signs of intense short-lasting mood changes, commonly described as 'the blues'. Dysphoric mood, irritability, emotional lability, crying, anxiety, sleep disturbance and poor concentration are common symptoms of the blues which have longtime been described (Kendell et al., 1981, 1984; Kennerley and Gath, 1989;

Abbreviations: EPDS, Edinburgh Postnatal Depression Scale; CFA, Confirmatory Factor Analysis; CFI, Comparative Fit Index; MBS, Maternity Blues Scale; NFI, Normed Fit Index; RMSEA, Root Mean Square Error of Approximation; TLI, Tucker-Lewis Index; EFA, explorative factor analysis

O'Hara et al., 1990, 1991; Andrews-Fike, 1999; Stewart et al., 2003). Prevalence rates reported in the literature vary from 40% to 80%, (O'Hara and McCabe, 2013). Postpartum or maternity blues are regarded as a physiological phenomenon, with a characteristic peak between three and five days postpartum, most likely to be explained by abrupt endocrine changes (Buttner et al., 2012; Fooladi, 2006; Gonidakis et al., 2007; O'Hara and McCabe, 2013). The pathophysiological background is complex, for which at risk women might have differential sensitivity to the alteration of hormones, instead of altered levels of the hormones themselves (Bloch et al., 2003). Recently, one study proposed a neurobiological model of estrogen decline, followed by elevated MAO-A binding, leading to the blues (Sacher et al., 2010). Another model proposed hypercortisolism, followed by a transient adrenal suppression leading to postpartum blues (Kalantaridou et al., 2007; O'Keane et al., 2011). Further, a few studies have suggested that

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the occurrence of postpartum blues could be related to increased tryptophan breakdown, a physiological phenomenon of pregnancy and the postpartum period (Maes et al., 2002; Kohl et al., 2005) or that serotonin and/or adrenergic activity is related to the occurrence of blues (Doornbos et al., 2008).

Interestingly, apart from negative affect symptoms, blues symptoms also include positive affect symptoms and rapid cycling mood changes: from crying spells and irritability to elated feelings and happiness. Thus far, most research has been focused on negative affect symptoms of the blues such as depression, anxiety and distress. Kennerley and Gath (1989) developed the Maternity Blues Scale (MBS) to assess maternal mood symptoms during the first postpartum week. They showed that mood symptoms in the early postpartum period differed from those at other times in a woman's life (e.g., after major gynecological surgery, lles et al., 1989). A two factor structure has been described within the MBS: positive affect (PA) and negative affect (NA), PA is defined by mood items such as elated, alert, confident, mentally relaxed, whereas NA is characterized by descriptors such as irritability, helpless, oversensitive and afraid.

It is remarkable that most if not all of this research on the MBS does encompass dimensions of positive affect, but these positive items are recoded to enable that higher scores reflect higher 'negative affect' symptoms. Consequently, both positive affect and - hence - rapid mood changes in the early postpartum period are understudied. However, the positive symptoms and mood changes should not be overlooked, given the high risk for the first onset or exacerbation of bipolar-spectrum mood episodes in the postpartum period (Munk-Olsen et al., 2006; Sharma et al., 2009). Mania and affective psychosis are 22 times more prevalent in the early postpartum period compared to any other period in a women's life (Munk-Olsen et al., 2009). In addition, there is general consensus that bipolar depression is highly prevalent particularly in the postpartum period. Unfortunately, the actual prevalence of bipolar postpartum depression is unknown because bipolar depression postpartum is often misdiagnosed as unipolar depression (Sharma et al., 2009; Sharma and Xie, 2011). Accordingly, the present study was designed to identify women in the general postpartum population with high scores on both negative and positive affect ('rapid cycling mood symptoms'). Primary aim of the study was to validate the MBS for use in The Netherlands. Secondary aim was to evaluate determinants of high scores in women who reported high levels of positive and negative mood within the first postpartum week and compare them with determinants of depression during the first postpartum week. We hypothesized that women with 'rapid cycling mood symptoms' will have different characteristics compared to women with depression symptoms during the first postpartum week.

