Author's response to reviews

Title: Is postpartum depression a homogenous disorder? Time of onset, severity, symptoms and hopelessness in relation to course of depression

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Dear Editor in chief

We submit our revised manuscript “Is postpartum depression a homogenous disorder? Time of onset, severity, symptoms and hopelessness in relation to course of depression” to BMC Pregnancy and Childbirth.

We thank the reviewers for their comments. We are addressed our comments in the revised manuscript and made the cover letter with point-by-point responses. Moreover, we found a mistake. This is represented after point-by-point responses. We have also made changes because of this mistake in revised manuscript.

With my best regards

Pirjo Kettunen MD
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We thank the reviewer for his interest in our manuscript and for his constructive criticism and helpful advices. Our response to the reviewer is the following:

1. “At this stage of the paper the description of the methodology does not provide enough information necessary to establish whether sampling needs to be considered convenience sampling or whether it can be considered systematic sampling.”

We have made the following changes:

The “Methods” section, in page 7, first paragraph.
“A postpartum examination is offered in Finland to all mothers six weeks after childbirth, after the puerperium period (41). All mothers were screened during this examination by primary care nurses at the antenatal clinic in Joensuu, Eastern Finland, using the Edinburg Postnatal Depression Scale (EPDS-10, range 0-30) (42). If the depressive symptoms of mothers began later, up to six months after delivery, they contacted their antenatal clinics nurses, who assessed their depression using the EPDS. If the EPDS score was > 10 or there was a clinical suspicion of depression, nurses told the mother that she could be assessed by a psychiatrist (PK) in the local General Hospital Psychiatric unit at North Karelia Central Hospital in Joensuu. This community-based hospital unit serves a socioeconomically diverse population. All mothers who wanted to attend the psychiatric unit were evaluated by a psychiatrist at six weeks to six months after delivery. Psychotic, addictive and thyroid disorders were excluded.”

The “Methods” section, beginning in page 8, last paragraph.
“The final study group consisted of 104 mothers with a major depressive episode, aged 18-40 years, and willing to participate. Data collection took place in the years 2003 to 2013. A control group of non-depressed mothers was collected at the antenatal clinic in Joensuu. If the EPDS – score was < 10 in postpartum examinations, primary care nurses asked if the mothers were willing to participate in the non-depressed group of mothers and organised psychiatric evaluation. The final control group consisted of 104 non-depressed mothers, evaluated six weeks to six months after delivery and aged 18 to 40 year. The control group was collected during the years 2008 to 2010. Psychotic, addictive and thyroid disorders were again excluded.”

The “Discussion” section, in page 14, last paragraph.
“Furthermore, the sample was a convenience sample. We could evaluate only those mothers who accepted a suggestion by the primary care nurses to attend a general hospital unit because of depressive symptoms. Nevertheless, the depression group and the healthy control group represent the same population.”

2. “The method to establish the DSM diagnosis of PPD is clear. The authors used the SCID interview which is "gold standard". However their method to establish the diagnosis of depressive episodes in pregnancy or outside pregnancy is not so clear. The authors write: “…The
groups were asked questions about the onset of depression and experiences of previous depressive episodes in semi-structured interviews. Previous episodes were classified into different groups as follows: episodes without connection to pregnancy and postpartum period, episodes during pregnancy, episodes during previous pregnancies and previous postpartum depression. It remains a bit unclear which instrument they used for this purpose.

We have made the following changes:

The “Methods” section, in page 8, first paragraph.
“The groups were asked questions about the onset of depression and experiences of previous depressive episodes as a part of semi-structured SCID interviews. Previous depressive episodes were assessed by asking, if the mothers has or has not had persistent depressions for at least two weeks without connection to pregnancy and the postpartum period, during pregnancy, during previous pregnancies and previous postpartum depression at up to six months after delivery, and the answers were classified as yes or no. The onset of postpartum depression was assessed by asking, how long after the childbirth depression began. This was reported in weeks after delivery.”

3. “Furthermore they do not explain clearly enough whether and how they differentiated between participating women with different numbers of pregnancies and childbirths and respective different outcomes.”

