Reviewer's report

Title: Eye exercises: their impact on myopia and ocular fatigue in Chinese urban students

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Reviewer: Kathryn Rose

Reviewer's report:

1. The authors have examined the role of eye exercises as prescribed in Chinese schools for their effects on myopic refractive error and on the symptoms generated by convergence insufficiency (CI). There are some major issues with this study and its presentation. The first is the aim of the study is not clear. It is as though the authors have collected 3 disparate sets of data and tried to combine them in the one paper without thought to how they might be related, if at all. For example the utility of the CISS questionnaire in relation to myopia is not explained by the authors. It is not ideal that such unrelated issues (myopia and CI) are presented within the one paper as this has the consequence of making the conclusions drawn by the authors complex and confused.

2. In relation to prevention of myopia, there would be interest in this topic but the data presented here is insufficient for clear and unambiguous conclusions to be drawn and in fact a very different study design would be needed to answer this question, as the authors have noted in their discussion. However, in the face of no robust association found between eye exercises and myopia in this study it is unclear how the authors could conclude that a randomized control trial of eye exercises for the prevention of myopia is warranted. This statement needs to be withdrawn.

3. A large proportion of the references used by the authors could not be accessed by the reviewer. In some cases other more accessible references could be used including a recent Cochrane review on acupuncture and myopia. Where key papers are not able to be accessed electronically and/or are only available in Chinese, the authors should make available translations of these papers to the reviewers otherwise it is difficult to make a judgment on the suitability of the references used.

Minor Essential Revisions

4. The title of the paper implies that the data analysis is examining cases of myopia versus non-myopia, however all the analysis is conducted on spherical equivalent (SE) refraction, so to be more precise the title should read “Eye exercises: their impact on refractive error and ocular fatigue in Chinese students.

5. It is noted that the mean SE is quite myopic (-1.60D) which seems unusual in a group this age, what was the prevalence of myopia in this sample?

6. The references list needs to be checked carefully-beyond reference 30 the numbers have become out of order.
Discretionary Revisions

7. The age range of the sample in this study is wide and at this critical age the sample is likely to demonstrate both age-related changes in the prevalence of myopia and in attitudes to doing eye exercises. This most obviously occurs in the univariate analysis of the relationship between serious attitude to eye exercises and lower odds of myopia that disappears on multivariate analysis controlling for a variety of factors including age. This is acknowledged in the second paragraph of the discussion. However, it would be worthwhile knowing the specific impact of age on all the parameters measured.

8. It is difficult to determine whether the literature cited in paragraph 6 of the discussion to describe the possible underlying mechanisms of the effects of doing eye exercises is reliable as the majority of references are unavailable. As such the discussion of this argument should be limited, particularly as it does not directly address the substance of this study.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests