Author’s response to reviews

Title: Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey

Authors:

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Author's response to reviews:

Editor's comment:

This paper appears to meet criteria for review for BMC Women's Health apart from one important consideration. For reasons that are not explained, women had experienced hysterectomy or who had used hormone replacement therapy, both of which are associated with menopause were excluded from the study sample. There is a risk that the findings (which are claimed to be about [all] 'postmenopausal women') would be different if these groups were included. Please could you ask the authors to redo the analyses with these groups included and, if the results are different to those presented here, to comment on what this means.

Response to Editor’s comment:

Following the suggestions from the editors and reviewers, we have re-conducted the analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly. The significant and independent correlates of depressive symptoms were also changed and we have revised the Discussion section based on our new results.

Reviewer #1’s comment #1:
This is a study that considered diabetes and depressive symptoms in postmenopausal women. A number of previous studies have established higher rates of depressive symptoms in men and women with diabetes. The authors are correct that there is less known about the association with menopause.

Unfortunately the authors focus more on diabetes and depressive symptoms and our understanding of the experience in postmenopause is not really confirmed or discussed fully in the current manuscript: there is just not enough of aan argument as to why menopause has been included and sadly, this is a missed opportunity.

Response to Reviewer #1’s comment #1:

We appreciate the comments from Reviewer 1. We have re-analyzed our data from a different perspective and not limiting our study subjects to only those who were postmenopausal.

Response to Reviewer #1’s comment #2:

The authors fail to establish how menopausal status was confirmed. What questions were asked to confirm menopause, were women on HRT or women who had a surgical menopause included? These are all factors likely to impact on the experience of depression. The only reference to menopausal status was on page 6, Line 14 "In addition, women (n=31) who still had regular menstruation at the time of the survey interview were excluded." What about women who had irregular menstruation who were likely to be perimenopausal? Perimenopause is known to be a time of hormonal swings and this increases mood swings, depressive and anxious symptoms. Not including a definition or reference to the methodology to determine menopausal status is a major flaw and disappointing given that the study was "investigating the association between diabetes and depressive symptoms in postmenopausal Taiwanese women…" It would be better to delete references to postmenopause and instead focus on age.

Response to Reviewer #1’s comment #2:

We greatly appreciate the suggestion to focus on age from Reviewer 1. We have followed Reviewer 1’s advice and re-conducted our analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates
of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly.

Reviewer #1’s comment #3:

One of the few references to the impact menopause may have on depression is on page 4 Line 33-39. The authors refer to a paper by Soares 2013 and state that …"the changes in sex hormone profile and the dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis associated with menopause may also contributed to an increased risk of depression in women." This is misleading. The issue of depression and menopause is very complex which is discussed by Soares and more likely in women who have a sudden withdrawal of hormones as in women who have had a surgical menopause. As this is one of the few references to menopause and depression the authors have missed an opportunity to explore the complexity of this issue.

Response to Reviewer #1’s comment #3:

We thank the comment by Reviewer 1. We have shifted the focus of our study from menopausal to age group.

Reviewer #1’s comment #4:

There is also little reference made to diabetes and menopause and yet there have been a number of studies that have explored this previously such as the increased risk in postmenopause due to changes in adiposity and the metabolic profile.

Response to Reviewer #1’s comment #4:

We thank the comment by Reviewer 1. We have added “perceived health status” in our new analysis and diabetes was no longer retained in the multiple logistic regression model. We have
provided discussion on the association between perceived health status and depressive symptoms in the revised manuscript.

Reviewer #1’s comment #5:

Menopause status, depression and diabetes is a complex area of investigation and is worthy of further understanding. I am not sure the authors can conclude given this was a cross-sectional study based entirely on self-report that menopause and diabetes "…can increase the risk of depressive symptoms in women." Page 13, line 4-7. It is a much more complex story than currently discussed in this paper.

