

PSG-derived AHI alone. We have previously shown that the cumulative duration of respiratory efforts (Sr_RE) during sleep and derived from the automated analysis of mandibular movements (MM) by a wireless sensor (Sunrise, Namur, Belgium) provides a relevant and useful metric for the diagnosis of SDB in adults. In the present study, we evaluated the clinical utility of Sr_RE in pediatric SDB. We also explored potential associations between Sr_RE and sleep respiratory effort (SRE)-related symptoms, as well as the ability of Sr_RE to identify different SDB clinical subtypes in children.

Methods: The study was conducted on a clinical cohort of 140 children referred for PSG evaluation for suspected SDB. First, we applied the k-prototype algorithm to classify the patients into latent clinical subtypes, then evaluated the association between Sr_RE and the specific symptoms in these clusters. A similar approach was performed for PSG indices (RDI, AHI) as well.

Results: Using only self-reported symptoms, 3 latent clinical subtypes were identified. Classification into these subtypes was significantly associated with a higher prevalence of snoring ($p = 0.001$), daytime sleepiness ($p < 0.001$), witnessed apnea ($p = 0.02$), breathing efforts ($p = 0.04$) and night sweating (0.03). Despite the fact that the clusters were generated without using any PSG or Sr_RE measures, significant differences emerged among subtypes for both PSG_RDI ($p = 0.03$) and Sr_RE ($p = 0.01$).

Logistic regression and Bayesian network analyses indicated that within each subtype, the Sr_RE index was associated with more SDB symptoms (9 links), compared to PSG_AHI and RDI (only 6 to 7 links). The association strength was also higher between Sr_RE and SRE-related symptoms, including observed breathing efforts (OR = 12.17), snoring (OR = 3.63), witnessed apnea (OR = 2.28) and non-restorative sleep (OR = 11.99), in comparison with associations based on PSG (all OR values less than 2).

Conclusions: Our findings suggest that MM-derived indices, particularly the cumulative duration of sleep respiratory efforts provide increased clinical relevance than the PSG_AHI or PSG_RDI to indicate the presence of the SDB-related symptoms in children.

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P491 | Sleep disorders in night workers: effect of the shiftwork rotation scheme

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Objectives/Introduction: Shift work adversely affects sleep causing sleep deprivation, insomnia, and daytime sleepiness. Shift rotation schemes can influence workers' tolerance of nightshift work.

Aim of this study is to assess whether a regular or irregular shift rotation scheme differentially affects day time sleepiness and sleep quality among nightshift workers, and to identify factors influencing adaptation.

Methods: We recruited for study 145 male workers, including 77 from a ceramic tile factory (group1) and 68 from a dockyard company (group2). Factory workers had a fixed forward rotation shift-work scheme: two morning (M) shifts, two evening (E), two night shifts (N) and three rest days (R) (MMEENRRR). Dockyard workers had an irregular schedule, due to their job depending on several external factors. We administered to both study groups the Epworth Sleepiness Scale (ESS) and the Pittsburgh Sleep Quality Index (PSQI) questionnaires. We also gathered self reported data on demographic and lifestyle variables.

We used non parametric methods to compare median value and interquartile range (IQ) of ESS and PSQI scores by smoking, alcohol, marital status, and engagement in nightshift work, as well as their correlation with age and BMI. We studied the probability of occurrence of somnolence (ESS score ≥ 12) and poor sleep (PSQI score ≥ 5) with logistic regression analysis.

Results: The study groups were homogeneous for age, marital status and BMI. 94% dockyard workers worked on average 8.5 (sd 3.65) nightshifts/month; 69% ceramic tile worked 4.3 (sd 2.9) nightshifts/month. Quality of sleep and day time sleepiness did not differ between the two groups (ESS: $p = 0.425$; PSQI: $p = 0.795$). ESS score was inversely related to age, and ESS scores ≥ 10 were more frequent among dockyard workers ($p = 0.04$). Other variables, such as marital status, BMI, smoke, and alcohol intake, did not significantly affect ESS and PSQI score.

Conclusions: Our results suggest that irregular shift rotation schedules increase risk of excessive daytime somnolence in respect to a regular rotating scheme, suggesting that adaptation is more difficult and risk for reduced cognitive performance higher in association with this specific working schedule.

Disclosure: Nothing to disclose.

P492 | Clinical data in groups with elderly obstructive sleep apnea hypopnea syndrome and cognitive impairment

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Objectives/Introduction: The apnea-hypopnea index (AHI) is defined as the summary of apneas and hypopneas per hour of sleep and is associated with several clinical manifestations. The aim of the study is to analyze these clinical manifestations associated with the AHI.

Methods: A cross-sectional-prospective study has been made in patients of Cognitive Impairment and Sleep Units of our center between February 2014 and December 2018.