

whether average afternoon/evening activity, average evening pain [0 (no pain)–100 (most intense pain imaginable)], or their interaction predicted polysomnographic sleep onset latency (SOL), wake after sleep onset (WASO), sleep efficiency (SE), %stage 1, %stage 2, %stage 3, and %rem, controlling for age, body mass index, average individual bedtime, time in bed, and sleep or pain medication usage.

**Results:** Greater afternoon activity from 12:00-15:00 was independently associated with lower SE ( $B = -.08, p = .01$ ), greater WASO ( $B = .45, p < .001$ ), and greater %stage 1 ( $B = .04, p < .01$ ). Pain intensity interacted with physical activity from 12:00-15:00 such that the association between physical activity and higher WASO ( $p = .05$ ) and greater %stage 1 ( $p < .01$ ) was stronger for individuals with higher pain. Pain intensity and activity from 15:00-18:00, and 18:00-21:00 were not associated with sleep outcomes.

**Conclusion:** Our results suggest greater afternoon activity is associated with greater polysomnographic sleep fragmentation and greater %stage 1 sleep in FM, and these relationships are stronger for individuals with higher pain. These relationships are consistent with activity pacing recommendations for chronic pain and suggest pacing in the afternoon may be important for good sleep in FM. However, future research examining causal pathways linking physical activity levels and timing, pain, and sleep is needed.

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### COPING STRATEGIES MODERATE THE EFFECT OF PERCEIVED STRESS ON SLEEP AND HEALTH IN OLDER ADULTS DURING THE COVID-19 PANDEMIC

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**Introduction:** The COVID-19 pandemic is an enormous stressor that can impact various dimensions of health, including sleep health. Older adults may be particularly vulnerable. Coping strategies to manage stress can also impact health outcomes by modifying the relationships between perceived stress and health outcomes. This study examined concurrent and longitudinal associations between perceived stress and sleep health, mental health, physical health, and overall perceived health outcomes among older adults. We also examined whether coping strategies moderate these associations.

**Methods:** Older adults ( $n = 115$ ; Mage = 68.62, 58.3% female) reported perceived stress (PSS), coping strategies (Brief COPE), global sleep quality (PSQI global sleep quality score and dichotomous good/poor sleep quality), depressive symptoms (CES-D), and perceived mental, physical, and overall health (RAND-12) before and during the COVID-19 pandemic.

**Results:** The number of individuals with poor sleep quality was greater during the COVID-19 pandemic than before (50% vs. 36.5%). Participants also reported poorer physical health during the COVID-19 pandemic than before. Hierarchical linear regression and hierarchical logistic regression revealed that higher perceived stress was cross-sectionally associated with poorer sleep (e.g., higher total PSQI score and dichotomous sleep quality category). Higher perceived stress was associated with worse depressive symptoms and global mental health concurrently and longitudinally. Coping strategies moderated the relationships between perceived stress and physical health and overall perceived health. For example, higher perceived stress was associated with poorer overall perceived health for those who have lower

problem-focused coping—but not for those with higher problem-focused coping—both concurrently and longitudinally.

**Conclusion:** Perceived stress influences cross-sectional and longitudinal measures of sleep health and general health among older adults during the COVID-19 pandemic. Coping strategies can moderate the effects of perceived stress on health outcomes. Older adults may benefit from prevention and intervention strategies targeting stress management and problem-focused coping strategies.

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### THE ASSOCIATION BETWEEN SLEEP AND PSYCHOLOGICAL DISTRESS AMONG NEW YORK HEALTHCARE WORKERS DURING THE COVID-19 PANDEMIC

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**Introduction:** Healthcare workers (HCWs) treating patients with COVID-19 report high rates of acute stress, depressive and anxiety symptoms. We examined whether sleep disturbances were associated with psychological distress in New York City (NYC) HCWs during the initial peak of COVID-19 in-patient admissions (April 9 - May 11, 2020).

**Methods:** HCWs (physicians, nurses, and advanced practice providers) completed a web-based survey which screened for acute stress (4-item Primary Care PTSD screen), depressive symptoms (Patient Health Questionnaire-2), and anxiety (2-item Generalized Anxiety Disorder scale). Past week insomnia symptoms were assessed with a modified item from the Insomnia Severity Index (5-point Likert Scale: none, mild, moderate, severe, very severe). Insomnia was defined as having “moderate, severe, or very severe” symptoms. Short sleep (SS) was defined as self-reported sleep duration <6 hours per day. Poisson regression analyses predicting psychological distress from SS and, separately insomnia, adjusting for age, gender, race/ethnicity, clinical setting (COVID-focused or not COVID-focused), physician vs. non-physician status, and redeployment status, were performed.

**Results:** Data included 813 HCWs (80.6% female, 59.0% White, 75.6% worked in a COVID-focused setting). Mean sleep duration was  $5.79 \pm 1.22$  hours/night. The prevalence of SS and insomnia were 38.8% and 72.8%; the prevalence of acute stress, depressive symptoms, and anxiety were 57.9%, 33.8% and 48.2%, respectively. Having SS, vs. not was associated with acute stress (adjusted prevalence ratio [PR]: 1.21, 95% CI: 1.07, 1.31), depressive symptoms (PR: 1.65, 95% CI: 1.35, 2.02), and anxiety (PR: 1.51, 95% CI: 1.30, 1.74). Presence of insomnia symptoms vs. “none or mild” was associated with acute stress (PR: 1.92, 95% CI: 1.57, 2.34), depressive symptoms (PR: 3.13, 95% CI: 2.16, 4.52), and anxiety (PR: 2.40, 95% CI: 1.86, 3.11).

**Conclusion:** Among NYC HCWs, sleep disturbances, including SS and insomnia symptoms during COVID-19 are common. In our study, SS and insomnia were associated with acute stress, depressive symptoms, and anxiety in HCWs, however further research on whether a bidirectional relationship exists between sleep and psychological distress during the COVID19 pandemic are still needed.

**Support (if any):**