Response to Reviewer #1’s comment #5:

We thank the comment by Reviewer 1. We have added “perceived health status” in our new analysis and diabetes was no longer retained in the multiple logistic regression model. We have updated our discussion on the association between perceived health status and depressive symptoms in the revised manuscript.

Reviewer #1’s comment #6:

If the authors change the focus to be about age or include more fully the discussion of how menopause was established and the complexity of its role in depression then this paper would be improved.

Response to Reviewer #1’s comment #6:

We greatly appreciate Reviewer 1’s suggestion. We have changed our focus from postmenopausal to age (women aged 50 to 65 years).
Reviewer #2’s overall comment and essential revision #1:

This paper utilizes cross-sectional data from the 2009 Taiwan National Health Interview Survey to assess associations of diabetes and depressive symptoms in postmenopausal women. It finds that, in multiple logistic regression, diabetes was associated with depressive symptoms, defined as a score of 10+ on the Chinese version of the CES-D 10 (OR 2.94). Besides, sedentary lifestyle and living alone were associated with this outcome as well, with even higher OR than diabetes (5.55 and 6.10, respectively). The authors conclude that these findings lend support to the association of depressive symptoms and diabetes in postmenopausal women, and that clinicians should be vigilant for the presence of depressive symptoms as a comorbid condition, and provide treatment to minimize its adverse consequences. In general, the paper is solid, and the response rate of the survey (84%) above-average. At the same time, the findings are not exceedingly surprising, given abundant research on the positive associations of diabetes, physical inactivity, and social isolation with depressive symptoms. This said, I recommend the following revisions:

Essential revisions

- The major drawback that the rationale for the analysis is not well enough stated. That is, the authors should provide convincing arguments that their analysis adds to the knowledge base regarding the associations of diabetes, physical inactivity, and social isolation with depressive symptoms.

Response to Reviewer #2’s overall comment and essential revision #1:

We appreciate the comment by Reviewer 2. Following the suggestions from the editors and reviewers, we have re-conducted the analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly. The significant and independent correlates of depressive symptoms were also changed and we have revised the Discussion section based on our new results.

Reviewer #2’s essential revision #2:
The authors could increase the merit of their analysis if they would look at physical activity and living with a partner as factors buffering the impact of diabetes on depressive symptoms. Thus, I recommend to add appropriate stratified analyses and/or interaction terms into the analytic scheme.

Response to Reviewer #2’s essential revision #2:

We appreciate Review 2’s suggestion. In our new analysis, we have added “perceived health status” in our explanatory variable. In our new analysis, seven explanatory variables were significantly and independently associated with depressive symptoms. We have tested various interactions between regular exercise and living arrangement and none of the interactions were significant.

Reviewer #2’s essential revision #3:

The authors should state whether "diabetes" is to denote "type 2 diabetes" in their paper, and if not, how many had type 1 diabetes, how this distinction was assessed, and if there are different results.

Response to Reviewer #2’s essential revision #3:

We thank Reviewer 2 for this comment. Although the main question on diabetes included in the NHIS does not specifically asked for the type of diabetes, there is a question on the age when first diagnosed with diabetes. Since all the respondents with diabetes had their age of diabetes diagnosis above 35 years, it is most likely that all of them were of type 2.

Reviewer #2’s minor issues #1:

Page 4, lines 13-18: … that increased age, female sex, and being separated or divorced in terms of marital status are …
Response to Reviewer #2’s minor issues #1:

We thank Reviewer 2 for the suggestion and we have revised the sentence accordingly.

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Reviewer #2’s minor issues #2:

The dichotomization of BMI as "underweight or normal weight" vs. "preobese or obese" is rather crude. The authors should state whether, on the one hand, omitting underweight respondents and, on the other hand, distinguishing preobese (25-29.9) vs. obese (30+) affects their results.

