

Introduction: The novel Coronavirus has caused major disruptions to sleep and cognitive function of many individuals. The present study evaluated the degree to which daytime cognitive dysfunction may be related to worsening sleep.

Methods: Data from adults aged 18 and older in the 2020 Coronavirus and Impact on Dreams (CovID) study were used. Individuals were asked “how would you rate your sleep quality overall” and answered with “very good, fairly good, fairly bad, or very bad.” Subjects were asked if it takes “30 minutes or more to fall asleep” and answered with how frequently that happened. In addition, participants were asked how often they wake up during the night. Participants were then asked how much they think their sleep problems have contributed to daytime functioning and answered on a scale of 0 to 5, from “not at all” to “very much,” respectively.

Results: 46% of the sample did not report problems with daytime cognitive function, while 33%, 12%, and 9% reported mild, moderate, and severe problems, respectively. Those who reported that they have kept a regular schedule during the pandemic were 83% less likely to report greater daytime cognitive dysfunction (95%CI:0.08,0.37, $p<0.0005$). Those who indicated that overall their sleep worsened or improved did not demonstrate a difference in likelihood of daytime cognitive problems. Regarding specific sleep experiences, those who reported more problems falling asleep due to the pandemic were 8.2 times more likely to report daytime cognitive dysfunction (95%CI:3.53,19.07, $p<0.0005$) and those who reported more problems with morning awakenings were 5.7 times more likely (95%CI:2.10,15.56, $p<0.001$). Those who reported that they were sleepier as a result of the pandemic were 9.3 times as likely to report daytime cognitive dysfunction (95%CI:3.53,24.46, $p<0.0005$) and those who reported taking more naps were 4.4 times more likely (95%CI:1.90,10.40, $p<0.001$).

Conclusion: In general, people who reported increased sleepiness, a less regular schedule, more insomnia, and more napping were more likely to experience daytime cognitive dysfunction during the COVID-19 pandemic.

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204

CHANGES IN PHYSICAL ACTIVITY DURING THE COVID-19 PANDEMIC ASSOCIATED WITH CHANGES IN SLEEP

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Introduction: The COVID-19 global pandemic has likely led to changes in physical activity as behavioral patterns were disrupted. This is important because sleep and physical activity are interrelated and promote health, and well-being. This study examined whether changes to physical activity were related to changes to sleep health as a result of the COVID-19 pandemic.

Methods: A sample of N=419 US adults completed online surveys about sleep and COVID-19 experiences. Participants were asked to estimate the number of minutes per day they engaged in physical activity during the pandemic, as well as before. These were subtracted from each other, and a difference score was computed. Then, responses were categorized as no change (≤ 15 mins difference), 16-45 minutes more or less activity, or 46+ minutes more or less activity (5 categories total). Outcome variables included the degree to which participants believed that due to the pandemic, they experienced (1) more schedule regularity, (2) better sleep, (3) worse sleep, (4) more difficulty falling asleep, (5) more difficulty maintaining sleep, (6) more sleepiness, and (7) more napping. Ordinal regressions were adjusted for age, and sex.

Results: Those who increased their activity by over 45 minutes per day reported that they were less likely to experience more daytime sleepiness (oOR=0.28, $p<0.02$). Those who decreased their activity by over 45 minutes per day reported that they were more likely to experience worse sleep (oOR=2.38, $p<0.01$) and less likely to experience a more regular schedule (oOR=0.37, $p<0.003$) than prior to the pandemic.

Conclusion: Overall, those who increased their physical activity since the beginning of the pandemic reported less daytime sleepiness; and those who decreased their physical activity reported worse sleep experiences and a more irregular schedule. The relationship between physical activity and sleep during the pandemic may be bidirectional.

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205

CHANGES IN SLEEP DUE TO COVID PANDEMIC ASSOCIATED WITH CHANGES TO DIETARY PATTERNS

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Introduction: The COVID-19 pandemic has affected sleep and diet for many people. The present study sought to examine potential associations between changes to sleep and eating habits during the COVID-19 pandemic.

Methods: A sample of N=419 US adults completed online surveys about sleep and COVID-19 experiences. Questions for diet asked, “since quarantine: I’m eating healthier, eating more processed foods, home-cooked meals and more regularly,” “I’m enjoying food in quarantine and I’m struggling with overeating in quarantine.” Sleep questions asked “since quarantine: I have managed to keep a regular sleep-wake schedule, my sleep has improved, I’m struggling to fall asleep, I’m waking up more during the night, I’m more sleepy during the day and I’m taking more naps during the day.” Answers were reported on a 4-point scale ranging from “strongly disagree to strongly agree.” Ordinal logistic regressions were used, adjusted for age and sex and examined each dietary variable as ordinal outcome and each sleep variable as predictor.

Results: Those who report that they kept a more regular schedule were more likely to report eating healthier (oOR=3.13, $p=0.007$), eating more home-cooked meals (oOR=3.19, $p=0.005$), and less likely to be eating more processed foods (oOR=0.39, $p=0.02$), struggle with overeating (oOR=0.39, $p=0.02$) or undereating (oOR=0.30, $p=0.004$) or snacking (oOR=0.25, $p=0.001$). Those reporting more difficulty falling asleep were less likely to be eating healthier (oOR=0.25, $p=0.002$) and more likely to be eating more processed foods (oOR=3.07, $p=0.009$) and snacking (oOR=2.36, $p=0.04$). Those reporting more difficulty with awakenings were less likely to report eating healthier (oOR=0.34, $p=0.03$) and more likely to report eating more processed foods (oOR=4.52, $p=0.001$). Those with more sleepiness were less likely to report eating healthier (oOR=0.29, $p=0.01$) and more homecooked meals (oOR=0.40, $p=0.046$) and more likely to report eating more processed foods (oOR=6.42, $p<0.0005$), overeating (oOR=3.63, $p=0.01$) and snacking (oOR=5.81, $p=0.001$).

Conclusion: Research studying psychological, behavioral and environmental factors that are contributing to changes in sleep and dietary patterns is especially important during a pandemic that has forced people into changes that they may not have been prepared for and which may result in long-term health outcomes.

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