Author's response to reviews

Title: The screening of visual impairment among preschool children in an urban population in Malaysia; the Kuching Pediatric Eye Study: a cross sectional study.

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Author's response to reviews: see over
To,

The Editor in-charge,
BMC Ophthalmology 13th February 2013

Dear Sir / Madam,

Point-by-point response for MS: 9313 4834 0860 9199
The screening of visual impairment among preschool children in an urban population in Malaysia; the Kuching Pediatric Eye Study: a cross sectional study.

Reviewer: Josephine O Owoeye

Comment #1:

There is a flaw in the way the prevalence is calculated. The authors could calculate the prevalence by saying 20 children failed screening/400 screened children (equals 5%), but not 16/400 since the 16 children actually got a full evaluation and not all 400 children had the full evaluation. 5% is a significant burden, but the stats have to show it…

Response:

We agree with the reviewer.

The prevalence of visual impairment was 5% (95% CI = 3.3, 7.6).

Changes made in the manuscript:


b. Result, Demography, Paragraph 2, Line 1.

c. Discussion, Paragraph 1, Line 1.
Comment #2:

Same goes for the strabismus, 0.25% came from 1/400, but only 20 children were examined. Better to state as 1/20 (one strabismus seen in the 20 children examined). In the Baltimore Pediatric Eye Disease Study referenced, we examined all the children.

Response:

We agree with the reviewer.

Changes made in the manuscript:

Result, Refractive errors, Line 2:

The figure 0.25% is deleted; replace with the sentence: “Only one child had exotropia.”

Discussion, Paragraph 3, Line 1:

“Strabismus was found in one of the 20 children who did not pass the screening tests.”
Comment #3:

It is now harder to compare this to other prevalence studies because of the statistics.

Response:

We agree with the reviewer.

The above will be part of the limitations of this study.

Changes made in the manuscript:

Limitation, Paragraph 3, Line 2-4:

The following sentence added:

“In other prevalence studies, all children were examined [3,10,12,13,16]. It is therefore difficult to compare our findings because of the statistics.”
Comment #4:

What was the definition of significant refractive error, granted astigmatism was common in the 20 children examined, but there was no mention of a predetermined amount of refractive error that is significant or not in this study. For instance, astigmatism of 2D or 3D could be significant and any child beyond this fails the evaluation.

Response:

We agree with the reviewer.

Changes made in the manuscript:

Material and methods, Referral and further evaluation, Line 5-7:

The following sentence added:

“Significant refractive error were defined as hyperopia >3.00 diopters (D), myopia >1.00 D or astigmatism >1.50 D in either eye, or anisometropia >2.00 D [8].”
Comment #5:

Visual impairment more common in boys than girls, it would be nice to see the odds and to determine if the difference is statistically significant – to say if boys are truly at more risk of visual impairment, meaning we may have to pay more attention to boys in this population.

Response:

Visual impairment was common among boys \((n = 13, 65\%)\) compared to girls \((n = 7, 35\%)\). However, the difference is not statistically significant \((p = 0.142)\)

Changes made in the manuscript:

Result, Demography, Paragraph 2, Line 4-6.

The following sentences added:

“Visual impairment was common among boys \((n = 13, 65\%)\) compared to girls \((n = 7, 35\%)\). However, the difference is not statistically significant \((p = 0.142)\).”
Comment #6:

Also, children in the Bidayuh ethnic group had higher impairment after the full evaluation, what are the odds and is it statistically significant?

Response:

Children from the Bidayuh ethnic group had higher number of visual impairment (n = 8) compared other ethnic groups.

However, the difference is not statistically significant (p=0.171).

Changes made in the manuscript:

Result, Demography, Paragraph 2, Line 89

The following sentence added:

“(statistically not significant, p=0.171).”
Comment #7:

The authors could discuss the testability of screening data a little bit more – this is good information because it shows that many of the children in this population are testable.

Response:

We agree with the reviewer.

Changes made in the manuscript:

Discussion, Paragraph 4 added:

“The rate of testability increases with age [18]. As our sample consisted of older preschool children (aged 4 to 6 years), all 400 children in our study were testable for distant visual acuity and stereopsis. This is comparable with the findings of other studies [18,19]. This finding will provide a basis for future research to the evaluation of the effectiveness of these (Sheridan Gardiner Test Complete (Keeler, UK) and Langs stereotest) screening tests to detect amblyopia in our population.”
**Comment #8:**

i. Instead of using the term “amblyopia,” the authors can use “decreased vision,” because the children did not have a re-test with their refractive error correction to see if their vision got better.

ii. And, what was the definition of amblyopia?

**Response:**

We agree with the reviewer.

i. We used the term “visual impairment” to describe those who failed the screening tests.

**Changes made in the manuscript:**

**Result, Refractive error, Last sentence:**

The last sentence is deleted:

“The last sentence is added:

“Uncorrected refractive errors were the most common cause of **amblyopia** in our study group.”

ii. Amblyopia was defined as best-corrected visual acuity $\geq 0.3$ (≥ 20/40) LogMAR in the affected eye, together with a 2 LogMAR line difference between the two eyes and the presence of an amblyogenic factor.

**Changes made in the manuscript:**

**Material and methods, Referral and further evaluation:**

The above definition is added as the last sentence.
Comment #8:

i. Organization was fine, but Table 3 equaled more than 100%.

ii. Also in Table 4, it would have also been useful to determine the % of children in each age group that failed.

Response:

We agree with the reviewer.

i. The percentage in Table 3 is rounded to 2 decimal places.

ii. Table 4: The row percentage is calculated to show the percentage of children in each age group that failed.

