Reviewer's report

Title: Trajectories of maternal sleep problems before and after childbirth: a longitudinal population-based study

Version: 2  Date: 23 February 2015

Reviewer: Leigh Signal

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The manuscript describes a longitudinal study of 1480 women who were followed from late pregnancy until 2 years postpartum. The focus of the study is on the prevalence of short sleep and insomnia symptoms over this time, and the key predictors of these outcomes. Findings indicated high rates of Insomnia and short sleep across all 3 time points.

The manuscript addresses an interesting and relevant research question, which is the persistence of abnormal sleep across the perinatal period and into early motherhood. Although I believe that the study has the potential to add to current understanding of sleep across this time there are a number of key issues that need to be addressed before I feel it is suitable for publication.

Major compulsory revisions

1. The relationship between the current paper and previous papers (Dorheim et al. 2012; Dorheim et al 2014) requires clarification.
   a. It is my understanding that the same cohort of women is used in the current manuscript and the 2 earlier studies, with each paper adding an additional time point. I believe this should be made explicit in the current manuscript and the relationships between the papers and their findings in relation to the current manuscript described.
   b. The numbers provided in Figure 1 in the current manuscript differ from those provided in Figure 1 of the 2014 paper (e.g. the number of unreturned questionnaires between times B-C, and C-D, and the number of women involved in the study 8 weeks postpartum. Given the measures are the same in both papers I am not sure why different numbers of women are involved. Please explain why this is the case.
   c. Much of the information provided in the current paper is already presented in the earlier papers, although findings differ slightly due to the reducing number of participants involved in the most recent paper. Is all this repetition necessary?

2. Given that only 32% of the original cohort responded at 2 years postpartum it is important to understand the characteristics of the non-responders. Please provide demographic information on the non-responders vs responders and also where the information is available, the differences between the responders and non-responders with regard to the key variables (insomnia rates, short sleep and depression) between times C-D, and D-E. Without such information it is not
possible to make a judgement on the generalizability of the study findings.

3. In the previous paper (Dorheim et al 2014) Insomnia was not found to predict postpartum depression after correcting for a prior history of depression, but women who recovered from depression had higher Insomnia scores and those that developed new depression had higher Insomnia scores in pregnancy. Given these associations why was only depression at 2 years postpartum included in models in the current manuscript? The presence or absence of depression at earlier time points seems to potentially be a key predictor both of subsequent Insomnia and also short sleep.

4. Why were demographic information collected at 17 weeks pregnancy used as predictors in the models and not more recent information? Marital status and BMI may have changed considerably since early in pregnancy and therefore have consequences of the outcomes of interest.

5. Please make it clear in the Methods that the PSQI was completed at all time points.

6. Please explain why negative binomial regression analyses were employed.

Minor essential revisions
1. In general the manuscript is well written and easy to read. There are a few places in the Background in particular where edits are suggested. These include:
   a. Line 49, “already” not required
   b. Line 53, suggest the term “feeding” is used rather than “breastfeeding”, since bottle feeding can also result in sleep disturbance for mothers.
   c. Line 56, I don’t feel that short sleep and Insomnia should be described as “normal”, perhaps “common” or “frequent” is more appropriate.
   d. Line 64 and 69, instead of “sustain”, suggest “continue”
   e. Line 73, “need” instead of “needs”

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests