0613 COVID-19 IS ASSOCIATED WITH SHORTER SLEEP DURATION AMONG AMERICAN ADULTS

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Introduction: The COVID-19 pandemic has deteriorated sleep health in the United States (U.S.) and worldwide. Most studies that have examined the association between COVID-19 and sleep outcomes have used a non-probability sampling with potential sampling bias and limited generalizability. We examined the association between diagnosed COVID-19 and sleep health in a large representative sample of civilian adults aged ≥18 years in the U.S.

Methods: This study was based on data from the 2020 National Health Interview Survey (NHIS) of adults (n=17,636). Sleep health was captured by self-reported sleep quantity [very short (≤4 hours), short (≤5-6 hours), healthy (7-8 hours), or long (≥9 hours)] and sleep complaints (trouble falling and staying asleep; with responses ranging from never to every day) in the past 30 days. To account for correlated residuals among the endogenous sleep outcomes, generalized structural equation modeling (GSEM) was conducted with COVID-19 diagnosis as the predictor of interest. Other covariates (age, sex, race/ethnicity, education, employment, poverty level, marital status, birthplace, health insurance, region of residence, metropolitan areas, number of children and adults in the household, obesity, and sleep medication) were included in the models. NHIS complex probability sampling design was accounted for in descriptive and GSEM analyses.

Results: About 4.2% of adults had a positive COVID-19 diagnosis. Among them, 3.1% had very short sleep, 24.2% had short sleep, 59.9% had healthy sleep, and 12.8% had long sleep; 37.0% had trouble falling on some days; 10.9% most days, and 6.5% every day; and 33.7% had trouble staying asleep some days, 13.9% most days, and 6.6% every day. Findings from GSEM revealed that a history of COVID-19 almost doubled the odds of having short sleep (OR: 1.9; 95% CI: 1.3-3.4; p=0.032). No significant associations were found between COVID-19 and the other sleep outcomes.

Conclusion: Individuals with a COVID-19 diagnosis were more likely to report very short sleep, although they did not exhibit a greater likelihood of reporting more sleep complaints. Further research using longitudinal national data and examining environmental factors are needed to determine causality.

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0614 POLYSOMNOGRAPHIC MEASURES OF SLEEP ARCHITECTURAL DISRUPTION AND INCIDENT ATRIAL FIBRILLATION AND STROKE IN A LARGE CLINICAL COHORT

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Introduction: Although epidemiologic studies have identified associations of architectural disruptions in sleep and atrial fibrillation (AF), inconsistencies in results limit understanding of longitudinal AF and stroke development in clinic-based cohorts. We hypothesize lower arousal index as a biomarker of prolonged respiratory events and objective measures of sleep disruption increase incident AF and stroke.

Methods: Cleveland Clinic patients (age>18) who underwent polysomnogram (PSG) or split studies 11/27/2004-12/30/2015 were examined. Arousal index, total sleep time (TST), hours, sleep efficiency (SE, %), and wake after sleep onset (WASO, hours) were assessed as predictors of incident AF. Cox proportional hazard models were fit with time from sleep study to AF diagnosis. Secondary analyses were conducted in the subset of patients with baseline AF, with time from sleep study to stroke. Covariates included age, sex, race, body mass index (BMI, kg/m2), cardiovascular risk factors (hypertension, diabetes mellitus, hyperlipidemia), heart failure, coronary artery disease, myocardial infarction, coronary artery bypass grafting, chronic obstructive pulmonary disease, tobacco use, and use of anti-arrhythmic drugs. Data were censored at date of last follow up or the 5-year mark.

Results: The sample comprised 43,634 patients: age 51.7±14.5, 51.9% male, 74.5% White, and 7.1%(n=3,090) with AF. Of those without baseline AF, 1.176(2.9%) developed 5-year incident AF. Incident AF increased by 9% (HR=1.09, 95% CI=1.07-1.13) for each hour of lost TST. For every 10 percentage point decreased SE, incident AF increased by 7% (HR=1.07, 95% CI=1.04-1.11). For every hour increased WASO, incident AF increased by 14% (HR=1.14, 95% CI=1.07-1.21). Arousal index conferred no statistically detectable change of incident AF. In secondary analyses, any association of arousal index and incident stroke was attenuated after accounting for confounding comorbidities (omnibus p=0.055).

Conclusion: Objective measures of disrupted sleep architecture predicted incident AF in this clinical cohort. However, arousal index was not associated with AF development, nor stroke development in secondary analyses. Further investigation is needed to elucidate the role of arousal in SDB, perhaps with hierarchal models to clarify the degree to which confounders attenuate or accentuate any relationship.

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0615 ASSOCIATION BETWEEN AMBIENT LIGHT EXPOSURE AND SLEEP DURATION AMONG AMERICAN ADULTS FROM VARYING RACE/ETHNICITIES: FINDINGS FROM THE NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

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Introduction: One in three American adults are sleep deprived in the United States (US). Racial/ethnic minorities are more likely to experience shorter sleep duration than are whites. Light exposure is associated with sleep duration. However, whether this association is independent of individuals’ race/ethnicity has not been studied in a nationally representative sample of the US adult population. We examined associations between ambient light exposure and sleep duration and between race/ethnicity and sleep duration. We also assessed whether associations between light exposure and sleep duration are independent of participants’ race/ethnicity.