

Flinders fatigue scale (FFS) scores ($r=0.65$). Criterion validity showed significantly ($p<0.01$) higher scores in subjects with CDH (69.0 ± 16.6) as compared to those with CID (54.4 ± 18.3) or OSD (58.5 ± 20.0). A SIQ cut-off score ≥ 57.5 provided a sensitivity/specificity of 0.77/0.65, while a cut-off score ≥ 61.5 provided a sensitivity/specificity of 0.71/0.70 to identify CDH vs. ESS<10 (AUC=0.76).

Conclusion: The SIQ shows satisfactory indices of reliability and construct validity in a clinically-diverse sleep disorders sample. Its criterion validity is supported by its divergent association with hypersomnia vs. insomnia disorders, as well as its adequate sensitivity/specificity to identify patients with CDH. The SIQ can help clinicians easily assess the complex dimensionality of sleep inertia and target behavioral sleep treatments. Future studies should confirm the best SIQ cut-off score by including good sleeping controls, while clinical studies should determine its minimal clinically important difference after pharmacological or behavioral treatments.

Support (if any):

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YOUNG PATIENTS WITH HYPERSOMNIA AT TUFTS MEDICAL CENTER

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Introduction: Young people with hypersomnia (up to 30 years old) represent unique clinical patients that are relatively unstudied. This population has complex presentations, may have increased utilization of medical resources, and have additional and/or untreated comorbid conditions such as mild OSA (Obstructive Sleep Apnea). This project looks to characterize and inventory clinical variables of this subset of sleep medicine patients at Tufts Medical Center. In addition, we seek to tabulate management of these patients in order to specifically delineate whether or not treating mild OSA in this group resulted in clinical improvement.

Methods: After IRB approval, a retrospective database was used to search for patients up to age 30 with comorbid hypersomnia diagnoses from 5/1/2015 to 12/2020. De-identified datasets, including multiple clinical variables and demographics were analyzed and compared to an age-matched control group of patients who also included an OSA diagnosis.

Results: Various clinical and demographic data sets were collected in the hypersomnia patient population to characterize the quality and nature of their sleep and hospital utilization. Our preliminary results for this sub-population of 96 patients have found that on average these patients had 2.16 visits to our medical center with some outliers with as many as 6–10 visits in a two-year period from the initial contact. This group had a mean WASO (Wake After Sleep Onset) of 48.95 minutes, a mean sleep latency of 8.56 minutes, and a mean amount of stage N1 sleep of 25.6 minutes (6.4%). Further research will be done to compare these values and more to a similar population with OSA.

Conclusion: Our retrospective review identifies clinically important data relevant to the sleep quality, patient management, and resource utilization of young patients with hypersomnia. Further research with a comparison to a control group with OSA may identify important differences or nuances between these groups.

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NARCOCATAPLECTIC PATIENTS, PSYCHIATRIC SYMPTOMS AND EXECUTIVE FUNCTIONS: IS THERE A LINK?

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Introduction: Narcolepsy with cataplexy (NC) is a neurological disorder characterized by orexin deficiency in the hypothalamus with associations to areas implied in emotion. Several studies highlighted a deficit in executive functions in narcoleptic patients. Moreover literature reports a wide comorbidity between NC and psychiatric disorders, but the relationships in NC patients are still unclear. The aim of our study is to evaluate possible mood and anxiety disorders in NC patients and understand their relationship with cognitive performances.

Methods: We assessed 15 NC patients with questionnaires concerning degree of somnolence [ESS], depression [BDI-II], perceived stress [PSS], state and trait anxiety [STAY-Y I and II]. Furthermore, patients performed a battery test (PEBL - psychology experiment building language) to investigate executive functions through 7 tests (Berg's Card Sorting Test [BCST]; Tower of London [TOL]; Continuous Performance Task [CPT]; Go / No-go Task; Victoria Stroop Test [VST]; Balloon Analogue Risk Task [BART]; Digit Span Forward).

Results: Descriptive analyses show that NC subjects have pathological daytime sleepiness ($16,07\pm 2,94$), moderate perceived stress ($19,73\pm 3,95$), mild state anxiety ($48,67\pm 15,77$). However, subjects do not show pathological indexes in depression and in trait anxiety. We also found a positive correlation in both state and trait anxiety with failure to maintain set in the BCST test ($r=0,644$; $p=0,010$ and $r=0,573$; $p=0,025$, respectively). However, no significant correlations were found between PEBL scores and excessive daytime sleepiness, depression, and perceived stress.

Conclusion: Our data confirm that NC subjects show symptoms related to stress and anxiety, that can facilitate the change of the set during cognitive performances. Since the neurotransmission of hypocretin is involved in the regulation of stress and anxiety, it is important to understand whether these symptoms are primary pathological phenomena in NC patients. Our data suggest that sleep medicine experts should also consider psychiatric aspects during the cognitive assessment of NC patients.

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EXCESSIVE DAYTIME SLEEPINESS: BEYOND THE EPWORTH SLEEPINESS SCALE RESULTS FROM A POPULATION-BASED STUDY

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Introduction: Excessive daytime sleepiness (EDS) is a common symptom present in several clinical, mental and sleep disorders. However, its subjective metrics have been criticized in the literature due to lack of association with disorder severity, or disagreement with

objective measures. Epworth Sleepiness Scale (ESS) is a widely used questionnaire to evaluate EDS, however it may not be sufficient as a sole measure to identify cases of somnolence in the general population. Study objectives: To investigate the association between EDS with socio-demographic, body composition and PSG measures in the general population of São Paulo, Brazil.