We have made the following changes:

The “Methods” section, in page 8, second paragraph.
“The mothers were also asked if they had childbirth with a living infant or not, and how many children they had.”

The “Results” section, in page 9, first paragraph.
The frequency of being a mother of the first living infant was as common in both groups (51.0% and 46.6%, respectively, Pearson chi-square p = 0.49). All the mothers had childbirths with a living infant.

4. “Another point to clarify is the SCID based assessment of associated symptoms of depression with participants not fulfilling the entry criteria of a diagnosis of PPD.”

We have made the following changes:

The “Methods” section, in page 7, second paragraph.
“The diagnosis of major depressive disorder in the study group (depressed mothers) and the control group (non-depressed mothers) were assessed by means of the Structured Clinical Interview (SCID-1) for Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) by a psychiatrist (PK) (10, 43). The DSM-IV uses the term “postpartum onset” as a specifier applicable to major depressive disorder, bipolar disorder or brief psychotic disorder occurring over the first 4 weeks after childbirth (10). The diagnostic criteria for a Major Depressive Episode (MDE) as defined by the DSM-IV include five (or more) of the following symptoms: at least 2 weeks of persistent
depressed mood, loss of interest/pleasure, increased or decreased appetite, sleep disturbance, psychomotor agitation or retardation, decreased energy, feelings of worthlessness or guilt, low concentration and suicidal ideation. At least one of the symptoms is either depressed mood or loss of interest. For this study, all nine SCID symptoms – the entry criteria (depressed mood and/or loss of interest) and seven associated symptoms – were assessed in the depressed and non-depressed group. This procedure, i.e. an adaptation of the usual SCID procedure, allows comparisons of all SCID symptoms between groups.”

5. “Needs some language correlations before being published”

We have made some language correlations.

Responses to Liz Forty:

We thank the reviewer for her interest in our manuscript and for her constructive criticism and helpful advices. Our response to the reviewer is the following:

6. “The authors should clearly define exactly what they mean by "homogenous" in this context, and why they feel that this is an important research question to address- why is this clinically relevant- why do we need to know this?”

The “Background” section, in page 6, second paragraph.

“Postpartum depression is common, but it is often missed by primary care teams. Moreover, mothers often face help-seeking barriers such as an inability to disclose their feelings and recognise the symptoms of depression. It is not easy to differentiate PPD from other psychiatric and non-psychiatric disorders or from healthy mothers. The postpartum period is unique with respect to psychosocial adjustments and degree of neuroendocrine alterations, and there seems to be variability because of underlying processes and diversity of symptoms. The course of depression also seems to be different.
In the context of our study we are interested to know, if PPD is homogenous according to the course of depression, time of onset, severity, symptoms and hopelessness. The results may have clinically important implications for the detecting, screening and further treatment of this disorder. The study was designed to assess the course of depression, time of onset, severity of symptoms, symptoms profile and hopelessness in order to find out … (a) – (e).”

7. “The authors should highlight more clearly the findings of this study that add to the current literature, compared to those findings that are just confirming what we already know.”

The “Discussion” section, in page 12, second paragraph – page 14, first paragraph.

This study shows that the BDI, EPDS and BHS scores were significantly different between the major depressed and the non-depressed postpartum mothers. The capacity of these scales to differentiate depressed and non-depressed mothers is good. All nine SCID symptoms and all SCL-90 symptoms were different between the major depressed and the non-depressed postpartum mothers. The symptom profile was wide, as shown by numerous studies (6, 30-38). Increased or decreased appetite, sleep disturbances and decreased energy, which may be difficult to differentiate from healthy women because of postpartum status or of other medical reasons or child
care stress (6-8) were also different. Many of the symptoms are similar to those in generalised anxiety disorders, panic disorders, post-traumatic stress disorders, obsessive-compulsive disorders and personality disorders, and co-morbidity may be high between these disorders and PPD (10, 13-17).

