

and total sleep time ( $\downarrow 6.4\%$ ), and more awakenings ( $\uparrow 12.4\%$ ) compared with the subsequent night ( $p < 0.05$ ). Both groups also had less non-rapid-eye-movement (NREM) ( $\downarrow 4.9\%$ ) and REM ( $\downarrow 18.8\%$ ) sleep on the first night. Girls with insomnia had lower amounts of REM sleep than boys with insomnia on both nights ( $p < 0.05$ ). Both groups perceived higher levels of pre-sleep somatic ( $\uparrow 10.3\%$ ) and total ( $\uparrow 7.2\%$ ) arousal on the first night compared to the subsequent night ( $p < 0.05$ ). For cognitive arousal, there was a night-group-sex interaction effect: while controls showed no changes between the two nights, boys with insomnia reported significantly lower pre-sleep cognitive arousal levels on the subsequent laboratory night compared to the first night ( $\downarrow 32.9\%$ ), whereas cognitive arousal levels remained elevated on the subsequent night in girls with insomnia ( $p < 0.05$ ).

**Conclusion:** Sleeping for the first time in the laboratory leads to greater pre-sleep arousal and disrupts sleep in adolescents with and without insomnia symptoms. Longitudinal studies are needed to examine the female vulnerability in the manifestation of stress-related hyperarousal, particularly in the context of insomnia development during adolescence.

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## 0237

### SLEEP REACTIVITY PROSPECTIVELY PREDICTS DISTRESS REACTIONS TO THE COVID-19 PANDEMIC 3-4 YEARS LATER

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**Introduction:** The 2019 coronavirus disease (COVID-19) pandemic is a protracted stressor with far-reaching effects on daily life. Although most individuals exhibit resilience in the wake of adversity, it is not clear which characteristics reliably predict resilience versus longstanding distress. It is vital to delineate predictors of pandemic-related distress to highlight modifiable risk factors that can be targeted to enhance psychological resilience. Sleep reactivity may be an important predictor of pandemic reactions because it reflects a vulnerability to experience pronounced sleep disturbances in response to stress, which serve as barriers to healthy adjustment to adversity. Therefore, this study tested sleep reactivity as a prospective predictor of pandemic-related distress.

**Methods:** Participants were recruited from a previous randomized controlled trial (RCT) comparing self-guided digital CBT-I against a sleep education control in treating insomnia and preventing depression. Participants in the RCT were enrolled between 2016-2017 and were eligible for this follow-up study conducted between April and May 2020 ( $N = 208$ ; dCBT-I:  $n = 102$ ; control:  $n = 106$ ). Pre-treatment sleep reactivity was measured in 2016-2017 (T1) using the Ford Insomnia Response to Stress Test (FIRST). COVID-19 distress was measured in April 2020 (T2) using the Impact of Events Scale (IES) and Quick Inventory of Depressive Symptomatology (QIDS). All analyses controlled for treatment condition and COVID-19 impact.

**Results:** T1 FIRST predicted T2 IES ( $b = 0.29, + 0.14 \text{ SE}, p < .05$ ) and QIDS ( $b = 0.16, + 0.04 \text{ SE}, p < .001$ ), such that higher sleep reactivity pre-pandemic predicted more severe stress responses and depressive symptoms during the pandemic 3-4 years later. Exploratory analyses revealed T1 FIRST was a predictor of the IES subscales arousal and intrusions ( $bs = 0.02, + 0.01 \text{ SEs}, ps < .05$ ), but not avoidance.

**Conclusion:** These findings build on evidence that sleep reactivity prospectively predicts reactions to trauma and demonstrate its predictive utility generalizes to pandemic responses. Sleep reactivity is a modifiable risk factor that may be targeted using cognitive-behavioral or mindfulness-based approaches, and thus may offer a new pathway to resilience.

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## 0238

### PERCEIVED CHILDHOOD NEIGHBORHOOD SAFETY AND SLEEP HEALTH DURING ADULTHOOD

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**Introduction:** Neighborhood safety has been cross-sectionally associated with sleep health at different life stages. However, few studies have investigated childhood neighborhood safety and adulthood sleep despite the possibility that childhood neighborhood safety may serve as a modifiable target for primordial prevention of poor sleep health.

**Methods:** Using data from 1,611 Black/African-American women enrolled in the Study of Environment, Lifestyle and Fibroids, we investigated associations between perceived childhood neighborhood safety and adulthood sleep. Participants reported safety of their childhood neighborhoods as unsafe vs. safe at ages 5, 10, and 15 years. Participants also self-reported current (ages 23-35 years) sleep duration and quality (i.e., frequently wake feeling unrested [ $\geq 4$  days/week] and frequent insomnia symptoms [ $\geq 15$  days/month of difficulty falling or staying asleep]). Adjusting for childhood socioeconomic characteristics, log binomial models estimated prevalence ratios (PRs) and 95% confidence intervals (CIs). For perceived safety at ages 10 and 15 years, we applied inverse probability weights to models to adjust for perceived neighborhood safety at prior ages.

**Results:** Mean age  $\pm$  standard deviation was  $29 \pm 3.5$  years. Prevalence of residence in a childhood neighborhood perceived as unsafe increased with age (Age 5- 20%, Age 10- 22%, Age 15- 31%), and 17% reported an unsafe neighborhood at every age. Both short sleep duration ( $< 7$  hours) and frequently waking feeling unrested during adulthood were reported by approximately 60% of women, and 10% reported frequent insomnia symptoms. Participants in perceived unsafe vs. safe neighborhoods at every age were more likely to frequently wake feeling unrested as adults (PR=1.12 [95% CI: 1.00-1.25]). Perceived unsafe neighborhood at ages 5 and 15 years was associated with frequent insomnia symptoms and frequently waking feeling unrested, respectively. Perceived unsafe neighborhood at age 10 years was marginally associated with a higher prevalence of both frequently waking feeling unrested (PR=1.11 [0.98-1.27]) and frequent insomnia symptoms (PR=1.58 [0.99-2.52]) during adulthood.