Response to Reviewer #2’s minor issues #2:

We did perform our analysis with BMI with four categories but since none of the categories was significantly associated with depression, we had collapsed them into two broad categories. However, following Reviewer 2’s suggestion, we retained the four categories in the revised version of the manuscript.

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Reviewer #2’s minor issues #3:

The regression analysis underlying table 2 is multiple (more than one regressor), not multivariate (which would be more than one regressand).

Response to Reviewer #2’s minor issues #3:

We have changed our wording in the text and in the title of Table 2 accordingly. Thank you.
Reviewer #3’s overall comment and comment #1:

In the manuscript "Association between diabetes and depressive symptoms in postmenopausal women: findings from the 2009 Taiwan National Health Interview Survey" the authors seek to determine the association between diabetes and depressive symptomatology in postmenopausal Taiwanese women in a population-based sample. Both conditions are relevant public health issues. However, there is no lack of publications in this respect. Thus, although methodologically sound, I had a major concern: the study results do not seem to provide sufficiently novel information.

Methods: How do you define "regular menstruation" (page 6, line 17).

Response to Reviewer #3’s overall comment and comment #1:

This study is a secondary data analysis based on the NHIS dataset. Thus, we are limited by response in the closed-ended questions used in the survey. The definition of regularity is defined by the respondents themselves.

Reviewer #3’s comment #2:

Methods: The information about the informed consent from study participants is confusing (page 6, line 30).

Response to Reviewer #3’s, comment #2:

We have changed the sentence to “Since the datafile contain only de-identified secondary data, the institutional review board waived the requirement for informed consent.”

Reviewer #3’s comment #3:

Response to Reviewer #3’s, comment #3:

We have added the Cronbach’s alpha and test-retest correlation coefficients to the text related to Reference #24 and we have also added the findings of a two-factor model to the text related to Reference #26.

Reviewer #3’s comment #4:

Methods: BMI, smoking, alcohol and sport are not socio-demographic factors (page 7, lines 33-40).

Response to Reviewer #3’s, comment #4:

We have revised our manuscript and list the 20 independent variables evaluated in our study.

Reviewer #3’s comment #5:

Methods: How did you define marital status? And what is the difference between married and living together? (page 7, last line).

Response to Reviewer #3’s, comment #5:

The response categories for the question on marital status contain only 6 categories: (1) never married, (2) married and living together [at least 6 months in one year], (3) married but not living together, (3) separated, (4) divorced, (5) widowed. No distinction is being made between married and living together but not married.
Reviewer #3’s comment #6:

Methods: Which method for choosing confounders was used? Which confounders were taken into consideration? (page 8, line 39)

Response to Reviewer #3’s, comment #6:

The independent variables evaluated in this study was based on both their potential association with depressive symptoms and whether they are available in our dataset.

Reviewer #3’s comment #7:

Methods: How did you weight the data? Was it age-standardized and only for women? (page 8, line 39)

Response to Reviewer #3’s, comment #7:

The data was weighted by age and sex using the weights included in the NHIS dataset. We have revised the sentence to indicate that the data were weighted by age and sex.

Reviewer #3’s comment #8:

Results: Table 1 should be a description of the study population. There is no need for analysis in that table.

Response to Reviewer #3’s, comment #8:
In addition to a description of the study population, Table 1 also shows the results of the univariate logistic regression analyser. We hope Reviewer 3 agrees with our data presentation.

Reviewer #3’s comment #9:

Results: In the title of tables 1 and 2 you mentioned "women who had not used hormonal replacement therapy". However in the "response to reviewers" you mentioned that those were all women "without excluding women who … had used hormone replacement therapy".

Response to Reviewer #3’s, comment #9:

We thank the comment by Reviewer 3. Following the suggestions from the editors and reviewers, we have re-conducted the analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly.

Reviewer #3’s comment #10:

Results: How was done the adjustment for Table 2: significant variables or all variables in table 1? (page 9, line 23). Why are there different numbers in table 1 and table 2 (for example, 39 not living alone are 79.1% in table 1 and 79.6% in table 2).

