ments have not been tested among older adults with a diagnosis of insomnia. The goal of this study was to evaluate the effects of sleep hygiene plus structured activity versus sleep hygiene plus aerobic activity on actigraphically estimated sleep wake patterns.
Methods: Participants included 17 healthy, community dwelling adults age >55 who met DSM-IV criteria for primary insomnia (age M= 61.5, SD=4.2, one male) with sleep duration < 6.5 hours and/or sleep efficiency < 85% documented with actigraphy. Participants were randomized to a program of 16 weeks of either sleep hygiene plus aerobic exercise or sleep hygiene plus structured activity. Participants completed the Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS) and underwent exercise testing (V02 max and max HR) at baseline and 16 weeks. Sleep-wake patterns were monitored via wrist actigraphy (Actiwatch-64, Minimitter) and daily sleep diary. Estimated sleep variables included: sleep onset latency, total sleep time, wake after sleep onset, sleep efficiency and fragmentation index. Data were analyzed using repeated measures ANOVA. T-tests were also conducted to explore change over time in each group separately. Correlations were conducted between subjective and objective change in sleep quality.
Results: There were significant effects for time for total sleep time (p<.001) and sleep efficiency (p=.02). There were no significant time x condition effects. When we evaluated time effects for each group separately, both groups demonstrated significant improvement in total sleep time (exercise group change= + 0:45, p=.004, structured activity group change= +0:45, p<.01,). The exercise group demonstrated a significant decrease in sleep latency (change= -11.4, p=.049), sleep efficiency (change= +3.58%, p=.01) and a trend for a decrease in wake after sleep onset (change= 0:14, p=.06). Greater improvements in sleep latency and total sleep time were associated with smaller improvements in HR max.
Conclusion: Results demonstrate objective improvements in actigraphically estimated sleep in older adults with insomnia with both interventions: sleep hygiene education plus structured activity as well as sleep hygiene education plus aerobic exercise. Both interventions are low cost, highly available and may have substantial benefits for sleep, physical and emotional health in older adults.
Support (If Any): P01 AG11412, 1K23HL109110-01

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INSOMNIA IN SHIFT WORK DISORDER (SWD) ASSOCIATED WITH CORTICAL EXCITABILITY: AN ERP STUDY PRIOR TO A NIGHT SHIFT

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Introduction: Hyperarousal as a characteristic of primary insomnia may be reflected in neuronal excitability of the central auditory system. Currently, it is unknown whether insomnia (INS) in the context of shift work (SWD-INS) is characterized by elevated amplitude of the N1 auditory brain response measured by event-related brain potentials (ERPs). Insomnia is also associated with cognitive processing deficits. This study examined the N1 as a measure of neuronal excitability and the MMN as a measure of cognitive processing in SWD-INS during the night.
Methods: 5 night-workers with SWD-INS (38±10.3yrs, 1 male; ESS 7.8±1.2; ISI 15.5±3.9) and 9 asymptomatic night workers (ANW) (31.5±5.5yrs, 3 males; ESS 7.9±1.7; ISI 6.6±2.8) participated. All worked a 10-12hr shift between 19:00 and 08:00 and were free of other sleep disorders and otherwise healthy. The ERP session started at 18:00. The peak latency of N1 elicited by an infrequent sound (frequency deviant) was measured between 90-110 ms from sound onset. The MMN was elicited when the brain pre-attentively detected a frequency change in the sound-sequence and was measured between 130-160 ms from sound onset. Evaluation of sleepiness was performed by a standard MLST starting at 22:30.
Results: Mean MSLT score from 22:30 - 02:30 was not significantly different between groups (9±5min [ANW] vs. 10±8min [SWD-INS]), but the ISI differed (15.5±3.9 [SWD-INS] vs. 6.6±2.8 [ANW] p<.02). The N1 amplitude was significantly elevated in SWD-INS relative to ANW (−1.7±0.8μV vs. −1.1±0.6μV, p<0.01). MMN was not significantly different between SWD-INS and ANW (−0.9μV±0.8μV vs. −1.0μV±0.7μV).
Conclusion: Cortical excitability is present in SWD-INS and can be objectively determined by the N1 brain response in the auditory modality. In the wake state, SWD-INS is not associated with a deficit of sensory memory.
Support (If Any): This study is supported by grant 1K01OH009996-02 from CDC/NIOSH.

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EXAMINATION OF SLEEP, NOCTURNAL HOT FLASHES, AND TREATMENT PREFERENCES IN PERI- AND POST-MENOPAUSAL WOMEN

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Introduction: Sleep disturbance was identified as a key symptom of the menopause transition in a 2005 report from the NIH State-of-the-Science Conference panel on menopause-related symptoms. During the period surrounding menopause including both peri- and postmenopause, approximately 26-56% of women experience chronic insomnia. The study aim was to test the hypothesis that menopausal women who reported nocturnal hot flashes would report greater insomnia severity and wake after sleep onset (WASO) compared to women who did not report nocturnal hot flashes and to examine treatment preferences.
Methods: Three hundred eighty eight women self-described as perimenopausal (47.2%, age range=33-58 years, m=49.19±4.7) or postmenopausal (52.8%, age range=34-75 years, m= 54.89±5.6) completed an online survey about sleep and menopause, which included the Insomnia Severity Index (ISI) and report of experiencing nocturnal hot flashes in the past two weeks.
Results: After controlling for treatment with hormones and use of medication for sleep in an ANCOVA, those who reported night sweats/hot flashes in the past 2 weeks reported significantly greater insomnia severity (ISI score; m=14 +/- 6), significantly greater WASO (m=59 min +/-44 min), and significantly greater interest in cognitive behavioral treatment (CBT) for insomnia and nocturnal hot flashes (73.8%) versus those who did not report hot flashes in the past 2 weeks (ISI score m=9 +/- 5, p<.001), (WASO m=36 min +/-37 min, p=.004), and (interest in CBT 37%, p<.001).
Conclusion: This study suggests that women who are reporting nocturnal hot flashes have higher insomnia severity scores. The majority of women expressed interest in receiving behavioral treatment for their insomnia and nocturnal hot flashes. This study provided initial examination of report of nocturnal hot flashes and perceived insomnia severity and suggests that CBT-I may be appealing for menopause-associated insomnia, particularly among women with nocturnal hot flashes.

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ARE DIFFERENCES BETWEEN PREFERRED AND AD LIB SLEEP SCHEDULES PREDICTORS OF HEALTH OUTCOMES AMONG PEOPLE WITH INSOMNIA?

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Introduction: Evening chronotypes and circadian misalignment are two factors associated with negative health outcomes, including obesity. To our knowledge, within-subject differences between the preferred sleep schedule and ad lib sleep schedule have not been previously examined

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