risk factors involved. The current study aimed to investigate the role of resilience in the association between changes in sleep and the subjective sleep quality (SSQ) in teens and young adults during COVID-19.

Methods: 289 teens (12-17 years old) and 294 young adults (18-25 years old) completed the Connor-Davidson Resilience Scale-10 and an adapted version of the Pittsburgh Sleep Quality Index online. Teens and young adults were each divided into a resilient and less resilient group. Hierarchical regression models were conducted to examine the unique contribution of weekdays sleep duration, sleep difficulties, and resilience to SSQ. Sleep duration, sleep difficulties and SSQ before COVID-19, and gender were entered as controls.

Results: Results show that in less resilient teens, changes in sleep onset difficulties (β=-.285, p=.003), nocturnal and early awakenings (β=-.218, p=.019), and weekdays sleep duration (β=.282, p=.001) significantly predicted SSQ and explained 36.5% of the variance. In less resilient young adults, changes in nightmares (β=-.309, p=.027) and sleep onset difficulties (β=-.263, p=.012) significantly predicted SSQ and explained 24.1% of the variance. In resilient teens, changes in weekdays sleep duration (β=.296, p=.007) significantly predicted SSQ and explained 20.1% of the variance. In resilient adults, changes in sleep onset difficulties (β=-.325, p=.001), nocturnal and early awakenings (β=-.374, p=.000), and weekdays sleep duration (β=.192, p=.009) significantly predicted SSQ and explained 46.0% of the variance.

Conclusion: Our results suggest that resilience appears to be a protecting factor in the impacts of sleep difficulties on sleep quality, but only in adolescents. Indeed, in young adults, sleep difficulties seem to be a more important factor modulating sleep quality than changes in sleep duration. These results underline the importance of focusing on the intrinsic characteristics of each population to better target interventions.

Support (if any):

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SLEEP IN HEAVY MARIJUANA USERS AFTER SMOKING DIFFERING THC DOSES COMPARED TO CONTROLS

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Introduction: Sleep disturbances are commonly reported by chronic marijuana (MJ) users and often identified as reasons for MJ relapse and/or other drug use. In the current study we compared the sleep architecture of 12 heavy MJ users to 11 normal controls.

Methods: Participants in the marijuana group met DSM-V criteria for cannabis use disorder but were otherwise healthy individuals. On the first study day, individuals smoked (1330-1400 hr) 11 puffs from a cannabis cigarette (7% THC). During the next four days, under varying experimental contingencies participants smoked an average of 4.58 (±3.48) day 1, 4.92 (±3.62) day 2, 4.75 (±3.52) day 3, and 4.17 (±3.56) day 4 puffs from cannabis cigarettes (7% THC). Their sleep was recorded the first four study nights using standard polysomnography procedures at Henry Ford Sleep and Research Center Hospital, under an 8-hr fixed time in bed (2300-0700 hr). Controls (n=11) had no history of illicit drug use or medical illness and were not shift workers. Neither group reported a history of sleep-related disorders. PSG recordings were scored using Rechtschaffen and Kales standard criteria. Sleep measures included sleep efficiency (total sleep time/time in bed * 100), latency to persistent sleep, and percent of time spent in Stage 1, 2, 3/4, and rapid eye movement (REM).

Results: PSGs taken across all four nights of inpatient stay showed that MJ users spent significantly more time in REM sleep compared to controls (means 24.91, 24.64, 24.42, 24.13 vs 18.81, p<.001) and less

time in stage 3/4 sleep (means 4.33, 4.79, 4.53, 6.91 vs 15.68, p<.001). MJ users showed reduced sleep efficiency compared to controls on night 4 (means 82.03 vs 90.32, p=0.039), and increased latency to persistent sleep on night 1 (means 6.04 vs 17.77, p=0.026).

Conclusion: These data show reduced sleep efficiency, lightened sleep (reduced stage 3/4), as well as an increased duration during REM sleep in heavy MJ users during decreased use, findings that are predictive of relapse in other drug abuse populations.

