Author’s response to reviews

Title: Integrated mental health care in a multidisciplinary maternal and child health service in the community: The findings from the Suzaka trial

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Hiromi Tarui (fuku@nursen.or.jp)
Dr. Kedra Wallace
Editor,
The BMC Pregnancy and Childbirth

Dear Dr. Kedra Wallace,

Thank you very much for taking the time to review our manuscript. The comments by the reviewers were highly insightful and enabled us to greatly improve the quality of our manuscript. In the following pages are our point-by-point responses to each of the reviewer’s comments. Please accept our apologies for the delay. We hope that the revisions in the manuscript and our accompanying responses will be sufficient to make our manuscript suitable for publication in BMC Pregnancy and Childbirth.

We shall look forward to hearing from your reply.

Yours sincerely,
Yoshiyuki Tachibana, MD, PhD
Technical Comments:

Title page

- Please include the email addresses for all authors on the title page. The corresponding author should still be indicated. Please also ensure these email addresses match the email addresses provided in the editorial manager system.

Response: The email addresses of all the authors have now been included on the title page, and those addresses match the email addresses provided in the editorial manager system.

The corresponding author has been indicated.

RESPONSES TO COMMENTS BY REVIEWER 1: Dr. Kedra Wallace

Methods:

- In Figure 1, under the intervention arm it's stated that 210 women received PHN visits post-partum. How is this possible if only 153 women started off in this arm of the study?

Response: We are sorry for the confusing figure. We corrected Figure 1. Among the 153 women of the intervention group who were assessed as "Not at risk of psychosocial problems" at the initial interview by a public health nurse, 136 women were assessed as "Not at risk of psychosocial problems", 18 women were assessed as "At risk of psychosocial problems", and 9 women did not receive a home visit from a public health nurse. Among the 47 women who were assessed as “At risk of psychosocial problems” at the initial interview by the public health nurse who were followed up as high-risk cases, 4 women did not receive home visits from the public health nurses. Seventy-four women of the intervention group were followed up as high-risk cases by the public health nurses before the medical examinations of the 3–4-month-old infants.

- Are the dates in Line 112 correct? If so please list them in accordance to first appearance.

Response: The date in the sentence was incorrect. The correct dates were “between June 2013 and March 2014” (P. 8. lines 129–130).

- What was the reason for not randomizing women to either control or intervention?

Response: This was one of the limitations of this study. The aim of this study was to examine Suzaka City’s new mother and child services according to the agreement of Suzaka city’s local government. Since the research field was limited to Suzaka City, we could not extend this
intervention program to other cities. Since the intervention program was delivered as one of the Suzaka city’s public service, we needed to deliver the same intervention program as a health service to every participant in the same period. Thus, we could not randomize the participants into either a control or intervention group. This is why we used a historical control design, in which we set the participants before Suzaka trial started as the control group, and the participants after the Suzaka trial started as the intervention group.

- Lines 121-135 need to appear after lines 140-155 and be integrated with the next paragraph.
Response: We put Lines 121-135 after lines 140-155 and integrated these parts in the next paragraph (P. 8. line 141–P. 9. line 171).

- It should be denoted in the flow diagram that the 43 women who were identified with psychosocial problems had monthly multidisciplinary support meetings.
Response: We corrected the figure and mentioned that the 43 women who were found to have psychosocial problems had monthly multidisciplinary support meetings. Since the women at risk of psychosocial problems were followed up by the public health nurses and the monthly multidisciplinary support meetings, we denoted it with the box of women at risk of psychosocial problems in the intervention group in Figure 1.

- Please restate lines 115-118 to something like, "In addition to the study participants the multidisciplinary team included .......") OR refer to the multidisciplinary team as the child health service professional team at first mention.
Response: We corrected the following passage: P. 8. lines 133–138.

In multidisciplinary support meetings, which were held once a month, the care plan for women who were identified as being at risk for developing psychosocial problems was discussed. The multidisciplinary team meeting included public health nurses, obstetricians, midwives, nurses, medical social workers, and psychiatrists. The total number of professionals attending these meetings ranged from 15 to 25.

