Reviewer's report

Title: Paediatric vision screening by non-healthcare volunteers: Evidence based practices

Version: 1 Date: 06 Jun 2018

Reviewer: Boris I. Gramatikov

Reviewer's report:

In an age of ever increasing health care costs, the vision screening is becoming increasingly important. The authors of this manuscript are well aware of the needs in this field, as well as the AAPOS recommendations and the major recent publications. They have done a good job by exploring the opportunity of engaging non-healthcare volunteers in pediatric vision screening. The study design is correct, including the training of the vision screeners and the role of the optometrist (whose findings I consider for simplicity to be precise enough in order to serve as a gold standard). Statistical analysis has been performed correctly. The conclusion is correct too - costs can be reduced significantly, and this is OK. It is a different question how many of us would like their children to be tested by volunteer examiners who had a screening sensitivity of 0.80% and specificity of 75% (for screening purposes, I would put the emphasis on the sensitivity, for obvious reasons). But again, this is a legitimate study and the results are important to know.

The authors correctly recognize the role of emerging automatic screening devices, such as the Pediatric Vision Screener (PVS) and the Spot. I strongly encourage them to include references to these devices. Several prototypes of the PVS have been developed at Johns Hopkins and by Rebiscan/Rebion (look under Guyton, Hunter, Gramatikov, Irsch etc). Sensitivities and specificities of well over 90% have been reported. The instrument developed at Hopkins in 2012 can detect both misalignment and anisometropia, the two major risk factors for amblyopia. No doubt that the idea of using in future automated vision screening devices by undergraduate students (or technicians for that matter), as indicated on lines 30-35 on p. 11, would be a sound approach and a logical continuation of this work.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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Yes

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I am able to assess the statistics

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