<table>
<thead>
<tr>
<th>VA test</th>
<th>Fail*</th>
<th>Pass</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Age</td>
<td></td>
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<td>4 years</td>
<td>2</td>
<td>3.92</td>
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<tr>
<td>5 years</td>
<td>7</td>
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</tr>
<tr>
<td>6 years</td>
<td>11</td>
<td>5.91</td>
<td>175</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>5.00</td>
<td>380</td>
</tr>
</tbody>
</table>

*p = 0.732, chi-square test
Reviewer: Krishnaiah Sannapaneni

Minor Essential Revisions

#1: Abstract; Results: 95% CI: 2% to 6%. Expand CI (Confidence Interval) in the first instance used.

Response:

Changes done as required.

Changes made in the manuscript:

Abstract, Results, Line 1:

“The prevalence of visual impairment was 5% (95% confidence interval [CI] = 3.3, 7.6).”

#2. Abstract: Results: Provide the estimated proportion of refractive errors and as well as for myopic astigmatism along with its 95% confidence Intervals.

Response:

Changes done as required.

Changes made in the manuscript:

Abstract, Results, Line 3-5:

“The refractive errors were the most common cause of visual impairment (95%, 95% CI = 76.2, 98.8); myopic astigmatism was the commonest type of refractive error (63.2%, 95% CI = 40.8, 80.9).”
#3: Conclusion: Rephrase it: “The study has contributed an important knowledge in an effort to understand the magnitude of visual impairment among preschool children in the studied population. The study has showed that it is feasible to measure the distant visual acuity and stereopsis in the age group of 4 to 6 years.”
Check the abstract count. If needed rephrase again with similar meaning to fit into the prescribed word count of the abstract as per the journal’s requirement.

**Response:**

The abstract of the manuscript should not exceed 350 words. Current word count in abstract is 179. Therefore, there is no need to rephrase the conclusion.

#4. Background; Second Paragraph; First Sentence: “Amblyopia affects 5% of the …..” Provide reference to this.

**Response:**

Reference provided as required.

Major Compulsory Revisions:

Methods & Materials Section:

#5. Design and Sample section: Authors mention the expected prevalence rate of 20.6% and the precision is 0.04%. If the authors say that the expected prevalence of 20.6%, then modify the precision as 4% and it cannot be 0.04%.

Response:

We agree with the reviewer.

We thank the reviewer for pointing out this mistake.

Changes done as required.

Changes made in the manuscript:

Material and methods, Design and sample, Last sentence:

“Sample size was calculated for an expected prevalence rate of 20.6% and for a precision of 4.0%.”
6. Statistical analysis section:
   i. Remove the sentence “Profile of the students is presented with appropriate descriptive statistics”. Rephrase the sentence with “Descriptive statistical analysis is performed and results were reported”.

   ii. Also add “Categorical data analysis was performed by using either chi-square test or Fishers exact test as appropriate”.

Response:

We agree with the reviewer.

Changes done as required

Changes made in the manuscript:

Statistical analysis, Line 2-4:

The following sentences added:

“Descriptive statistical analysis was performed and results were reported. Categorical data analysis was performed by using either chi-square test or Fishers exact test as appropriate.”
7. Results section: Second paragraph: 4th Line: “Visual impairment was common among boys (n = 13) compared to girls (n = 7)”. Provide proportions and along with it p-value to test if the proportion of visual impairment observed between boys and girls is statistically significant.

Response:

Visual impairment was common among boys (n = 13, 65%) compared to girls (n = 7, 35%). However, the difference is not statistically significant (p = 0.142)

Changes made in the manuscript:

Result, Demography, Paragraph 2, Line 4-6.

The following sentences added:

“Visual impairment was common among boys (n = 13, 65%) compared to girls (n = 7, 35%). However, the difference is not statistically significant (p = 0.142).”
# 8. **Table 4:** Provide p-value to indicate which age group is having more proportion of fail or pass.

**Response:**

We agree with the reviewer.

Changes done as required

<table>
<thead>
<tr>
<th>Age</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 years</td>
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<td>3.92</td>
<td>49</td>
<td>96.08</td>
<td>51</td>
<td>100.0</td>
</tr>
<tr>
<td>5 years</td>
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<td>156</td>
<td>95.71</td>
<td>163</td>
<td>100.0</td>
</tr>
<tr>
<td>6 years</td>
<td>11</td>
<td>5.91</td>
<td>175</td>
<td>94.09</td>
<td>186</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>5.00</td>
<td>380</td>
<td>95.00</td>
<td>400</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*p = 0.732, chi-square test*
**#9. Discussion:** The discussion section should also focus on providing comparative analysis of this study results with that of studies conducted in South East Asia including India.

**Response:**

We agree with the reviewer.

Studies of visual impairment among preschool children in South East Asia including India are limited. Data from Singapore and Nepal are included in the discussion.

**Changes made in the manuscript:**

**Discussion, Paragraph 1, Line 7-9:**

The following sentences added:

“Chia et al reported a prevalence of 1.19% among Singaporean children aged 30 to 72 months [12]. While in Nepal, Karki reported that 5.97% of children aged 4 to 5 years have amblyopia [13].”
#10 References:
The references should follow a uniform structure. Currently it does not follow that.

Response:
We agree with the reviewer.
We thank the reviewer for pointing out this mistake.
Changes done as required.

WE sincerely thank all reviewers for their time and constructive input into our manuscript. WE hope BIOMED CENTRAL OPHTHALMOLOGY will accept our manuscript for publication.

With kind regards,

Tan Aik Kah,
Mallika Premsenthil;
Rose ak Manju;
Asokumaran Thanaraj;
Syed Alwi Syed Abdul Rahman