- What stage of pregnancy (weeks, trimester, etc.) were women enrolled in this study?
Response: We added a description about the stage of pregnancy when the women enrolled in this study: P. 13. lines 241–242.
Regarding the pregnancy stage, women in the intervention and control groups were enrolled at a mean of 10.80 (4.27) and 10.50 (4.41) weeks, respectively.

(Regarding the description of mean and standard deviation, please see our response as below.)

- In the analysis section please state that data is reported as mean +/- standard deviation

Response: We checked the description of the BMC Pregnancy and Childbirth, and “mean (standard deviation)” seems to be more commonly used than “mean +/- standard deviation”. Thus, we used the expression “mean (standard deviation)” in the Abstract, and the “Analysis” sub-sections of the Methods, and Results.

In more detail,


The total EPDS score, which was the primary outcome of the present study, differed significantly between the intervention and control groups (Mean [SD] = 2.74 (2.89) and 4.58 [2.62], respectively; p<0.001).

Methods: P. 12. line 234.

Data were reported as “the mean (standard deviation)”.

Results:

- Please state the data as mean +/- standard deviation only (i.e. 30.86 +/- 0.28)

Response: We corrected the results according to your suggestion:

In more detail,

P. 13. lines 239–240.

The mean ages of the women in the control and intervention groups were 30.86 (0.28) and 30.50 (0.26) years, respectively; this difference was not statistically significant (p = 0.86).


The total EPDS score, which was the primary outcome of the present study, differed significantly between the intervention [2.74 (2.89)] and control [4.58 (2.62)] groups (p<0.001). The EPDS
scores of the intervention group, which were obtained at the initial interview by the public health nurses when the women submitted their pregnancy notification forms) and those at the neonatal home visits were 3.59 (1.48) and 3.16 (3.32), respectively.

- Line 220 regarding the number of births is not readily relevant to the current manuscript.

Response: Since the number of births is not strictly relevant to the current manuscript and we cannot obtain Suzaka city’s monthly birth information, we deleted the description.

Discussion

- Why were women not separated out based on parity? For instance stressful situations regarding another child in the home could directly contribute to maternal mood in the current pregnancy. The same question regarding women with a history of depression/anxiety or women with a history of traumatic birth experience. These are all confounds that can skew your data especially since the positive response to therapy would be expected to be larger.

Response: Thank you very much for these important suggestions. Since the aim of this study was to investigate the effectiveness of the intervention program as a population approach for enhancing women’s mental health in the perinatal periods (for both women at risk of psychosocial problems and women who are not at risk), we would prioritize the predefined main analysis, which examined all of the participants using t-tests.

In addition, according to your suggestion, we performed stratified analyses with parity and history of psychiatric treatment, which were reported to be important antenatal risk factors for postnatal depression in our previous study. The results showed that this intervention program had significant effects on the total EPDS scores of both primiparas and multiparas during the 3–4 month postpartum period. The results also showed that the intervention program had significant effects on women without a history of psychiatric treatment, but not on women with such a history. We added these details to the Methods, Results, and Discussion.

However, we did not collect information on the history of traumatic birth experience. Since further studies considering other confounding factors besides parity and history of psychiatric treatment are needed, we mentioned it as a limitation of the present study.

Methods

Sub-analysis

We performed two stratified analyses in which the participants were classified into two groups: “primipara and multipara” and “participants with a history of psychiatric treatment and participants without a history of psychiatric treatment”. Hence, primipara means those who delivered the first offspring while participating in this study; multipara means those who had delivered once or more before participating in this study. The variables that were analyzed included risk factors for antenatal depression that were reported in our previous study [16].

Results


The results of the sub-analysis are shown in Table 3. This intervention program had significant effects on the EPDS total score at 3–4 months postpartum in both primiparas and multiparas. The results also showed that the intervention program had significant effects on women who did not have a history of psychiatric treatment, but not on women who had a history of psychiatric treatment.

