and 18.8% of physicians had recollected having COVID-19 related dreams. 33% doctors' last thought before sleep and first thought after waking up were about COVID-19. 36% doctors looked for information about COVID-19 on media immediately before going to sleep and immediately after waking up. More than 60% doctors started meditation, exercise, yoga or relaxation techniques for getting better sleep.

**Conclusion:** A further decline in duration and quality of sleep due to the COVID-19 pandemic amongst already sleep-deprived doctors may be detrimental not only to their own health but for patient-care also.

**Support (if any):**

## 683

### COMPARISON OF TELEMEDICINE AND IN-PERSON PSYCHOTHERAPY FOR CPAP ADHERENCE IN A POPULATION OF VETERANS

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**Introduction:** Obstructive sleep apnea (OSA) is the second most common sleep disorder among Veterans and carries risk of serious health complications when untreated. The gold standard for OSA treatment is Positive Airway Pressure (PAP). However, adherence to PAP therapy is chronically low. Interventions to enhance adherence include education, practical support, and psychotherapy. Cognitive behavioral therapy and motivational interviewing have been shown to improve CPAP usage by approximately 1 hour per night. Telemedicine-delivered CPAP education and telemonitoring-with-feedback has demonstrated improved adherence in patients with OSA. Our study evaluated the effectiveness of a telemedicine group psychotherapy intervention for Veterans diagnosed with OSA and found to be nonadherent to CPAP therapy. The intervention is delivered in four weekly 60-minute sessions.

**Methods:** We identified a cohort of 29 patients who participated in the intervention via telemedicine from April 2020 - September 2020 (Telemedicine Psychotherapy cohort). The cohort was compared to a historical control of 35 patients who participated in the in-person group psychotherapy from April 2019 - September 2019 (In-Person Psychotherapy cohort). Through retrospective chart review, we analyzed baseline and post-intervention data from both cohorts. Demographics collected included age, sex, BMI, ethnicity, zip code, as well as medical and mental health comorbidities. Data collected from the medical record included: OSA severity, pre- and post-psychotherapy 90-day average nightly CPAP usage (in minutes), number of psychotherapy classes attended (out of 4) and number of sleep clinic visits at 90-days post-psychotherapy. We used descriptive statistics to provide summary data of this sample and t-test to evaluate Veteran's average CPAP usage per night and number of sleep clinic visits at 90-days post-psychotherapy between cohorts.

**Results:** Compared to a cohort of in-person group psychotherapy to improve CPAP adherence, a telemedicine-based cohort demonstrated improvement in 90-day average nightly CPAP usage by an average of 76 minutes per night. (p=0.08) Additionally, patient engagement with the sleep clinic at 90 days following completion of telemedicine psychotherapy was significantly higher compared to in-person psychotherapy (p<0.001).

**Conclusion:** In a haphazardly-collected convenient sample of veterans during the COVID-19 pandemic, telemedicine psychotherapy led to improved CPAP usage. Veterans who underwent telemedicine intervention also significantly increased engagement with the sleep clinic.

**Support (if any):**

## 684

### CONTRIBUTION OF PULMONARY DISEASES TO COVID-19 MORTALITY IN A DIVERSE COMMUNITY OF NEW YORK CITY

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**Introduction:** New York City has been one of the largest epicenters of the COVID-19 pandemic. This provided a wealth of data to examine the characteristics of COVID-19 patients in this multi-ethnic city, while assessing the contributions of cardio-metabolic burden and pulmonary conditions as potential "at-risk" conditions for COVID-19. We assessed the relative contribution of common upper and lower airway pulmonary diseases in determining the likelihood of COVID-19-related mortality independent of other medical conditions, health risks, and sociodemographic factors.