**Conclusion:** Perceived unsafe neighborhood during childhood was associated with poorer sleep during adulthood among a cohort of young Black women.

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## 0239

### A LATENT PROFILE ANALYSIS OF ACTIGRAPHIC SLEEP AND PHYSICAL ACTIVITY MEASURES AMONG CAMBODIAN-AMERICANS: RELATIONSHIP WITH SPECIFIC TRAUMA SYMPTOMS

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**Introduction:** Sleep and physical activity are related to psychological trauma. Less is known about how individuals with distinct sleep and activity profiles differ on specific clusters of trauma symptoms. Cambodian-Americans who survived the Pol Pot genocide experienced severe collective trauma. This analysis explored group differences between sleep/activity profiles on specific trauma symptoms among Cambodian-Americans.

**Methods:** Participants in a diabetes prevention trial for Cambodian-Americans (NCT02502929) met inclusion criteria for depression and high diabetes risk (but did not have diabetes). They wore wrist actigraphy (sleep) and hip actigraphy (physical activity) for 7 days ( $\geq 3$  days to be included) and completed the 16-item trauma symptom scale of the Harvard Trauma Questionnaire (HTQ; N=166). Latent Profile Analyses identified profiles using 3 mean actigraphic sleep and activity variables: total nightly sleep time, sleep maintenance efficiency, and minutes in moderate-vigorous physical activity. ANOVAs explored differences between sleep/activity profiles on the HTQ, specifically total scores and the "Avoidance/Numbing" and "Re-experiencing/Hyperarousal" subscales. Models were adjusted for psychotropic medication use.

**Results:** Participants were predominantly women (79%), mean age 55.3, with elevated trauma symptoms (17% were higher than 2.5 cutpoint; mean $\pm$ SD= 1.90 $\pm$ 0.61). Sleep and physical activity patterns yielded a BIC best fit with 3 sleep/activity profiles: Inactive Poor Sleepers (n=30, 18%), Highly Active Short Sleepers (n=35, 21%), and Moderately Active Good Sleepers (n=101, 61%). Differences were observed between profiles on the HTQ total score (p=0.03). Tukey's post hoc test revealed that Inactive Poor Sleepers exhibited greater HTQ scores than Highly Active Short Sleepers (p<0.05), but did not differ from Moderately Active Good Sleepers. There was also a significant difference between profiles in the Avoidance/Numbing subscale (p=0.01); Inactive Poor Sleepers had higher Avoidance/Numbing than Highly Active Short Sleepers (p<0.05, Cohen's d: 0.47). There were no differences between profiles on the Re-experiencing/Hyperarousal subscale (p=.09).

**Conclusion:** Individuals with contrasting actigraphic sleep/activity profiles differed on trauma symptoms. Inactive Poor Sleepers may

benefit from specific interventions for Avoidance/Numbing symptoms. Future analyses will evaluate how changes in sleep/activity profiles are longitudinally related to psychological health and diabetes risk following interventions.

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## 0240

### INVESTIGATING THE POTENTIAL FOR ACTIGRAPHY AS A COMPLEMENTARY CLINICAL TOOL FOR EVALUATION OF SLEEP IN PATIENTS WITH RHEUMATOID ARTHRITIS

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**Introduction:** Poor sleep is a common complaint among patients with rheumatoid arthritis (RA), but few actively recognize the problem or discuss it with their rheumatologist during the clinical visit. Challenges to identification of sleep issues include a lack of standardized sleep measures used within clinical care and lack of confidence on the part of patients' articulating how sleep is affected by RA. Clinical management is further complicated by insufficient evidence between sleep quality and disease symptomology. The objective of this study was to identify correlations between sleep measures assessed through self-report and actigraphy with disease activity for patients with RA.

**Methods:** In a prospective, cross-sectional study, a sample of 15 participants diagnosed with RA were recruited through convenience sampling. Consenting participants self-reported sleep quality and disease activity using Pittsburgh Sleep Quality Index (PSQI) and Routine Assessment of Patient Index Data 3 (RAPID-3). Participants' sleep quality was also measured using actigraphy which monitors wrist movement by wearing a watch. Daily actigraphy measures of sleep efficiency, latency, and fragmentation were averaged over 6 nights. Actigraphy measures were correlated to the PSQI and RAPID-3 through Spearman correlations.

**Results:** The sample was mostly Caucasian women with an average age of 55 years, generally reflective of the population with RA. The results demonstrated weak, nonsignificant correlations between self-reported measures of sleep and average sleep efficiency (0.12, p=0.66), latency (0.10, p=0.72), and fragmentation (-0.13, p=10). Additionally, weak, nonsignificant correlations existed between disease activity and average sleep efficiency (0.09, p=0.75), latency (0.35, p=0.19), and fragmentation (-0.12, p=65).

**Conclusion:** This study's implications suggest actigraphy may provide complementary information to self-reported measures of sleep. Such information may support patients' articulation of sleep issues to the rheumatologist. Further research is necessary to understand how actigraphy measures can be effectively summarized for use by the patient and rheumatologist to discuss sleep issues during the clinical encounter as well as their ability to support clinical diagnosis of sleep disorders.

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