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RELATIONSHIP BETWEEN SLEEP ARCHITECTURE AND AGE BY GENDER IN BRAZIL: BAEPENDI HEART STUDY

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Introduction: Sleep stage duration has been associated with age. However, few studies have examined sleep stages across adulthood in both men and women. The objective of this analysis was to describe sleep architecture across age by gender in a large cohort of Brazilian adults.

Methods: This ancillary study added polysomnography (PSG) recordings to the Baependi Heart study, a prospective family-based cohort of Brazilian adults. Preliminary analyses used data from 812 participants (517 women). Sleep was staged following standard criteria. Generalized linear models were used to assess associations between age (cubic polynomial) and sleep outcomes in analyses stratified by gender.

Results: Age ranged between 18 and 88 years. Mean age was 50.0 (SD = 13.3) for women and 49.9 (SD = 14.9) for men. Expected means for women at age 50 were 6.35 hours total sleep time (TST) (95% CI: 6.22, 6.48), 213.5 minutes in N2 (95% CI: 207.2, 219.9), and 75.6 minutes (95% CI: 71.9, 79.3) in REM. These were similar to expected means for men at age 50, which were 6.3 hours TST (95% CI: 6.12, 6.48), 212.9 minutes in N2 (95% CI: 204.0, 221.8), and 78.3 minutes (95% CI: 73.7, 82.8) in REM. Expected N3 at 50 years was higher in women (44.7 minutes i, 95% CI: 44.0, 45.5) than men (30.2 minutes,95% CI: 29.4, 31.1) and WASO duration was lower for women (62.6 minutes; 95% CI: 61.7, 63.5) than for men (69.8 minutes; 95% CI: 68.5, 71.1).Non-linear relationships with age were demonstrated for N3, REM, and WASO. For example, in women there appears to be a steeper decline in N3 between approximately ages 20-40 years, a plateau until approximately 55-60 years and then another decline. Men also exhibit a steeper decline at younger ages followed by a more gradual decline that begins around 35-40 years. By contrast, TST showed a stable, linear decline with age in men and women.

Conclusion: Preliminary analyses suggest that the relationship between age and some sleep outcomes differ by gender. Future analyses on the full sample will consider splines for age to investigate further these non-linear relationships.

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EXAMINING RATES AND CHANGE IN INSOMNIA SEVERITY AMONG VETERANS ENROLLED IN AN OUTPATIENT EXERCISE PROGRAM

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Introduction: Exercise moderately improves middle insomnia and sleep quality in older adults. GeroFit is a national structured exercise program for Veterans over age 60 that offers 14 virtual classes per month. Each 60-minute class has a combination of cardiovascular, resistance, flexibility, and balance training and is modified to accommodate the range of functional abilities. The purpose of this analysis was to characterize insomnia symptoms (using the Insomnia Severity Index [ISI]) among GeroFit participants across different time points and examine the impact of attendance on change in insomnia symptoms over time.

Methods: Veterans in the VA Boston GeroFit program (n=69; 60-93years; Meanage=74.3±8.3; 80.6%male; 80.6%White) were administered the ISI at baseline (n=32), 3-months (n=38), 6-months (n=23), and 12-months (n=21) after enrollment. Participants were categorized by ISI scores: no clinically significant insomnia (ISI=0-7), subthreshold insomnia (ISI=8-14), moderate clinical insomnia (ISI=15-21), and severe clinical insomnia (ISI=22-28). A repeated measures ANOVA was performed to assess for ISI score change over time by attendance rate.

Results: Veterans attended 64% of the 14 classes per month and exhibited a range of functional ability (Physical Function Subscale [SF-36] scores ranged from 11-29 at baseline). The rates of subthreshold and moderate insomnia were: baseline (15.6%;6.3%), 3-months (26.3%;13.2%), 6-months (30.4%;8.7%), and 12-months (38.1%;9.5%), respectively. Overall, ISI scores remained consistent over time as there were no significant score changes over the first 6 months (p=.121); however, participants with <50% attendance demonstrated a significant increase in ISI scores from baseline to 3months (p=.002).

Conclusion: Of Veterans participating in the VA Boston GeroFit program, about 1 in 10 reported moderate insomnia and 1 in 4 had subthreshold insomnia. Increasing attendance rates is important for improving sleep quality and more research is needed to clarify the "dose" of exercise required to reap meaningful gains in insomnia symptoms, particularly among Veterans with more severe symptoms. Given that 1/3 of participants reported at least subthreshold insomnia, future studies are needed to better understand whether supplemental interventions (e.g., sleep psychoeducation, stimulus control) might be offered to GeroFit participants with clinically significant insomnia symptoms, to dually target sleep and physical functioning.

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FACTOR ANALYSIS OF MULTIDIMENSIONAL SLEEP HEALTH DOMAINS IN OLDER ADULTS WITH ACTIGRAPHY: RESULTS FROM THE EINSTEIN AGING STUDY

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Introduction: The concept of Sleep Health, based on self-reports in the RU-SATED model, has been recently extended using parameters derived from 4 days of actigraphy in a cohort of older adults, yielding a 5-component model. Using a longer actigraphy time series from a separate study, the current factor analysis evaluates and extends a theoretically-driven, multi-dimensional sleep health construct in older adults.

Methods: Participants (N=291, mean age=77.2 years, 33% males; 47% white, 40% Black, 13% Hispanic/others) enrolled in The Einstein Aging Study were included. A random subsample of