**Methods:** We analyzed data from one of the largest US-based case series of patients with COVID-19, captured from an academic health network in NYC. A total of 11,512 hospitalized patients (March 2-May 24, 2020) were tested with 4,446 (38.62%) receiving a positive diagnosis for COVID-19. EHR queries yielded age at time of testing, sex, race/ethnicity aggregated as non-Hispanic black, Asian and Hispanic referenced to non-Hispanic white; cardio-metabolic conditions (hypertension, hyperlipidemia, diabetes, obesity, peripheral artery disease, and coronary artery disease); pulmonary disease (e.g., COPD, sleep apnea, or asthma); autoimmune disease; and cancer. Mortality was based on the patient state (alive or deceased) at the moment of discharge. We included only patients who had been discharged alive or had expired. Anaconda Python 3.7 was used to perform all analyses.

**Results:** Among patients testing positive, 959 (21.57%) died of COVID-19-related complications at the hospital. Multivariate-adjusted Cox proportional hazards modeling showed mortality risks were strongly associated with greater age (HR=1.05; 95%CI:1.04–1.05), ethnic minority (HR=1.26; 95%CI:1.10–1.44), low household income (HR=1.29; 95%CI:1.11, 1.49), and male sex (HR=0.85; 95%CI:0.74, 0.97). Higher mortality risks were also associated with a history of COPD (HR=1.27; 95%CI:1.02–1.58), obesity (HR=1.19; 95%CI:1.04–1.37) and peripheral artery disease (HR=1.33; 95%CI:1.05–1.69). We observed a significantly higher rate of COVID-19 cases (43.8% vs 39.6%, p<0.05) among patients with sleep apnea (7.72%). However, they did not have a significantly higher mortality rate (13.0% vs 11.8%, NS), although they experienced a longer hospital stay (7.1±7.7 vs 6.1±7.5, p<0.01).

**Conclusion:** Patients with COPD had the highest odds of COVID-19 mortality. Sociodemographic factors including increased age, male sex, low household income, ethnic minority status were also independently associated with greater mortality risks.

## 685

### SLEEP LATENCY, PRE AND PERI-COVID-19 EXPERIENCES AND PTSD SYMPTOMS: RESULTS FROM THE NYU COVID-19 MENTAL HEALTH STUDY

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**Introduction:** An effective response to the COVID-19 pandemic has been the decision to subject individuals residing in New York City to quarantine rules in order to reduce the spread of the virus. As might have been expected, restriction of usual daily activities would affect individuals' sleep-wake patterns. It is also known that exposure to traumatic experiences can also engender sleep disturbances, most notably in their ability to initiate sleep. This study investigated the associations between sleep onset latency (SOL), pre and peri-COVID-19 exposure and symptoms of posttraumatic stress disorder (PTSD) among New Yorkers.

**Methods:** 541 individuals (female = 373(69%); mean age=40.9) were recruited during the summer and fall of 2020 in New York City to participate in the NYU-COVID-19 Mental Health Study. Participants provided sociodemographic data and were also asked to respond to the COVID-19 quarantine experiences, comprised of seven binary questions, the PTSD Checklist-PCL-5, and the Pittsburg Sleep Quality Index. Descriptive and linear regression analysis were performed to explore associations of scores on the COVID-19 quarantine experience with PTSD and sleep data. All analyses were performed using SPSS 25.0

**Results:** Regression analyses revealed that SOL emerged as the strongest independent predictor of PTSD symptoms [B(t) = −.630(12.7); p < .001]; factors adjusted in the model included pre and peri-covid-19 factors such as age, sex, job type, and quarantine experience. Analyses assessing potential interaction effect revealed that quarantine experience did not affect the relationship between SOL and PTSD [B(t) = .086(.831); p = >.005]. The other sleep factors in the model did not yield significance. sleep duration had a weak correlation with quarantine, it was not found to be a predictor of PTSD.

**Conclusion:** We observed that SOL was the most important determinant of PTSD symptoms among individuals exposed to COVID-19. This is consistent with other findings suggesting that a sizable proportion of individuals exposed to pandemics are likely to experience sleep disturbances. It is plausible that quarantine might lead to increased daytime naps, which may impact SOL. Further research is needed to better understand the association of SOL and PTSD as a result of Covid-19.

## 686

### SLEEP EDUCATION AND SLEEP OUTCOMES IN THE TIME OF COVID-19 IN MEXICO

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**Introduction:** This study examines computer-mediated sleep education for health providers enrolled in a certified diabetes educator program in November 2020 in Mexico.

