Review of: "Diagnostic accuracy of ‘modified’ Pediatric Sleep Questionnaire (PSQ) for Obstructive Apnea Syndromes in pediatric age"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

General comments

The manuscript reports a study concerning the accuracy for obstructive sleep apnoea syndrome (OSAS) diagnosis of a pediatric sleep questionnaire (PSQ) consisting of the 22 items of a classic PSQ plus a) 7 items related to anamnestic assessment, and b) 8 items related to sleep assessment which were proposed by other authors in a previous study [Panzarella et al. 2021], or modified PSQ. The authors of the proposed manuscript claim that their study is more reliable than [Panzarella et al. 2021], and that the two items “sweat at night” and “confused awakenings” could be essential for OSAS diagnosis, whereas [Panzarella et al. 2021] were in favor of “bizarre or abnormal positions during sleep”. However, there is little support such a claim:

1) The sample used is not much larger than that of Panzarella et al. (167 children instead of 124).

2) The main problem is that the sample comprises 160 controls and only 7 OSAS! The same critic holds for Panzarella et al., with 119 controls and only 5 OSAS…

3) Contrary to Panzarella’s sample, there is no mention of any approval of the study protocol, and there was no control of the informed consent of the parents by the school Dean.

4) The two candidate items perform rather poorly even according to the own statistics of the authors.

5) According to Fishers p-value, the two candidate items are not significantly associated to OSAS.

6) Statistic in general are poor.

Detailed comments

• Results section, line 2. The age range is 3-18 years (3-13 years in [Panzarella et al. 2021]). Are young people older than 16 really relevant?

• Table 1. It would be more convenient for comparison purposes to use the same numbering as [Panzarella et al. 2021], i.e. from 22 to 37.

• Table 2. Why are all statistics missing for items 1 and 3?

• Tables 2 and 3. The values are not correctly rounded (they are systematically rounded to a lower value,

not to the closest one given a precision).

• Tables 2 and 3. How where the confidence intervals for the proportions (Se, Sp, PPV, NPV) computed? They seem to be Clopper-Pearson intervals, but not always. See for example item 8, PPV: 7.2, CI [4.5, 11.4] is given, Clopper-Pearson yields 7.25 [2.39, 16.11].

• Tables 2 and 3. How where the confidence intervals for the likelihood ratios (LR+, LR-) computed? They seem to be the asymptotic estimates obtained using the log transform. See for example item 8, LR+: 1.7, CI [1.0, 2.9] is given, I obtain 1.8 [0.55, 5.8].

• Table 3. Why are all statistics missing for item 15?

• The statistics for the 22 items of the classic PSQ should be given in order to allow a comparison to the additional items of the modified PSQ. Note that this critic holds for [Panzarella et al. 2021].

• For items 8 and 11, Fisher's exact test p-value equals 0.13 and 0.23 respectively. Thus, the answer to these items is not significantly associated with OSAS. Even the statistics given by Table 3 are not suggestive of a strong discriminative power (the LR+ are < 10 and the LR- > 0.1), and the sensitivity of item 11 is especially poor (14.2% reported, as a matter of fact 14.29%...).

• Fisher p-value for item 10 (Panzarella's item) is a little smaller (0.094), though not significant either.

• The significance of items should also be assessed using multivariate logistic regression.