number of naps, and sleep quality. The significant findings regarding later adolescent bedtimes may reflect delayed sleep phase or possibly improved circadian alignment due to delayed school start times and at-home classes. The null findings regarding naps and caffeine intake may be reflective of the stability of daytime sleepiness. While we would expect daytime sleepiness to improve with increased circadian alignment, the effects may be diminished by increased media use in bed and decreased energy expenditure during the day. Given the observed relationships, current sleep hygiene interventions may require a focus on stimulus control and reducing time with media in bed.

Support (if any):

688 PEDIATRIC OBSTRUCTIVE SLEEP APNEA (OSA) AND COVID-19-RELATED ADVERSE CLINICAL OUTCOMES
Vaishal Shah,1 Nancy Foldvary-Schaefer,2 Lu Wang,1 Lara Jehi,4 Cynthia Pena Obreja,6 Alex Milinovich,7 Reena Mehra4
1Neurologic Institute, Cleveland Clinic, 2Cleveland Clinic, 3Department of Quantitative Health Sciences, Cleveland Clinic, 4Neurological Institute, Cleveland Clinic, 5Sleep Disorders Center, Neurological Institute, Cleveland Clinic

Introduction: The relationship of OSA and human coronavirus (COVID-19) in the pediatric population is unknown. We postulate that OSA is associated with SARS-CoV-2 positivity and with adverse COVID-19 outcomes in children.

Methods: A retrospective review of 120 consecutive patients (<18 years) with prior polysomnogram (PSG) and COVID-19 testing from the Cleveland Clinic COVID-19 registry was conducted. Using a case control design of SARS-CoV-2 positive and negative pediatric patients, we examined COVID-19 and pre-existing OSA (dichotomized AHI≥1) using logistic (OR,95%CI) regression and as continuous measures: AHI, oxygen(SpO2) nadir, %time SpO2<90% using linear regression(beta+/−SE). In those positive for SARS-CoV-2(cases only), we assessed the association of OSA and World Health Organization(WHO) COVID-19 clinical outcome composite score (hospitalization, requiring supplemental oxygen, non-invasive ventilation/ high-flow oxygen, invasive ventilation/ECMO or death) using Wilcoxon rank sum test for ordinal data.

Results: Cases (n=36) were 11.8±4.4 years, 61% male, 27.8% black and 88.9% with OSA, while 85.7% of controls (n=84) had OSA. OSA was not associated with increased SARS-CoV-2 positivity: OR=1.33(0.40, 4.45,p=0.64). No significant difference between cases and controls for mean AHI 3.7(1.5,6.0) vs 3.5(1.5,7.1),p=0.91,SpO2 nadir 88.6±5.4 vs 89.1±4.4,p=0.58,%time SpO2<90% 0.05[0.00,1.00) vs 0.10 (0.00,1.00, p=0.65) respectively was noted. WHO-7 COVID-19 clinical outcome did not meet statistical significance in relation to OSA due to the low event frequency (p=0.49). Of note, those with OSA vs without OSA had a higher WHO-7 outcome score of 2 vs 0 and prevalence of hospitalization: 12.5 vs 0% respectively. Of hospitalized patients, the following was observed: 23% had moderate/severe OSA vs 4.3% mild OSA, 50% required supplemental oxygen and 25% required intubation/invasive ventilation. No deaths or readmissions were reported. High risk conditions included: 75% obesity, 50% asthma, 25% sickle cell disease and 25% hypoplastic left heart.

Conclusion: In this first report of which we are aware focused on COVID-19 in pediatric OSA, we use a case control design leveraging COVID-19 and sleep laboratory registries. Albeit not statistically significant, pediatric patients with OSA had a higher percentage of worse clinical outcomes. Larger network studies are needed to clarify whether poorer COVID-19 outcomes may be attributable to OSA or modulated via high risk health conditions.

Support (if any):

689 OBJECTIVE ASSESSMENT OF INPATIENT SLEEP PATTERNS AND QUALITY: A PILOT STUDY
Sarah Susman,1 Ashwin Ananth,1 Elie Faires,1 Maurits Boon,1 Colin Huntley,1 Zhanna Fass1
1Thomas Jefferson University

Introduction: Sleep disruption is common among hospitalized patients due to psychological, physiological, and environmental reasons including illness, pain, anxiety, invasive interventions, frequent monitoring, and stimuli, especially noise and light. The AASM has published guidelines for the use of actigraphy in the outpatient setting, but there is a paucity of literature evaluating the validity of actigraphy in inpatients. The aim of this study is to evaluate sleep in hospitalized general medicine patients undergoing sleep medicine consultation using actigraphy and qualitative surveys.

Methods: A single-site prospective study in hospitalized medicine patients. Patients were observed with a Fitbit® Charge3 wrist actigraphy device overnight, then administered 7 surveys: Richards-Campbell Sleep Questionnaire (RCSQ), qualitative questionnaires assessing sleep history, sleep hygiene, barriers to sleep, STOP-BANG, Epworth Sleepiness Scale (ESS), and Patient-Health Questionnaire-2 (PHQ-2). Actigraphy data including total sleep time, slow wave sleep time, and number of awakenings was compared with patient-reported data.

Results: In preliminary analysis, six patients met inclusion criteria and underwent sleep medicine consultation, overnight actigraphy, and completed 7 surveys. Based on subjective sleep history questionnaires, average total sleep time was 437 ± 215 minutes. Actigraphy revealed average total sleep time was 228 ± 80 minutes with an average of 3.6 nocturnal awakenings. Increased number of awakenings on actigraphy was not correlated with increased number of awakenings by survey. The most frequently reported barriers to sleep on patient surveys were pain and being woken up for labs or vital signs. The average STOP-BANG score was 6 out of 8 and average ESS was 14 out of 24.

