Author's response to reviews

Title: Assessing the Effects of an Educational Program for the Prevention of Work-related Musculoskeletal Disorders among School Teachers.

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Author's response to reviews: see over
Dear Victorino Silvestre,

We wish to thank the reviewers and editors for their constructive criticism and suggestions concerning our re-submission to BMC Public Health (Manuscript ID:1413395540132422). Your comments have greatly contributed to our paper. According to the criticisms and suggestions, we have carefully revised the manuscript according to the point-by-point responses below and highlighted the text revisions in green.

1. COMMENTS

The authors made an effort to address revisions requested. However, there are still outstanding points that need to be sorted out.

MAJOR REVISIONS

- Multiple correspondence/factor analysis still not explained adequately (content of axes, etc.)

  Response: This is a limitation of correspondence analysis. The content of axes has no special meaning and is defined according to the distribution of points in the figure. Actually, the axes of correspondence analysis are very difficult to define. For the factor loading plot of correspondence analysis, one needs to observe the horizontal distance of two points (the group and the answer). The nearer the distance between two points, the closer the relationship between them.

- Did the authors consider to examine the potential clustering effect of schools?

  Response: This is a limitation of our study. The participants were cluster sampled from four schools, and contamination existed within each school. We did not examine the potential clustering effect of schools and will focus on this problem in further studies.
- Figure 3: The prevalence of wrist, neck, shoulder, and back pain have all a similar trend. Fairly stable in the interval 0-6 months, marked decrease after 6 months. I do not see significant differences.

Response: We performed chi-square tests to compare the prevalence of WMSDs before and after intervention. The prevalence of neck, shoulder, upper back, and lower back pain were significant. Then we performed the trend chi-square test to examine the trend of the prevalence change. The prevalence of neck, shoulder, upper back, lower back pain was markedly decreased after 12 months.

- Page 14, rows 297-299, "Our study was pre/post designed without a control.... not to be adequately examined". The design of the present study does not prevent from controlling for potential confounders.

Response: We agree that there were problems with the original text. Actually, our study is a self-controlled study, the potential confounders cannot be effectively avoided. Due to the lack of information on gender, confounding bias was not effectively controlled. The sentence has been improved (Page 14, Line 294-296).

- From response to reviewers. Were any confounders and/or effect modifiers taken into account?
Response: Yes. We adopted the Fisher’s exact test to adjust the results of the chi-square test. The Fisher exact test has nothing to do with confounder controlling.

Response: This is a limitation on our study. The Fisher exact test is an effect adjustment for account. Due to the lack of information on gender, confounding bias was not effectively controlled.

- Page 7, rows 15, "Lectures and ergonomic training .... by an experienced epidemiologist". An epidemiologist is not the ideal figure to teach health education. Health educators are, or alternatively occupational health physicians or physiotherapists would have more appropriate background.

Response: The epidemiologist also had a wealth of experience in health education. Actually, there are few specialized health educators in Shantou. We agree that there were problems with the
original text. So we rephrased “epidemiologist” to “health educator”. The sentence has been improved (Page 7, Line 148-149).

- From response to reviewers: "We now state an experienced epidemiologist provided the occupational health education lectures and on-site ergonomics training”. Same as above.

  **Response:** The epidemiologist also had a wealth of experience in health education. Actually, there are few specialized health educators in Shantou. We agree that there were problems with the original text. So we rephrased “epidemiologist” to “health educator”. The sentence has been improved (Page 7, Line 148-149).

- REFEREE comment: How was the effect of the intervention measured? Was a scale used, if so, which one? Comment not addressed appropriately. This comment is not pertaining to type analysis performed.

  **Response:** The effect of the intervention was measured by the awareness, attitude and health behavior and self-reported prevalence changes of WMSDs. We have no evaluation scale for these criteria. If you have one, please recommend it to us in order to further our study. Thank you!

- Line 90: “Each participant received a gift for participation in the study.” is it ethically accepted

  **Response:** This research was approved by the Ethics Committee of the Medical College of Shantou University (Page 4, Line 81). This is not a convincing answer. Although ethical approval was granted, the point to be discussed here is the significance and acceptability of giving incentives to teachers to maximize health education they are receiving

  **Response:** We agree that there were problems. We followed your suggestion in MINOR REVISIONS. The sentence has been improved (Page 5, Line 94).

- Include a table on the demographics of the sample (gender, age, prevalence and severity of pain).

  **Response:** Our study is a longitudinal observational study. The observation period was from June 20, 2010 to August 21, 2011. Therefore, gender and age were not included. Prevalence is shown in Table 3. We did not separately collect information on the severity of pain.