Response to Reviewer #3’s, comment #10:

It was a typo in our previous version of the manuscript. It should have been 79.6%.
Reviewer #3’s comment #11:

Discussion: How sure are you that "diabetes" in your population reflects only diabetes type 2, or could it also be diabetes type 1? (page 12, line 51)

Response to Reviewer #3’s, comment #11:

We thank Reviewer 3 for this comment. Although the main question on diabetes included in the NHIS does not specifically asked for the type of diabetes, there is a question on the age when first diagnosed with diabetes. Since all the respondents with diabetes had their age of diabetes diagnosis above 35 years, it is most likely that all of them were of type 2. In our new analysis, perceived health status has replaced diabetes in our multiple regression analysis.

Reviewer #4’s comment #1:

Overall: The authors examined the cross sectional association of diabetes (self-reported) and depressive symptoms (Chinese CES-D 10) in Taiwanese postmenopausal women by secondary analysis of a population dataset (n=553). Diabetes, a sedentary lifestyle and living alone were associated with depressive symptoms, supporting the hypothesis that diabetes and depressive symptoms are related in postmenopausal Taiwanese women.

Introduction: The introduction is written very clearly. The literature review is careful.

Response to Reviewer #4’s, comment #1:

We greatly appreciate the positive comment from Reviewer 4.

Reviewer #4’s comment #2:
Methods: This section is well written. Although the psychometric properties of the CES-D are published, I would include a sentence summarizing these. The statistical analysis is well described. Self-report of diabetes is a weak measure but this is acknowledged in the limitations section.

Response to Reviewer #4’s, comment #2:

We greatly appreciate the positive comment from Reviewer 4. We have added the Cronbach’s alpha and test-retest correlation coefficients to the text related to Reference #24 and we have also added the findings of a two-factor model to the text related to Reference #26.

Reviewer #4’s comment #3:

Results: These are very brief (one paragraph) but clear. The tables are clear.

Discussion: The discussion is good. All key findings are discussed in a coherent way. I like the discussion of the bi-directionality of diabetes and depression. Leading on from this, other relevant dimensions that are not discussed in detail are the bi-relationship between duration and severity of depressive symptoms and diabetes. Also, what is the relationship between diabetes and depression (rather than elevated depressive symptoms). Give that not everyone with depressive symptoms will develop depression, would this not be more clinically meaningful. A sentence about this would further strengthen this good discussion.

Response to Reviewer #4’s, comment #3:

Following the suggestions from the editors and reviewers, we have re-conducted the analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly. The significant and independent correlates of depressive symptoms were also changed and we have revised the Discussion section based on our new results.
Reviewer #5’s comment #1:

This is an interesting study investigating the relationship between diabetes and depression in Taiwanese postmenopausal women, although my biggest concern is in the very usage of the term "postmenopausal". According to the authors, "postmenopausal women" were selected from female residents aged 50-65y excluding those who had regular periods. However, there should be many women in their late 40's and early 50's who still has menstruation not necessarily regular, who are regarded to be in "menopausal transition" or "perimenopause". As women's risk of suffering from depression or depressive symptoms are known to significantly increase in menopausal transition rather than in the postmenopausal period, menopausal status should be incorporated in the multivariate logistic regression analysis, or, at least, the title of the paper should be changed to "Association between ... in women aged 50-65y" etc. In the latter case, those who had been excluded from the study because they had regular menses should be included.

Response to Reviewer #5’s comment #1:

Following the suggestions from the editors and reviewers, we have re-conducted the analysis without limiting our study subjects to only those who were postmenopausal. We have also changed the title of our manuscript to “Correlates of depressive symptoms in late middle-aged Taiwanese women: Findings from the 2009 Taiwan National Health Interview Survey” accordingly. The significant and independent correlates of depressive symptoms were also changed and we have revised the Discussion section based on our new results.