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Objective: Sleep deprivation and depressive symptoms have been shown to negatively impact cognitive function within older adult populations (Gilley, 2022; Donovan et al., 2016). However, there is minimal research on interactions between sleep disturbance and depressive symptoms in relation to their shared impact on cognitive impairment. The purpose of this study is to examine possible interactions between sleep disorders and depression and their relationship with cognition among relatively good functioning and healthy older adults.

Participants and Methods: The sample was obtained from the Memory and Aging Project (Rush Alzheimer's Disease Center, Rush University, 2019) and consisted of 3,345 community dwelling older adults. The study analyzed data from 2552 women (76.3%) and 1093 men (23.7%). The average age of participants was 80 years and ranged from 45 to 98 years old. Measures used included the Berlin Questionnaire (risk for sleep apnea), Center for Epidemiological Studies Depression Scale (CES-D; depression), and a neuropsychological battery (visuospatial ability/perceptual reasoning and processing speed).

Results: ANOVA analyses exhibited a significant main effect of depression on visuospatial ability/perceptual reasoning ($p < .001$), processing speed ($p < .001$), and semantic memory ($p < .001$). No significant main effect was found for sleep apnea on these cognitive domains. However, when sleep apnea was analyzed between those with any depressive symptoms versus those without, significant interactions were found for visuospatial ability/perceptual reasoning ($p = .027$), processing speed ($p < .001$), and semantic memory ($p = .016$). Sleep apnea symptoms had a greater detrimental effect on visuospatial skills and perceptual reasoning ($F=4.90$; $p=.027$) only when any depression symptom is present. In contrast, there was a steeper decline of processing speed when only depressive symptoms were present apart from sleep apnea symptoms ($F=10.34$; $p = .001$). Similarly, depressive symptoms had a greater negative effect on semantic memory for older adults who reported no sleep apnea symptoms compare to those who did ($F=5.83$, $p=.016$).

Conclusions: The current study indicated that while sleep apnea was negatively related to several cognitive domains, the impact became greater with the presence of depression on

visuospatial skills and perceptual reasoning among older adults. However, the detrimental impact of sleep apnea was somewhat less with the presence of depression for processing speed and semantic memory. This may be due to likely higher endorsements of depressive symptoms compared to sleep apnea symptoms within the study sample. These findings suggest that there are differential interactive effects of sleep impairment and depressive symptoms on cognitive domains among older adults. Considering the relationship that exists between depression and increased disease burden among older adults, it is crucial for clinicians to also take sleep behaviors into account when examining and treating their patients. Clinicians should be mindful of their older patient's sleep health and depression measures when cognitive declines are suspected. They also suggest that cognitive performance may be improved with treating any symptoms of sleep apnea and depression in older adults.

Categories: Sleep and Sleep Disorders

Keyword 1: sleep

Keyword 2: depression

Keyword 3: cognitive functioning

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69 Poor Sleep is Associated with Bias for Negative Sleep-Related

Images: Development of the Sleep Approach-Avoidance Task (SAAT)

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Objective: Insomnia affects 30–45% of the world population, is related to mortality (i.e., auto accidents and job-related accidents), and is related to mood and affect disorders such as anxiety and depression. Better understanding of insomnia via increased research will decrease the burden on insomnia. The neurocognitive

model of sleep proposes that conditioned somatic and cognitive hyperarousal develop in response to repeated pairings of sleep-related stimuli with insomnia-related wakefulness. The purpose of this study was to examine the neurocognitive model of sleep using a novel laboratory paradigm, the Sleep Approach Avoidance Task (SAAT). It was hypothesized that individuals who report symptoms of insomnia will display a bias for negative sleep-related images from the SAAT, which is presumably a reflection of cognitive, behavioral and physiological processes associated with hyperarousal. It was also hypothesized that participants who report poor sleep would provide different subjective ratings for negative images (i.e., stronger valence and arousal) than individuals who reported better sleep.

Participants and Methods: An initial sample of 66 healthy college-aged participants completed the Insomnia Severity Index (ISI), the Pittsburgh Sleep Quality Index (PSQI) the Dysfunctional Attitudes and Beliefs about Sleep (DBAS) scale and the Epworth Sleepiness Scale (ESS). Participants also completed the SAAT. The SAAT was developed to assess sleep-related bias in adults. The SAAT is a visual, joystick controlled reaction time task that measures implicit bias for positive and negative sleep-related images. At the end of the task the participants are also asked to rate each image along three dimensions included valence, arousal and dominance.

Results: There was a positive correlation between the SAAT and the ISI [$r(61) = .30, p = .01$], indicating that symptoms of insomnia are related to negative approach-related bias for sleep-related images. No other correlations were observed between the SAAT and self-report sleep measures. With regard to rating of images, higher dominance ratings for negative images were correlated with the SAAT [$r(62) = .24, p = .03$], which indicates that the approach bias for negative images is associated with "being in control." Multiple linear regression was used to test if ISI scores and dominance ratings for negative images significantly predicted SAAT bias scores. The overall regression was statistically significant [$r^2 = .13, F(2, 58) = 4.15, p = .02$]. ISI scores significantly predicted SAAT scores ($\beta = .27, p = .04$), whereas dominance ratings for negative images did not significantly predict SAAT scores ($\beta = .20, p = .11$). Exploratory correlational analyses were also completed for ratings of images and other sleep self-report measures. Valence ratings for

positive sleep-related images were positively correlated with the ESS [$r(64) = .36, p = .01$], whereas valence ratings for negative sleep-related images were negatively correlated with the ESS [$r(64) = -.24, p = .03$].

Conclusions: Hypotheses were partially supported with the ISI being the only self-report measure associated with negative bias for sleep-related images. While ratings of dominance are associated with bias for negative sleep-related images, these ratings do not provide unique variance. These findings indicate a cognitive processing bias for sleep-related stimuli among young adult poor sleepers. Limitations, implications for assessment and intervention are discussed.

Categories: Sleep and Sleep Disorders

Keyword 1: sleep

Keyword 2: sleep disorders

Keyword 3: emotional processes

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70 Daily Routine and Psychological Resilience.

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Objective: Resiliency has been shown to attenuate and even protect against cognitive impairment from mental and physical stressors. Recently, it has been demonstrated that individuals who score high in psychological resilience tend to have less impairment following a mTBI. The COVID-19 pandemic proved to be an uncertain time for many. Periods of isolation, unemployment, and of course, sickness, meant more time at home. The partial or complete breakdown of an individual's day-to-day routine paired with the stress of the pandemic has reinforced the need for psychological resilience. This analysis investigates the relationship between self-reported routine adherence and an individual's corresponding psychological resilience. We hypothesize that individuals who maintained a structured daily routine during the pandemic will have higher levels of