Reviewer's report

Title: Immediate effects of the Fukushima nuclear power plant disaster on depressive symptoms among mothers with infants: A prefectural-wide cross-sectional study from the Fukushima Health Management Survey

Version: 3
Date: 20 October 2014

Reviewer: Lydia Zablotska

Reviewer's report:

1. Major Compulsory Revisions

I would strongly recommend seeking help from a competent epidemiologist/biostatistician and redoing the analyses. First, it is inappropriate to conduct univariate analyses using logistic regression. Instead, univariate analyses need to be conducted using methods appropriate for the data, i.e., t-tests for continuous variables that are normally distributed, non-parametric tests for continuous variables non-normally distributed, etc. Second, a proper analysis of possible confounders should be conducted. Not every variable that is significant in the univariate analysis is a confounder. They could be mediators or effect modifiers. Adjusting multivariate models for these variables could produce spurious results. Third, potential confounders that satisfy the criteria for confounding should be examined for confounding effects in the multivariate model using likelihood ratio test of Akaike information criterion (AIC). This would result in the best possible and most parsimonious model.

The second issue that needs to be resolved is the effect of selective response on the results. The authors need to compare basic characteristics of responders and non-responders to see if they are comparable. The selective response could have biased study results and the readers need to know about it.

The third issue is lack of descriptive data on the study population. The authors state that these are published in ref #11, but the manuscript in question is unpublished. Thus, to present a full picture, the authors should include a descriptive table in their manuscript.

2. Minor Essential Revisions

The main question the readers will have is how current results compare with the prevalence of depression in Japanese women from areas unaffected by the Fukushima disaster. The authors present the results from studies in Osaka (ref #14) and other areas in Japan (refs #15-17). The problem is that all of these seem to present the results for surveys conducted one month postpartum, while the current study had an average response 175 days postpartum. If there are no studies which conducted surveys 6-months postpartum, then the authors should discuss this in the Discussion section and address how the differences could have affected the results.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
No competing interests to declare.