Objective: To assess the diagnostic test accuracy of questionnaire and clinical examination-based scoring tools in the diagnosis of pediatric OSA.

Study Selection: All studies including children <18 y of age, from 1960-2018, comparing clinical scoring tool with an observed polysomnography (PSG) for OSA were included without language restriction.

Data Extraction: Two reviewers independently reviewed all the studies. Outcome measures: Outcomes measures were diagnostic test accuracy (DTA) statistics.

Results
• Twenty seven studies met the inclusion criteria.
• 15 scoring tools were found. 4 scoring tools were assessed by >3 authors & further 11 were assessed by a single author.
• Most common scoring tools were: OSA Score, Sleep-Related Breathing Disorder [SRBD] scale, Severity Score, and OSA-18
• None of the 15 scoring tools performed well enough to be considered accurate diagnostic tests for pediatric OSA.
• The Pediatric Sleep Questionnaire SRBD scale, which is widely used, has a sensitivity of 71% to 84% in included studies, but specificity as low as 15% and a low AUC of 0.57-0.69

Conclusions and Key Messages
1. DTA results indicate that published clinical scoring tools do not accurately predict diagnosis of pediatric OSA as defined by polysomnography outcome measures.
2. As sensitivity and specificity of Questionnaires for OSA diagnosis is poor, questionnaires cannot be used as a surrogate for Sleep Study.
3. PSG is the gold-standard objective test for pediatric OSA diagnosis & to assess its severity.
4. Questionnaires provide crucial information on the impact of sleep-disordered breathing on a child’s physical and psychological health, which are not adequately reflected in PSG outcomes measures.
5. Questionnaires provide complementary information and should be used in association with a sleep study.

Indications of Sleep Study in Children
• Suspected sleep apnea with adenotonsillar hypertrophy
• Complicated sleep apnea with obesity
• Craniofacial syndromes, Down’s syndrome, Obesity syndromes (eg Prader Willi), Pierre Robin sequence
• Neuro muscular disorders like DMD, SMA, congenital myopathy
• Suspised narcolepsy
• To differentiate Parasomnia vs Nocturnal Seizures [expanded EEG montage]
• Periodic limb movement disorder (PLMD)

References:

Expert Comment
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Pediatric Evidence And Research Learning Snippet
Are Clinical Scoring Tools Accurate For Diagnosis Of Pediatric OSA?