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BIDEN WON, BUT SLEEP LOST IN THE 2020 US ELECTION

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Introduction: The 2020 US Presidential Election captivated the US public resulting in record turnout. In the months preceding the elections COVID-19, racial injustice and the economic downturn had a daily impact on the lives of voters. In this research, we analyze the sleep behavior of Americans in the lead up to the Presidential Elections. We examine specifically the nights of the Presidential and Vice-Presidential Debates and Election Night.

Methods: We examined sleep data from the PSG-validated SleepScore Mobile Application, which uses a non-contact sonar-based method to objectively capture sleep-related metrics and self-reported lifestyle data. The data set included 123,723 nights (5,967 users residing in the US, aged 18-85, mean age: 46.6 +/- 16.7 years, 52.3% female). Data from September 1st until November 3rd were included. This covered the nights of the Presidential Debates (Tuesday 09/29/2020 and Thursday 10/22/2020) and the Vice-Presidential Debate (Wednesday 10/07/2020). Election night was Tuesday, November 3, 2020. Self-reported stress level (0-24 scale) and alcohol consumption (0-9 drinks) were measured using digital slider scales. Mixed Effect Modelling was used for analysis.

Results: The night of the 1st Presidential debate saw a change in sleep-related behavior with users going to bed 9.5 minutes later, as compared to a regular Tuesday Night. This resulted in a decrease in both TST (11.5 mins, p<0.001) and TIB (11.8 mins, p<0.001). Interestingly, neither the the 2nd Presidential Debate, nor the Vice Presidential Debate resulted in significant differences in sleep behavior. On election night users went to bed 14.5 (p<0.001) min later on average, as compared to a normal Tuesday Night. This resulted in a decrease in both TIB (24.3 mins, p<0.001) and TST (19.2 mins, p<0.001). Self-report data showed a 13.3% (p<0.001) increase in stress level on election night and 34.4% (p<0.001) increase alcohol consumption Importantly, election night was two nights after the end of Daylight Savings Time (DST), Sunday, November 1st.

Conclusion: This analysis shows the 2020 US Presidential election negatively impacted US population sleep. The impact was most pronounced on election night, but also observed following the first Presidential debate. The effect of DST on these findings is unknown but surmised to be meaningful.

Support (if any):

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COMPARING SLEEP AMOUNT AND QUALITY FOR PEOPLE WORKING FROM HOME WITH AND WITHOUT MINOR DEPENDENTS DURING THE COVID-19 PANDEMIC

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Introduction: The global pandemic due to the novel coronavirus (COVID-19) has had unprecedented effects on society, in particular for those who are also working with children in the household. The aim of this analysis was to evaluate sleep amount and sleep quality during the COVID-19 pandemic compared to before COVID-19 for those working from home with minor household dependents.

Methods: We developed the "Anonymous Survey on Confinement during the COVID-19 Pandemic", a national survey for individuals ≥18 years of age hosted on the Penn Medicine Clinical Research website from May 16th to November 11th, 2020. This 200 question survey captured demographics and multiple dimensions of health and well-being, including stress, sleep, eating behaviors, and coping activities. Respondents who indicated they were working from home were stratified by whether they were living with ≥1 minor dependent vs no dependents. Separate ordinal logistic regression models were used to evaluate associations between living with a minor dependent and sleep amount (less, same, more) and disturbed quality (none, less, same, more) during, compared to before, COVID-19 controlled for age, sex, ethnicity, and annual income.

Results: A total of 232 respondents (n=182 no dependents, n=50 dependents, 84.9% Caucasian) reported working from home, the majority of which had been in confinement (95.7%). Respondents with dependents were younger (mean age 38.9±13.5 vs 47.4±18.0, p=0.002) and mostly female (86% vs 76.9%, p=0.03). On average, reported days worked/week (3.5±2.4 days) and hours worked/day (5.5±4.17 hours) were similar regardless of dependents. Comparing those without to those with minor dependents, there were no significant differences in log odds of getting enough sleep (β=-0.38, p=0.25) or worse sleep quality (β=0.41, p=0.22) during the COVID-19 pandemic compared to before COVID-19. Respondents with dependents reported a higher log odds of taking longer to fall asleep during COVID-19 (β=0.71, p=0.045), and higher stress (β=-0.65, p=0.04).

