Reviewer's report

Title: Evaluation on Intervention Effects of Work-related Musculoskeletal Disorders among School Teachers

Version: 2 Date: 14 July 2014

Reviewer: sjan-mari van niekerk

Reviewer's report:

Dear Authors

This is a good attempt at an ergonomics intervention to prevent WMSD’s amongst teachers in China. Intervention studies are few and very needed in this field.

Unfortunately the methodology of this study lacks information in regards to how and which type of pain data was collected and the effect of recall bias. This makes the interpretation of the results very difficult. The discussion lacks depth and understanding, which might sprout out of the gaps in the methodology.

Major Compulsory Revisions

Title
Reword:
Assessing the effects of an ergonomics intervention on work-related musculoskeletal disorders among Chinese school teachers.

Background
Specifically mention the prevalence study as well as the result of the study by Yue P, et al (2012) as well as Chong et al (2010) and say that it was done in China. This will set the seen for the current intervention study, which is in the same population.

Line 49 – 57: Need references for all the statements in the first paragraph.
Line 62-63: Reference “Furthermore, musculoskeletal disorders are also one reason…”
Line 63-64: Reference “Musculoskeletal complaints, especially of the lower back, neck and shoulders…”
Line 68: Change to “program aimed at the prevention of WMSDs was comparable…”
Line 70: Provide the references for the “large published literature”
Line 72: Change to “While there is a large published literature in relation to teachers and WMSDs going back 10 years or more, little has been published on the prevalence of WMSDs, including intervention studies, aimed at the teacher
population of China.”

Methods
Line 79: Rephrase “Five hundred teachers were randomly recruited from schools in Shantou City, Guangdong Province between June….“

How was the school selected? Are these the only school in the area?

Line 82: what are “frontline teachers”?

Example of the questions included in the modified questionnaire needs to be added in table form for clarity. How did it differ from the DMQ and the NMQ? Why not just use one of these standardized questionnaires?

How was the effect of the intervention measured? Was a scaled used, if so, which one?

Line 103: “thirty teacher from another school…” was this part of the previous prevalence study? Please clarify in the text. Provide an ICC or CMC value for the test-retest reliability and interrater agreement, as well as the specificity and sensitivity of the content validity of the questionnaire.

Interventions
Line 129: Rephrase: “The multifaceted intervention comprised of two aspects:…”

Was the intensity, severity and duration of the pain measured and taken into account?

What is the recall period for pain? Was it pain at the time of the data collection? Or during the past 6 months? Or 12 months? This is not clear?

Provide the specific recommendations that were given in regards to changing the workstation?

What did the ergonomics training entail? Were physical modifications made to the workstations, either by the investigator or the participant? Was this recorded? Did the modification influence the symptoms?

What took 8 weeks? Were there weekly sessions? Thus 8 sessions per school? What did each session comprise of? Were there individual sessions to change workstations?

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

Table 1: It would be useful to include the questionnaire on which Table 1 is based, in the methods sections so that the answers or options can be seen. The table contents needs to be edited by a native English speaking editor.
Table 2: This table does not provide enough information on the effect of the intervention. Were there any new cases of pain reported? Was there a decrease in the intensity/severity of pain between the baseline and 6 months and 12 months post intervention. Or does the results indicate that for instance, somebody had neck pain (of any degree) at baseline and then no pain at 6 months post intervention? What if that person then developed neck pain again during the next six months? Was the number of incidences of pain recorded and taken into account?

Discussion

The discussion is poorly written and needs substantial editing.

The understanding and interpretation of the results is weak. This section requires a rewrite, which include justification of the results.

Line 195: Provide reference “Compared with the developed countries, Chinese teachers occupy a larger proportion of occupational..”

Line 197: Edited so that sentence does not start with Because…

Line 201: The meaning of this sentence if not clear..

The section on Behavioral and attitude changes does not make sense. There is reference to other studies, but it’s not coherent. The relevance to the current study results is not obvious. Many statements are made without reference.

What does Annual prevalence refer to? Is that pain experienced during the entire year? There is no validity in pain recall over an entire year. Also, when the pain questionnaire was administered at 12 months post intervention, did it refer to pain during the entire year, or just the 6 months post the previous measurement which happened at 6 months post intervention? This does not make sense and does not provide useful information. If you answered yes, to neck pain, which was experienced at the beginning of the data collection period (thus before the first 6 months questionnaire), would you then answer yes to experiencing neck pain at both the 6 months follow-up and the 12 month follow-up? The procedure is unclear.

This section does not make sense “A one-year study showed that there were significance changes in lower extremities, wrist and finger in manufacturing workers after training [27]. Difference from our study is characteristics of career. “ What was different, what is the significance of this? What are the possible reasons for the difference?

Conclusion

There is no mention of improving the work efficiency in teachers in the aim or intervention method of this study but yet it is concluded that the current intervention achieved this.
Minor Essential revisions
All numbers below 10 should be written out.

**Level of interest:** An article of importance in its field

**Quality of written English:** Not suitable for publication unless extensively edited

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