**Methods:** Data derived from pre/post ratings assessed knowledge of obstructive sleep apnea (OSA), insomnia, restless legs syndrome (RLS), short sleep duration (SSD), circadian rhythm disorders (CRD), and drowsy driving (DD) on a 5-point Likert-like scale, and five true/false questions regarding misconceptions about sleep. Outcomes included self-reported sleep problems among providers since the onset of the March 2020 Covid-19 surge in Mexico. Pre/post means were compared with paired t-tests using SPSS (V25) with significance set at p<0.05.

**Results:** Volunteer participants (N=23; 83% women; 52% nutritionists; 48% health providers) were recruited from the fall semester 2020 diabetes educator certificate program. Means with standard deviations showed significant learning for all sleep disorders following the training (OSA: 3.1±1.0 to 4.4±0.78; Insomnia: 3.2±0.85 to 4.3±0.82; RLS: 2.1±1.2 to 4.2±0.95; SSD: 2.7 ±1.1 to 4.4±0.72; CRD: 2.6±1.2 to 4.4±0.73; DD: 2.6±1.1 to 4.4±0.78, all p<.0001). The total pre- to post-scores (Range=0 to 30) for sleep disorders moved from 16.3±5.7 to 26.3±4.4, p<.0001. Participants demonstrated improved, but borderline significant findings regarding misconceptions about sleep from pre-to post-testing, p=.07. Of the 23 respondents, 18 (78%) reported sleep problems specific to the onset of the Covid-19 pandemic in Mexico. Of the 18 providers, 13 reported insomnia symptoms, while five indicated short sleep due to double shift work, anxiety and depression, or poor sleep quality.

**Conclusion:** Participants (78%) reported sleep problems; particularly insomnia associated with anxiety, depression, poor sleep quality and extended shift work since the onset of the Covid-19 pandemic. Findings are consistent with global studies of Covid-19 and sleep of health care workers. Online participants' significant learning for all sleep disorders was coherent with in-class learners (N=173). Pre-to-post analyses of misconceptions about sleep, particularly sleep needs for adults and that daytime sleep can make up for lack of nighttime sleep, however, were not significant for these learners compared to the in-class learning groups.

**Support (if any):** N/A

## 687

### CHANGES IN ADOLESCENT SLEEP HABITS DURING THE COVID-19 PANDEMIC

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**Introduction:** During the COVID-19 pandemic, adolescents have experienced significant lifestyle changes. With an increase in technological dependency and changes in school formats, sleep behaviors may be altered. As individuals with overweight or obesity (OWOB) already report higher rates of sleep issues, they may be particularly at risk during this time. However, to date, there are no data on changes in sleep behavior in adolescents with OWOB during the COVID-19 pandemic.

**Methods:** Participants included 10 adolescents with BMI ≥85th percentile (Mage=16.30 years, SDage=1.06; 60% male; 70% African American). Prior to the COVID-19 pandemic, participants completed sleep diaries twice per day for one week, noting caffeine intake, bedtime, naps, perceived sleep quality, and media use in bed. Participants then completed sleep diaries again during the COVID-19 pandemic. Five separate paired-samples t-tests assessed differences in sleep behaviors and quality.

**Results:** A paired-samples t-test demonstrated significantly earlier average bedtime before (M=11:20 PM, SD=55.16 minutes) than during (M=12:29 AM, SD=71.27 minutes) COVID-19 (t(9)=-3.0, p=0.015). A second paired-samples t-test demonstrated lower average media use in bed before (M=11.67, SD=10.97 minutes) than during (M=32.13, SD=27.28 minutes) the COVID-19 pandemic (t(9)=-2.3, p=0.050). No other significant differences were found.

**Conclusion:** Adolescents engaged in later bedtimes and increased media use in bed during the COVID-19 pandemic. This suggests adolescents' sleep schedules have shifted later during the COVID-19 school year, due to either later wake times associated with virtual schooling or disruption in typical daily schedule as a result of the pandemic. However, no differences were found regarding caffeine intake,