  The authors did not address appropriately the comment. The importance of including sex and age
as covariates has not much to do with the (relatively short) length of the study.

Response: We agree with the critical comments. This is a limitation of our study. Due to the lack of information on gender, confounding bias without effective control. This study is a self-controlled study, so we did not separately collect information on age. We will focus on these factors in further studies.

MINOR REVISIONS

- page 5, row 97: “Each participant received a gift for participation in the study”, please change “gift” with “incentive”;

Response: We followed the suggestions. The sentence has been improved (Page 5, Line 94).

- Methods, page 4, row 82-86, rephrase the sentence as follows: “By using a method of random cluster sampling, four schools were selected out of total 1055 schools in Shantou”; change the following sentence as follows: “… then the first four schools were chosen as follow: two primary schools; one junior secondary school and one senior secondary school”

Response: We followed the suggestions. The sentence has been improved (Page 4, Line 81-84).

- please change the sub-title “instrumentation” with “Questionnaires” and move this whole paragraph after the section ”procedure”.

Response: We followed the suggestions. The paragraph has been improved (Page 5-6, Line 95-116).

- page 7, rows 132-135: rename the data collections as T0, T1, T2 respectively;

Response: We followed the suggestions. The sentence has been improved (Page 6, Line 112-114). The figure 1 improved corresponding.

- page 8, row 172: change to “The frequency of correct answer TO … “, then list all questions in bullet points, as it is clearer to visualize for the reader.
Response: We followed the suggestions. The sentence has been improved (Page 8-10, Line 170-203).

- Page 9, row 178 “… indicate that awareness rate of WMSDs related knowledge have improved, the effect is sustaining. The frequency of correct answers….”, remove “ the effect is sustaining” and change the whole sentence to “… indicating that awareness rate of WMSD related knowledge have improved. The frequency of correct answers….”.

Response: We followed the suggestions. The sentence has been improved (Page 9, Line 176).

- page 9, row 178, change “Indicate” with “indicating”

Response: We followed the suggestions. The sentence has been improved (Page 9, Line 176).

- Page 9, row 180: change “answers of….” with “answers to…”

Response: We followed the suggestions. The sentence has been improved (Page 9, Line 177).

- page 11, row 223: change “Chinese teachers comprise a large occupational group …” to “Chinese teachers comprise a relevant occupational group ….”

Response: We followed the suggestions. The sentence has been improved (Page 11, Line 221).

- page 11, rows 225-228: “Prior research shows that WMSD risk factors….”. please add that this evidence comes from China

Response: We followed the suggestions. The reference has been added (Page 11, Line 226).

- Page 13, row 276: “waist” maybe should be ”wrist”?

Response: We followed the suggestions. We agree that there was a problem in origin text. So we rephrased “waist” to “lower back”. The sentence has been improved (Page 13, Line 279).

- Page 14, rows 296-297, "However, this study ....this is just an observational study". Please rephrase as follows: "However, the design of the present study could be improved".
Response: We followed the suggestions. The sentence has been improved (Page 14, Line 294).

- Page 14, rows 301-303: “With the development of….. methods to evaluate the WMSDs”. Please rephrase as follows: “With the development of WMSD-related studies, new methods to evaluate the WSMDs are required”.

Response: We followed the suggestions. The sentence has been improved (Page 14, Line 299-300).

- Page 14, rows 303-304: “Further high quality studies….. interventions in practice”. The present study is longitudinal, although it just has three observations (T0, T1, T2). Improvements could also be by increasing the number of observation over time, or extending the length of the study. This would strengthen the design.

Response: We followed the suggestions. The sentence has been improved (Page 14, Line 301-302).

- Page 15, rows 307-308, “We demonstrated the effectiveness…. Musculoskeletal symptoms in teachers”, change to “This study provided some evidence on the effectiveness of a ….”

Response: We followed the suggestions. The sentence has been improved (Page 15, Line 306-307).

- Page 15, rows 308-309: “With increasing pressure on teachers, it is critical that they become aware of the risk…”, change to “With increasing work pressure, it is critical that teachers become more aware of the risk of ….”

Response: We followed the suggestions. The sentence has been improved (Page 15, Line 307-309).

Additional revise by authors:

In addition to the above revise, we improved some sentences and highlighted the text revisions in green.
With the above-mentioned revisions, we believe that the newly prepared manuscript is in accordance with the requirements of BMC Public Health. We hope that these revisions are satisfactory and that the revised version will be acceptable.

Yours sincerely

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