Conclusion: Restorative sleep warrants consideration alongside complex medical care during hospitalization. Patients experience decreased total sleep time and increased number of awakenings while in the hospital compared with their subjective estimates of sleep at home. Actigraphy provides a non-invasive and reliable way to monitor some sleep parameters in the inpatient setting. An elevated STOP-BANG score could represent sleep disordered breathing and impact perceptions of sleep quality. Patient-identified barriers to sleep are targets for quality improvement. Future studies should compare inpatient actigraphy data to polysomnographic data and the effect of sleep-directed interventions on sleep quality in the hospital.

Support (if any):

690 AN ANALYSIS OF OBJECTIVE AND SUBJECTIVE SLEEP PATTERNS AND INFECTION SYMPTOMS OF MEDICAL PERSONNEL WORKING THROUGH THE COVID-19 PANDEMIC
Hannah Eldringhoff,1 Carolyn Mickelson,1 Lonique Moore,1 Madison Pirner,1 Scott Doyle,1 Janna Mantua,2 Ashlee Mckeon1
1Walter Reed Army Institute of Research

Introduction: There is a well-established connection between sleep and the immune system, and in the midst of a global pandemic, it is vital to understand the relationship between COVID-19 symptomatology and sleep. While our communities practice safety protocols, medical personnel working on the COVID-19 response
effort are at high risk for exposure and contraction. This creates an urgent need to better understand whether sleep may contribute to COVID-19 symptom onset, severity, and recovery. This study examined the relationship between subjective and objective sleep during infection.

Methods: Fifty volunteers (age 35.15±9.97) considered high risk for COVID-19 participated in the study. The sample consisted mostly of medical personnel (93.27%) working through the pandemic. Over six months, participants completed monthly surveys and daily logs via Qualtrics. These surveys included questions about sleep, infection symptoms, COVID-19 tests and diagnoses, and mood. Wrist-worn actigraphy was collected continuously throughout the study. Sleep duration, latency, wake after sleep onset, and efficiency were processed using Philips Actiware 6.0. Actigraphy and survey data were analyzed using SPSS v. 25.

Results: Sixty-two percent of participants experienced infection symptoms. Those experiencing symptoms were significantly more likely to report having poorer sleep quality t(255.59)=5.78, p=<.001, poorer mood upon waking t(258.03)=6.53, p=<.001, feeling less alert upon waking t(255.61)=4.56, p=<.001, and spending more time awake at night t(26.69)=7.29, p=<.001. Results showed that compared to those asymptomatic, participants with cough t(2164)=2.07, p=.039, diarrhea t(2161)=2.51, p=.012, and headache t(106.18)=7.05, p=<.001 all had significantly less total sleep time, while those with body aches spent significantly more time awake at night t(2164)=2.10, p=.036. Conclusion: This preliminary examination of the data broadly suggests that medical personnel experiencing infection symptoms may have difficulty obtaining adequate sleep. Further, specific infection symptoms may share a stronger relationship with key sleep parameters than others. These findings support further testing of the bi-direction relationship between infection symptoms and sleep. Results from this research will contribute to enhancing prevention, detection, and treatment guidance related to future domestic and globally-experienced infections.

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692 LONGITUDINAL STABILITY OF SLEEP AND HEALTH CORRELATES IN ADULTS WITH AUTISM SPECTRUM DISORDER

Kristina Puzino,1 Amanda Pearl,1 Susan Calhoun,1 Jamal Essayli,1 Danielle Alexander,1 Michael Murray,1 Julio Fernandez-Mendoza1
1Pennsylvania State University, College of Medicine

Introduction: Individuals with Autism Spectrum Disorder (ASD) experience sleep disturbances to a greater degree than the general population. The majority of research investigating sleep disturbances in ASD has focused on children and adolescents. The aim of the current study was to determine the stability and health correlates of self-reported sleep disturbances in adults with ASD.

Methods: Participants included 55 adults with ASD recruited from state-funded Pennsylvania programs (31.2±7.6 years old, 80% male, 10.9% minority). Patient-Reported Outcomes Measurement Information System (PROMIS) measures assessing Sleep Disturbances, Sleep-Related Impairment, Fatigue, Anxiety, Depression, Anger, and Physical Health, were completed at baseline and every 90±14 days over a 2-year period. Intraclass correlation coefficients (ICC) were calculated for each sleep outcome, and interpreted as 0.00–0.20="poor stability," 0.21–0.40="slight stability," 0.41–0.60="moderate stability," 0.61–0.80="substantial stability," and 0.81–1.00="almost perfect stability" across the first three time-points. Linear mixed models examined the independent association of sleep disturbances, sleep-related impairment, and fatigue on anxiety, depression, anger, and physical health over the two-year period.

Results: Sleep-related impairment (ICC=0.73) and fatigue (ICC=0.64) were substantially stable, while sleep disturbances were moderately stable (ICC=0.58). All three sleep-related outcomes were independently associated with anxiety (sleep-related impairment p=0.012; sleep disturbance p<0.001; fatigue p<0.001) and anger (sleep-related impairment p<0.001; sleep disturbance p=0.001; fatigue p<0.001) across the two-year period. Sleep disturbance (p<0.001) and fatigue (p<0.001), but not sleep-related impairment (p=0.267), were associated with depression across the two-year period. In contrast, none of the sleep-related outcomes (sleep-related impairment p=0.285; sleep