Author's response to reviews

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

Authors:

Victor D Castagno VDC (vicastagno@hotmail.com)
Anaclaudia G Fassa AGF (anaclaudia.fassa@gmail.com)
Maria Laura V Carret MLVC (mycarret@hotmail.com)
Manuel Augusto P Vilela MAPV (mapvilela@gmail.com)
Rodrigo D Meucci RDM (rodrigodalke@gmail.com)

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Author's response to reviews:

Reviewer's report 1:

Major Compulsory Revisions

1. Abstract: the objective of the study has been made clearer in the Background. The methodology has been completed including the study of meta-analysis and the conclusion was improved and expanded.
2. Reference [1] has been added, the last paragraph of which indicates the importance of accommodative and binocular dysfunctions in sequelae.
3. The article mentions that low hyperopia prevalence is partially explained by ethnicity. The explanation in relation to darker irises has been removed from the text since we agree with the reviewer’s argument.
4. Table 1 & 2 have been combined into one table (Table 1) and the number of eyes examined has been included (by eye or by child) and which examination was performed (cycloplegic autorefraction or cycloplegic retinoscopy). Table 3 was renumbered as Table 2.


Minor Essential Revisions

5. Meta-analysis of hyperopia prevalence by specific age has been undertaken, resulting in a comprehensive modification of the results description. Figure 2 was included, referring to Foster Plot of meta-analysis.

Minor Comments not for publication

Comments 7-21 have been modified in line with the reviewer’s suggestion.

22. This information (among adults) was excluded from results. We recovered this information in discussion to support the association between socio-economic status and axial length, once do not exist which investigate this association in children.

Comments 23-25 have been modified in line with the reviewer’s suggestion.

Discretionary Revisions

Our review study shows hyperopia prevalence and associated factors in different populations, but does not present results for the discussion of characteristics related to clinical impact.

With regard to public health, some topics have been approached in the discussion, such as:

1) The causes leading to hyperopia are unknown. The factors studied do not explain the causal chain of hyperopia and more results are needed.

2) We emphasize that the studies reviewed do not cover characteristics regarding the clinical relevance of hyperopia. Further studies should be conducted in this direction.

Reviewer’s report 2:

Major Comments

1. The first version of this systematic review included hyperopia, myopia and astigmatism. However, during the submission process a systematic review about myopia was published (Pan C-W, Ramamurthy D & Saw S-M. Worldwide prevalence and risk factors for myopia. Ophthalmic Physiol Opt 2012, 32, 3-16). For this reason we decided to remove the part relating to myopia and astigmatism from our review.

Hyperopia and myopia are complementary events, but they do not have causal association. In most cases the complementarity of these events is due to the anatomical characteristics of the eye typical in certain ethnic groups. The causal factor analyzed is therefore ethnicity. As a parallel it can be stated that populations which on average are tall have lower prevalence of short individuals, nevertheless one of these events does not cause the other, they are complementary and what needs to be examined are the causes.
2. Undoubtedly only studies with the same cut-off points are comparable. Although we have described all the studies, the assessment of hyperopia prevalence was performed on those studies using the +2.00D cut-off point (moderate hyperopia).

3. Presentation:

a. Table 1 & 2 have been combined into one table (Table 1) and the number of eyes examined has been included (by eye or by child) and which examination was performed (cycloplegic autorefraction or cycloplegic retinoscopy). Table 3 was renumbered as Table 2.


b. Following the reviewer’s suggestion that it would be interesting to present a figure on age versus prevalence, we undertook a meta-analysis of hyperopia by specific age, using those studies that had a response rate of 80% or more and a hyperopia cut-off point of +2.00D or more (moderate hyperopia). Figure 2 was included, referring to Foster Plot of meta-analysis.

We opted not to present a figure on the relationship between age and severe hyperopia because the studies do not provide information about severe hyperopia by specific age.

c. Several aspects of Table 3 have been condensed, taking the reviewer’s suggestions into consideration and Table 3 was renumbered as Table 2.

d. In accordance with the reviewer’s suggestion, the results relating to ethnicity have been abridged.

Specific comments

- The information requested has been included in Table 1.
- The cycloplegic retinoscopy/autorefraction examination, as an inclusion criteria of the study, was performed in all the studies and in all ages.

By mistake the Methods section stated that the search for articles was limited to those published in English. The search made no restriction regarding language and this has been corrected in the Methods section.
- Modifications have been made in relation to “Gombak district”. This had been duplicated.

- Meta-analysis of hyperopia prevalence by specific age has been undertaken, resulting in a comprehensive modification of the results description.

- We have changed the title of Figure 1 to: “papers cited in selected articles” and we have rectified the sentence at the end of the Methods section in keeping with the reviewer’s suggestion.

- All other typing errors have been corrected.

Note: Another author has been included (Rodrigo Dalki Meucci), who worked on the statistical analysis (meta-analysis) and assisted with the final revision of the article.