Baby blues is common during 10 days after delivery (9-10), and 46.2% of the mothers in the present study told that the onset of depression occurred within the baby blues period. Pawar et al. (26) found that only 2.5% of women acknowledged major depression symptoms within the first 2 days after delivery. In our study depression during baby blues was more common among those who had depression during pregnancy than among those who had no depression during pregnancy. It can be supposed that in some mothers depression continues after pregnancy across the baby blues period. It has to be noted, however, that the method used in this study was retrospective self-report and the period assessed was longer. In some mothers there may be a recall bias and they have not been able to differentiate between the symptoms of baby blues and the beginning of a major depressive episode. According to the DSM-IV postpartum depression occurs within 4 weeks after delivery. Seventy-four per cent of our depressed mothers had PPD within that time period. The puerperium period is 6 weeks, and 83.7% of depressed mothers had PPD within that period. It can be supposed that for some mothers depression continues after pregnancy. Nevertheless, most of mothers get a new episode usually within four to six weeks, 98.1% within three months and a total of 100% is reached within 22 weeks after childbirth. Our results are in line with previous studies (20, 27-29).

A new finding is that there were differences in severities of depressive symptoms according to previous depressions. Hopelessness and severity of PPD according to the number of SCID symptoms and the BDI score were lower in the first depression, in depression without depression during pregnancy and in pure PPD than in other types of depressions. EPDS score, the specific measure to PPD, was significantly lower in the first depression and in pure PPD.

Adding to the current literature it can be stated that there was a great variety in symptoms with PPD in regards to previous depressions. Anxiety and obsessive-compulsive symptoms are common with PPD according to earlier studies (30,32-35). Obsessive-compulsive symptoms, phobic anxiety and paranoid ideation were common with all kinds of depression histories. The symptoms of pure PPD were very similar compared to the first depression episode and to depression without a history of depression during pregnancy. Somatisation, interpersonal sensitivity, hostility and psychoticism were lighter in the first depression than in recurrent depressions and among those without a history of depression during pregnancy compared to those who had. The same applies to those having pure PPD as opposed to those having other types of depressions. In this study anxiety was lighter among those without a history of depression during pregnancy and in pure PPD.

A new finding is also that the MDE symptoms were varying in regards to previous depressions. According to previous studies psychomotor symptoms, decreased energy, changes in appetite, sleep disturbances, low concentration and light suicidal ideation are typical of PPD (6,30,31,36). In this study symptoms such as depressed mood, loss of interest/pleasure, psychomotor agitation/retardation and decreased energy were common with all kinds of depression histories. Diagnostic criteria for MDE include depressed mood or loss of interest (10), and these criteria may be of a greater importance because of the definition of MDE. Furthermore, changes in appetite, sleep disturbances and suicidal ideations was less prevalent in the first depression than in recurrent depression and in pure PPD than in other types of depressions. Low concentration was significantly less prevalent only in pure PPD. If mothers had experienced depression during pregnancy, their worthlessness was higher, which may be a result of negative experiences during pregnancy.
8. “The authors have conducted a large number of comparisons and adjustments should be made for multiple testing.”
We thank the reviewer for this comment. However, did not change our analyses. Firstly, the statistical reviewer (Giuliana Cortese) did not call for any adjustments. According to Cortese “the statistical analyses performed by the authors on the data in the paper are appropriate and results are well reported.” Secondly, it is “widely held by epidemiologists that Bonferroni adjustments are, at best, unnecessary and, at worts, deleterious to sound statistical interference” (Perneger TV. What’s wrong with Bonferroni adjustments. BMJ 1998;316:1236).

9. “The fact that the psychiatrist conducting the clinical interviews was not blind to the mothers depression status should be included as a limitation - in that this could have introduced bias.”
We thank the reviewer for this comment. We have added it to the “Discussion” section (page 14, last paragraph).