Conclusion: In this mostly Caucasian female sample of people working from home, having minor dependents in the household did not significantly impact sleep amount or quality compared to no minor household dependents. However, respondents with dependents reported longer time to fall asleep and were more stressed.

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SLEEP SCHEDULE CHANGES DURING THE COVID-19 PANDEMIC: RELATIONS TO CIRCADIAN PREFERENCES

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Introduction: The COVID-19 pandemic profoundly altered individual lifestyles, reducing commutes and restricting nocturnal in-person socialization. We examine whether the stay-at-home orders and the attendant increase in sleep scheduling autonomy, impact bedtimes and waketimes and influence circadian preference alignment.

Methods: We compared bedtimes and wake times during the 4 weeks before and after a March 19th, 2020 stay-at-home order announcement. Data from the PSG-validated SleepScore Mobile Application were analyzed. Users answering a circadian preference question (a five-point Likert scale ranging from "definitely a morning person" to "definitely an evening person") who also recorded 10 or more nights of sleep both before and after the March 19th announcement were included in the analysis. The data set included 69,656 total nights of sleep from 1,487 users: 51.0% female, age range 18 to 91 years (mean = 50.3 +/- 30.3). Differences in average bedtime and wake time before and after March

19th were compared using paired sample t-tests. Associations between circadian preference and changes in bedtime and wake time were examined using Spearman's correlation coefficient.

Results: All five circadian preference groups showed a significant delay in both bedtime and wake time (p < .01) after the March 19th announcement. Greatest delays were observed in those reporting the strongest eveningness preference, with median bedtimes being 17 minutes later and wake times 33 minutes later. Delays were smallest in users with the strongest morningness preference, with bedtimes being 7 minutes later and wake times 12 minutes later. Wake time delay was significantly greater than bedtime delay for evening types (p < 0.001) but not morning types. Eveningness preference was associated with greater bedtime delay (Spearman correlation = 0.098, p <0.001) and wake time delay (Spearman correlation= 0.178, p < 0.000001).

Conclusion: The stay-at-home order provided many individuals more freedom to choose their sleep schedule. This increased sleep scheduling autonomy was associated with delayed bedtimes and wake times for each circadian preference group, with the evening-types exhibiting the greatest shift towards a later sleep schedule. We conclude that stay-at-home orders allowed evening types to choose sleep schedules more aligned with their natural tendencies.

Support (if any):

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SOCIAL INTEGRATION AND SLEEP QUALITY DURING THE COVID-19 PANDEMIC: PROSPECTIVE EVIDENCE FROM A STUDY OF RETIRED OLDER ADULTS

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Introduction: Growing evidence has documented the adverse impact of the global coronavirus pandemic on sleep quality. Older adults may be especially susceptible to declines in sleep quality for multiple reasons, including their elevated risk of social isolation and loneliness during the pandemic. Given the adverse health consequences of poor sleep, there is a need to identify resilience factors that help protect older adults against decreased sleep quality. Social integration is a plausible resilience factor because involvement in a broad range of social relationships is thought to promote psychological well-being (e.g., meaning, purpose in life), as well as reduce the intensity and duration of negative psychological states. Social integration may also assume increased importance during the coronavirus pandemic because of normative declines in overall social contact. This prospective study assessed the impact of the coronavirus pandemic on older adults' sleep quality and tested whether social integration moderated the impact of the pandemic on sleep quality.

Methods: A sample of 115 retired older adults (mean age = 68.6, 58% female, 89% white) completed self-report assessments of their social integration (number of roles on Cohen's Social Network Index) and sleep quality (global score on Pittsburgh Sleep Quality Index) before and after the onset of the coronavirus pandemic (mean duration of follow-up = 2.3 years).

Results: Multilevel analyses indicated that social integration moderated the impact of the coronavirus pandemic on sleep quality; there was no main effect of time. Older adults with low social integration had reduced sleep quality from Time 1 to Time 2 (b=.94, p=.02), whereas older adults with high social integration showed no changes in sleep quality over time (b=-.38, p=.37).

Conclusion: Broader social networks confer resilience against pandemic-related declines in sleep quality among older adults. The level of social integration should be addressed when studying or