Discussion

P. 17. line 332–P. 18. line 367.

The results of the stratified analyses suggest that this intervention program may be effective for improving the mental health of both primipara women and multipara women in the 3–4 months postpartum period. Hung’s study suggested that tailored nursing interventions based on differences in parity may help to reduce postpartum stress and help to prevent postnatal psychological problems [50, 51]. In her study, the primiparas had higher scores for postpartum stress, concerns about negative body changes, concerns about maternal role attainment, while multiparas had higher scores than primiparas regarding concerns about the lack of social support [50]. Our intervention program supports those problems and concerns. In cases in which a woman has psychological stress, concerns about her body condition, or does not have self-efficacy as a mother, related professionals such as public health nurses and midwives can support her. When a woman has a lack of social support, various forms of support, including home help services and childcare services will be proposed to her when the related professional notices a lack of social support. These characteristics of our program may be effective for both primipara and multipara women.

There was a discrepancy in the stratified analysis between the women with and without a history of psychiatric treatment. On the other hand, the results of the main analysis and the
stratified analyses of the patients without a history of psychiatric treatment were consistent. There are two possible explanations for the discrepancy in the results of the women with and without a history of psychiatric treatment and the results of the stratified analysis of the participants with a history of psychiatric treatment did not show statistically significant effects. The first possibility is that the analysis for the participants with a history of psychiatric treatment lacked the statistical power needed to detect a significant difference between the two groups. The second possibility is that some other intervention effects might have obscured the effects of the intervention program. Since the T1 section of the questionnaire only asked whether the respondent had "a history of psychiatric treatment", the number of participants who were currently receiving psychiatric treatment among the patients with a history of psychiatric treatment was not clear in either group. However, it is thought that many of the patients with a history of psychiatric treatment were currently receiving psychiatric treatment. Such treatment for women with mental health problems might have obscured the effects of the intervention program. A previous study suggested that psychiatric treatments such as psychoeducation, psychotherapy, and medication have positive effects on women’s mental health during the perinatal period [17, 23]. Thus, the intervention program may be expected to have some effects in women with or without a history of psychiatric treatment. Further research should be performed to investigate the effects of the intervention program on women with a history of psychiatric treatment and their association with the effects of other coexisting interventions.

P.19. line 384-387

Fourthly, this study performed a sub-analysis with parity and history of psychiatric treatment, as these were shown to be important antenatal risk factors for postnatal depression in our previous study (Tachibana et al., 2014). However, there may be other confounding factors affecting the intervention program. Further studies should be performed to investigate the effects of the intervention program on women in the perinatal period who have other confounding factors besides parity and a history of psychiatric treatment.

- How many (if any) women were depressed?

Response: In this study, the women’s mental health was only assessed using the EPDS. We did not perform a structured interview to diagnose a depressive state. This was one of the limitations of this study. We added this information to the Discussion: P. 18. lines 369–370.

Thus, the number of women with clinical depression was not clarified in this study.
RESPONSES TO COMMENTS BY REVIEWER 2: Dr. Hazel Keedle:

- Thank you for the opportunity to review this manuscript. I feel it is an important area to research and I was interested in the methodology of the study. Reading the manuscript I did find some issues and I will address these now.

My criticism with the methodology was the measurement of the EPDS. In the abstract and in the main body of the manuscript you only focus on the postnatal EPDS done at the end of the study and it wasn't until line 152 that it is mentioned the EPDS was done in the initial psychosocial assessment. I would think that a comparison between EPDS scores pre and post intervention (or no intervention) would be reported on and also it should be mentioned that pre and post were done rather than just post, especially in the abstract and with the sentence in line 94.

Response: Only the women of the intervention group were assessed using the EPDS in the pre-intervention period. The women in the control group were not assessed. This was because, in Suzaka City, mental health and psychosocial risk screening for women in the perinatal period had not been performed prior to the initiation of the Suzaka program. Thus, it was impossible to compare the effects of the intervention program based on the EPDS scores before and after the intervention period. Since the Suzaka program included mental health screening when public health nurses performed home visits, we added the EPDS results obtained at the interview by the public health nurses when the women submitted their pregnancy notification forms and at the neonatal home visits.
Results


The mean EPDS scores of the intervention group, which were obtained at the initial interview by the public health nurses when the women submitted their pregnancy notification forms) and those that were obtained at the neonatal home visits were 3.59 (1.48) and 3.16 (3.32), respectively.

