Author's response to reviews

Title: Hyperopia: a meta-analysis of prevalence and a review of associated factors among school-aged children

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Version: 6 Date: 1 November 2014

Author's response to reviews: see over
Author’s response to reviews

Title: Hyperopia: a meta-analysis of prevalence and a review of associated factors among school-aged children (MS: 1740598651109263)

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Version: 2 Date: 29 October 2014

Author’s response to reviews: see over
Reviewer's report

Title: Hyperopia: a meta-analysis of prevalence and a review of associated factors among school-aged children

Version: 5 Date: 27 September 2014

Reviewer: Jenny M Ip

Reviewer's report:

Minor Essential revisions

Abstract

1. page 3 “..refine concept of hyperopic refractive error..” Do the authors wish to convey that there are other associations with hyperopia such as accommodative and binocular functions, rather than seek another definition of hyperopia?

This sentence has been modified.

Background

2. page 4 “..Thus, children with hyperopia may present symptoms related to asthenopia..” Please clarify the degree of hyperopia as the symptoms mentioned, and the risk of amblyopia, are usually related to higher levels of hyperopia. Implying that these occur at all levels of hyperopia would be misleading and overstate the impact of hyperopic refractive error. Please note that grammatical corrections are required for this statement.

The first paragraph of the Background has been modified.

3. page 4 “Hyperopic children may present anisometropia if asymmetry occurs..” As anisometropia of any degree is not uncommon and usually well tolerated, it would be important to clarify that anisometropia is significant for visual development with higher dioptre differences. The mention of emmetropisation in this context appears out of place.

The sentence has been modified and the mention of emmetropisation has been removed.

4. page 4 “Although there are several studies on hyperopia, so far..” would flow more smoothly as a new paragraph.

This sentence now starts on a new paragraph as suggested by the reviewer.
Methods

5. “..07 papers were included from selected articles” – this seems to imply only 7 papers were included in the analyses, but 40 was stated elsewhere (in figure 1), and then later it was reported 11 studies were included in the meta-analysis, weren’t all papers included in the meta-analyses?

The final sentence of the “systematic review” item of the Methods section (pg.5) has been modified to indicate that 07 articles were included following the review of the bibliographical references of the selected articles.

Page 5, 1st paragraph: there were 21 studies on hyperopia in specific ages and not 22. This mistake has been corrected.

The “Meta-analysis” item of the Methods section has been improved to explain the inclusion or exclusion of the articles used in the meta-analysis

Results

6. Page 8. “I2 indicates homogeneity among the studies..” The I2 was 0% for ages 10 and 12 and 13 yrs, but the hyperopia prevalence at these ages in figure 2 look fairly homogenous. Please explain this discrepancy

The discrepancy noted by the reviewer has been rectified:

- In the 2nd paragraph of the “Meta-Analysis” the name of the test was corrected. (heterogeneity test)

- In the 4th paragraph of the “Hyperopia prevalence by age in children” item in the Results section (pg.7), the following sentence has been removed: “The Forest Plot shows an increase in homogeneity among the studies as age increases, especially with effect from age 9”.

Conclusion

7. “More studies are needed to refine the concept of hyperopic refractive error with evaluation of accommodative..” This last statement appears inconsistent with the flow of the manuscript. As there was no mention of performing any measures of accommodation or testing of binocularity within the paper, to reach this conclusion seems out of place. Additionally, a number of researchers, including Atkinson et al (Atkinson J, Anker S, Nardini M et al. Infant vision screening predicts failures on motor and cognitive tests up to school age. Strabismus 2002 vol 10, no 3. 187 – 198) have undertaken important studies on developmental aspects of children with refractive error, and these studies should be included if there is to be a detailed discussion on cognitive development.
The last sentence of the final paragraph of the Conclusion section (pg.16) has been modified with the aim of correcting the inconsistencies indicated by the reviewer.

Figure 1

8. the numbers do not add up for the last division of the tree diagram (77 papers, after excluding 44 full text articles but leaving 40 studies)

44 out of a total of 77 papers were excluded. 7 studies identified in the bibliographical references of the studies selected were then added, resulting in a final total of 40 studies. (last sentence of the “Systematic Review” item of the Methods section; pg.6)

Figure 2

9. please see comment 6

The heterogeneity test p-value was added in the graph. It shows a p-value greater than 0.1 in all specific ages (indicating homogeneity among the studies).

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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
Reviewer's report

Title: Hyperopia: a meta-analysis of prevalence and a review of associated factors among school-aged children

Version: 5 Date: 22 September 2014

Reviewer: Brendan Barrett

Reviewer’s report:

Abstract, 9th line: Please replace "effect summary" with "prevalence"

Done.

In the "Gender and hyperopia in children" section of the results (4th line): Please add "however" after "According to some studies... ", as without this word, this sentence appears to contradict the first sentence in this section

Done.

Conclusion in main text: Reword second sentence as follows: "Considering that more myopic populations or those with earlier onset of myopia may be populations with earlier OR GREATER reductions in hyperopia, in view of the complementarity of these phenomena, the causes of THE decrease in hyperopia PREVALENCE may be common to those explaining the increase in myopia WITH age. [changes are in CAPITAL letters].

Done.