10. “The authors should explain why they had a particular focus on "hopelessness" - why did they feel that this particular symptom/element required a particular focus?”
The “Background” section, in page 6, first paragraph.
The mood in a major depressive episode is often described by the person as sad, hopeless and discouraged (10). Hopelessness has been identified as one of the core characteristics of depression. A common denomination in depression is a pattern of negative expectations about the future (39). It is generally supposed, that childbirth induces hope and positive expectations about the future. However, many mothers with PPD express hopelessness at a time you would expect to see joy and hope (40). Because of this contradiction more studies are needed on hopelessness among depressed mothers.

11. “Needs some language corrections before being published.”
We have made some language correlations.

Responses to Giuliana Cortese:
We thank the reviewer for his interest in our manuscript and for his constructive criticism and helpful advices. Our response to the reviewer is the following:

12. “In the section Method, the author wrote that participants were recruited during the examination at six months after childbirth, or later up to twenty-four weeks. They wrote also that the participants were studied six to twenty-four weeks after delivery. Is the information about the period from six to twenty-four weeks obtained retrospectively for those participants recruited later than six months from delivery?”
The “Methods” section, in pages 7-8
All mothers were recruited and studied by a psychiatrist at six weeks to six months after delivery.

13. “Table 3: cumulative frequencies are here reported, that is, those mothers having depression at delivery have also depression after ten days, after four weeks and after six weeks. Then, it is difficult to see how many participants had depression from delivery, how many only after 10 days, how many only after four weeks, and so on. Would it be clearer to report the simple frequencies here?”

This is a good comment. We notice also that the classification “during delivery/ approximately after childbirth” was unclear. We reported the simple frequencies in weeks after delivery in Table 3 and in the “Results” section and made changes in the “Discussion” section.

The “Results” section, in page 10, third paragraph.
Forty-six per cent (46.2%) of the depressed mothers were depressed within 1.5 weeks, 74.0% within 4 weeks, 83.6% within 6 weeks and 98.1% within three months after childbirth. A total of 100% of PPD diagnoses was reached within 22 weeks after childbirth. Fifty-nine per cent (59.1%) of the mothers, who were depressed during pregnancy and 36.7% of those who had no history of depression during pregnancy were depressed within 1.5 weeks after childbirth. There were no differences between these groups later (Table 3). No differences were found in the time of occurrence between the first and recurrent episodes of depression and between pure and other types of postpartum depression (Table 3).

The “Discussion” section, in page 12, last paragraph – page 13.
Baby blues is common during 10 days after delivery (9-10), and 46.2% of the mothers in the present study told that the onset of depression occurred within the baby blues period. Pawar et al. (26) found that only 2.5% of women acknowledged major depression symptoms within the first 2 days after delivery. In our study depression during baby blues was more common among those who had depression during pregnancy than among those who had no depression during pregnancy. It can be supposed that in some mothers depression continues after pregnancy across the baby blues period. It has to be noted, however, that the method used in this study was retrospective self-report and the period assessed was longer. In some mothers there may be a recall bias and they have not been able to differentiate between the symptoms of baby blues and the beginning of a major depressive episode. According to the DSM-IV postpartum depression occurs within 4 weeks after delivery. Seventy-four per cent of our depressed mothers had PPD within that time period. The puerperium period is 6 weeks, and 83.7% of depressed mothers had PPD within that period. It can be supposed that for some mothers depression continues after pregnancy. Nevertheless, most of mothers get a new episode usually within four to six weeks, 98.1% within three months and a total of 100% is reached within 22 weeks after childbirth. Our results are in line with previous studies (20, 27-29).

Correction of the mistake
There is a mistake in codes which still needs to be corrected:
Number of first depression is 19 (not 18) and number of pure depression 83 (not 82).
Changes in table 4: EPDS score is significantly different between pure and other types of depression.
Changes in table 5: SCL-90 depression is significantly different between pure and other types of depression. SCL-90 anxiety is significantly different between pure and other types of depression. SCL-90 psychoticism is significant between first and recurrent depression. SCL-90 paranoid ideation is not significant between first and recurrent depression.

Changes in table 6: Low concentration is not significant between first and recurrent depression. Suicidal ideation is significant between pure and other types of depression.

We have made these corrections in the tables, results, discussion and abstract.