2. Method

2.1. Study design

The study used a prospective longitudinal design and included three steps. The first step evaluated the psychometric properties of the translated scale. The second step consisted of another statistical analysis to confirm the structure of the first draft of the Dutch scale. The third step included concurrent validity analysis and research into determinants of high scores on several instruments (MBS and EPDS) that were used.

2.2. Procedure and participants

A Dutch translation of the Maternity Blues Scale (MBS) of Kennerley and Gath (1989), a 28-item self-rating scale was distributed in seven community midwife offices to examine its psychometric properties. A total of 1347 third late trimester (32–34 weeks) pregnant women

visiting their midwife were invited to participate in the study. Women who signed the informed consent and met all inclusion criteria were asked to fill in the 28 full-item version of the MBS, the 10-item version of the EPDS and some additional questions regarding obstetric outcome at the seventh postpartum day. Exclusion criteria were: not being Caucasian and not being able to read and understand Dutch sufficiently. In addition, women with preterm birth (< 37 weeks of gestation), women who gave birth to a child with serious congenital abnormality or had a postnatal hospitalization of the newborn were excluded from the analysis. The total sample of respondents was randomly divided into two subsamples. Sample I was used to conduct an explorative factor analysis (EFA) while sample II was used to conduct a Confirmatory Factor Analysis (CFA). Thereafter, data from sample I and II were merged for further analysis.

The study was approved by the Medical Ethics Research Committee of the Máxima Medical Centre in Veldhoven, The Netherlands.

2.3. Measurements

The MBS (Kennerley and Gath, 1989) was used to assess blues symptoms. The original draft of this scale consisted of 47 different items adjectives describing women's emotional experiences during the first few days following childbirth. Construct analysis resulted in a 28item scale including seven clusters: primary blues, decreased alertness, hypersensitivity, decreased self-confidence, depression, despondency, and reservation (Kennerley and Gath, 1989). In general the positive items are recoded to achieve a total score where higher scores reflect higher intensity of blues symptoms. Contrarily to the original scale, the Dutch version had a 5-point Likert scale referring to symptoms during the first postpartum week (much less than usual, less than usual, no different, more than usual, much more than usual) and the positive items were not recoded. The Edinburgh Postnatal Depression Scale (EPDS) was used to assess maternal depression (Cox et al., 1987) during the first postpartum week. The EPDS is a brief self-rating scale, total EPDS scores range from 0 to 30, higher scores indicate more depressive symptoms. The EPDS has extensively been validated in The Netherlands in the postpartum as well as during pregnancy (Pop et al., 1992; Bergink et al., 2011) and is commonly the most widely used scale to assess depressive symptoms in the postpartum period. Using a cutoff of 11, clinical depression is detected in up to 60% of the cases with adequate specificity and sensitivity. Demographic characteristics were obtained including age, marital status, educational level, obstetric features including parity and mode of delivery. Moreover, a concise set of questions was asked with regard to life time depression. First, the women were asked whether they had a diagnosis of depression earlier in life. Second, they were asked whether one or both parents or sister(s) and/or brother(s) (first-degree family members) were diagnosed with depression. Finally, they were asked whether a major life event (not in relation to childbearing or the baby's health) did occur during pregnancy and the first postpartum week.

2.4. Statistical methods

Statistical analyses were performed using SPSS (version 20.0, IBM, Chicago, Illinois, USA). An explorative factor analysis (EFA) with varimax rotation was performed on the full 28-item version of the MBS in sample I. Factor loadings above 0.40 were considered important. If an item loaded on more than one dimension and the differences were less than 0.20, the item was deleted. Subsequently, Confirmatory Factor analysis (CFA) was performed on the retaining items of the MBS to test the stability of the factor structures found with EFA. The Confirmatory Factor analysis (CFA) was done using AMOS (version 20, IBM, Chicago, Illinois, USA). Adequate model fit can be assumed with a comparative fit index (CFI) \geq 0.80, combined with a Normed Fit Index (NFI) \geq 0.80, a Tucker-Lewis Index (TLI) \geq 0.80 and a Root Mean Square

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