Methods: 1,042 participants from a population-based epidemiological study underwent full in-lab PSG, questionnaires (ESS, fatigue, quality of life, depression and anxiety scales), bio impedance, socio-demographic and anthropometric measures at baseline and in the follow-up 9 years later. A univariate linear regression analysis including the whole sample (baseline and follow-up) was performed to analyze predictors of EDS and ESS score in the follow-up was the dependent variable. All variables with a p-value <0.15 were included in an exploratory factor analysis (principal component analysis with Varimax rotation) to assess the factorial structure of EDS.

Results: The results supported a five-factorial structure associated with EDS as follows: Factor 1 - Quality of life (Physical and Psychological domains of WHOQOL), Factor 2 - Fatigue (questions from Chalder Fatigue Scale concerning weakness, tiredness, lack of energy and less strength in the muscles), Factor 3 - PSG - sleep duration (wake after sleep onset, sleep efficiency, total time spent awake), Factor 4 - PSG - sleep structure (arousal index, N1 and N3 duration), Factor 5 - Body composition (body mass index). PSG variables related to sleep disordered breathing and movement disorders were not associated with EDS.

Conclusion: EDS measured by ESS was associated with domains other than sleep disorders in the general population. ESS metrics was significantly associated with fatigue and sleep duration.

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IMPACTS OF CHRONIC NAUSEA AND VOMITING ON DAYTIME SLEEPINESS AND FATIGUE

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Introduction: Chronic nausea and vomiting (CNV), common symptoms in patients with GI disorders like gastroparesis, can be a debilitating health problem with considerable impact on patients' health-related quality of life during daytime. Yet, little is known about how CNV may impact on sleepiness and fatigue during the daytime. Our aim was to examine the impact of CNV on daytime sleepiness and fatigue based on the data from a longitudinal study.

Methods: Prospective longitudinal study with two waves: 12,218 subjects interviewed by phone during wave 1 (W1); 10,931 during wave 2 (W2) three years later. The sample was representative of the US general population. Analyses included subjects participating to both waves (N=10,931). CNV was defined as episodes of nausea and vomiting occurring at least twice a month for at least 1 month (outside pregnancy). Logistic regression models were employed to determine whether CNV is a predictive variable for excessive sleepiness or fatigue.

Results: Out of all W1 participants, 9.8% (95% CI: 9.2%-10.4%) reported nausea only while 3% (95% CI: 2.7%-3.3%) reported CNV. In W2, 7.7% (95% CI: 7.2%-8.2%) reported nausea only and 2.5% (95% CI: 2.2%-2.8%) reported having CNV. Of the subjects who

participated in both W1 and W2, 25.7% of them reported CNV in W1. CNV subjects reported more frequently excessive daytime sleepiness (53.5% vs. 25.9%) and being moderately or severely fatigued (38.6% vs. 5.4%) compared with the participants without nausea or vomiting. After controlling for age, sex, BMI, health status, alcohol intake, sleep disorders and psychiatric disorders that might impact on daytime sleepiness or fatigue, it was found that subjects with CNV at both W1 and W2 had a significantly higher relative risk of reporting daytime sleepiness (RR: 2.7 (95% CI:1.9-3.9) p<0.0001) and fatigue (RR: 4.9 (95% CI:3.2-7.5) p<0.0001) at W2, compared with the participants without nausea or vomiting.

Conclusion: Many factors are likely to influence daytime sleepiness. CNV appears to be an important contributor even after controlling for several factors that can explain the sleepiness. This underlines the extent to which alertness could be disturbed and impacted by chronicity of nausea/vomiting symptoms.

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FACTORIAL STRUCTURE OF HYPERSOMNOLENCE AS MEASURED BY THE EPWORTH SLEEPINESS SCALE

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Introduction: Hypersomnolence, or excessive sleepiness, is highly prevalent in the general population. It can be a cause or a consequence of several sleep, psychiatric disorders or physical diseases. However, self-report tools to assess hypersomnolence are relatively limited; apart the Epworth Sleepiness Scale (ESS), there is little choice to measure hypersomnolence. Our aim is to examine the association between hypersomnolence with health, psychiatric disorders and sleep in the general population

Methods: The initial study was carried with 15,929 individuals from 15 US States. The longitudinal study was carried on in eight of these states. A total of 12,218 subjects were interviewed by phone during the first wave (W1) and 10,930 at the second wave (W2) three years apart. The analyses were carried on the subjects who participated in both interviews (N=10,930). A univariate linear regression analysis including the whole sample (baseline and follow-up) was performed to analyze predictors of hypersomnolence and ESS score in the follow-up was the dependent variable. All variables with a p-value <0.15 were included in an exploratory factor analysis (principal component analysis with Varimax rotation) to assess the factorial structure of hypersomnolence.

Results: Our results support a three-factor structure associated with hypersomnolence. The first factor explained 24.9% of the variance and grouped together presence of medical conditions, psychiatric disorders, body mass index and sleep-disordered breathing. The second factor explained 12.9% of the variance and grouped together napping, fatigue (as measured the Fatigue Severity Scale) and poor quality of life. Finally, the third factor grouped together disrupted sleep and sleep duration and explained 11.7% of the variance.

Conclusion: Hypersomnolence as measured by the ESS is associated with pathologies unrelated to sleep disorders in the general population. The first factor is mostly related to health factors while the second factor might be related to hypersomnia and the third factor to insomnia.

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