We also added the following description about this issue as one of the limitations of the present study in the Discussion.

Discussion


Thirdly, since this study did not measure the pre-intervention EPDS, we cannot suggest that this program may make women’s postnatal mental health better, we can only suggest that it may make women’s mental health better in the postnatal period. In this study, we did not measure the EPDS at the pre-intervention period (when they turned in the pregnancy notification form). However, the program for the participants of the intervention group was held in the area in which the control group lived, the baseline EPDS data at the time when they turned in their pregnancy notification form can therefore be predicted to be similar. Thus, although we could not compare the two groups with a pre–post design, we thought the results in relation to the primary outcome of the present study would—to some extent—serve as a reference to infer the effects of the intervention program.

- The language doesn't always have consistency. For example in line 142 you refer to 'mothers', line 144 'patients', line 146 'participants' and line 147 'women'. For clarification and consistency it would be best to stick to one or two terms, not four. I suggest women and participants and not to use mothers and patients to ensure women-centered language.

Response: We corrected “mothers” and “participants” to “women” to have consistency.

- Line 156 you discuss the multidisciplinary support meetings but it is unsure if all the women had these or just the intervention group. This needs further clarification.
Response: Multidisciplinary support meetings were only held for the women in the intervention group, and not for those in the control group. We noted this in the following sentence: P. 10. lines 172–173.

The multidisciplinary support meetings, which were held for the women of the intervention group, were also an important characteristic of the Suzaka program.

- Line 235 - I think you need to be clearer with the aims of the study, is it to reduce EPDS? If so you also need to report on pre EPDS as suggested above. Are you stating that those in the intervention group would have a lower EPDS due to the intervention or due to increased monitoring or is the intervention and increased monitoring better at picking up those with a high EPDS. This needs clarification.

Response: We are stating that those in the intervention group would have a lower EPDS due to the intervention program or due to increased monitoring by the Suzaka program.

We changed the description as follows:

Abstract
P. 4. lines 44–47.

The aim of this study was to examine the effects of the program with respect to making women’s mental health better in the postpartum period and improving the state of care for women and their children in the perinatal period.

Background

The hypotheses, which was that the program would make women’s mental health better in the postpartum period and improve the state of care for the women and their children, was tested using a controlled study that investigated the effectiveness of a multidisciplinary health service intervention program that provided continuous support to women and their children in Suzaka City, Japan.
Discussion

P. 14. lines 267–270.

The study demonstrated the effectiveness of a multidisciplinary health service intervention program, which aimed to provide continuous support to the women and their children from the start of pregnancy to childbirth, in making women's mental health better in the 3–4 months postpartum period, which was measured by the EPDS.


The significant differences in the EPDS scores of the 3–4-month-old infants’ medical examinations between the intervention and control group suggests that the Suzaka program could make women's mental health better in the postnatal period.

- The discussion reads more like a results section as there is very little discussion linking the findings of this study to other current research, rather it justifies the significance of the current study alone. I think the discussion needs to review these results to current research on this topic to highlight any similarities and differences and to show where this study adds to the body of knowledge in this field.

Response: Thank you for your suggestion. The discussion has now been re-written and the results of current research on the topic have been reviewed to highlight similarities and differences to show where this study adds to the body of knowledge in this field.

RESPONSES TO COMMENTS BY REVIEWER 3: Dr. Hyun-Joo Lim:

- The current paper provides valuable information on the positive impact of multidisciplinary perinatal care for the postpartum experiences of women in the context of Japan. Although the study is based on a small area of Japan, it has potential to be applied to wider areas nationally as well as internationally. Therefore, I recommend the publication of the study in the Journal.

The manuscript has a few typos and spelling mistakes, e.g. p12 line 224, 'as' is repeated twice and p14, L279 'structures' should be 'structured' plus others. The authors need to proofread and correct all those mistakes before resubmission.

Response: We are sorry for these typographic errors. We performed a spell check and corrected these mistakes.