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SOCIODEMOGRAPHIC, PSYCHOLOGICAL, AND BEHAVIOURAL PREDICTORS OF SLEEP CHANGES IN OLDER ADULTS DURING THE COVID-19 PANDEMIC: A LONGITUDINAL STUDY

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Introduction: To mitigate the spread of COVID-19, strict lockdown measures were implemented in March of 2020. Although these measures have been shown to disrupt sleep in older adults beyond the effects of typical ageing, the long-term effects of the pandemic on sleep in this population are unclear. The objective of this study is to identify sociodemographic, psychological, and behavioural factors that predict sleep changes throughout the pandemic in older adults.

Materials and Methods: The longitudinal study included 645 older adults (73.10% female; M_{age}= 78.69; SD= 5.67) who completed self-report questionnaires at four timepoints: April 2020 (T1), July 2020 (T2), Fall 2020 (T3), and March 2021 (T4). Sociodemographic factors were age, gender, education, income, and living situation. Psychological factors that were assessed were loneliness (UCLA Loneliness Scale), psychological distress (Kessler Psychological Distress Scale), and perceived threat of the pandemic (questionnaire created by our team). Behavioural factors that were measured included physical activity (International Physical Activity Questionnaire) and sleep-related behaviours (retrospective sleep diaries), such as sleep duration, time in bed, and social rhythm within the prior two weeks of administration. The Insomnia Severity Index (ISI) was used to evaluate the severity of insomnia symptoms. Using the total ISI scores at each timepoint, group-based trajectory modelling was conducted to identify sleep trajectories. Subsequently, multinomial logistic regression was performed to find the aforementioned factors at T1 that predicted these trajectories.

Results: Three groups with distinct sleep trajectories were identified: high ISI ($n=$ 76), intermediate ISI ($n=$ 163), and low ISI ($n=$ 406). The high ISI group reported having greater psychological distress (OR= 3.88, 95% CI: 2.42, 6.24), increased variability in time out of bed in the morning (OR= 1.59, 95% CI: 1.13, 2.23), more time in bed (OR= 2.73, 95% CI: 1.68, 4.45), and shorter sleep duration (OR= 0.09, 95% CI: 0.05, 0.17) at T1 than the low ISI group. The intermediate ISI group reported having more psychological distress (OR= 2.01, 95% CI: 1.47, 2.75), more time in bed (OR= 2.14, 95% CI: 1.47, 3.11), and shorter sleep duration (OR= 0.26, 95% CI: 0.17, 0.39) at T1 than the low ISI group. Those in the high ISI group were more likely to be male (OR= 0.25, 95% CI: 0.09, 0.68) and reported having greater psychological distress (OR= 1.93, 95% CI: 1.25, 2.98), increased variability in time out of bed (OR= 1.71, 95% CI: 1.19, 2.45), and shorter sleep duration (OR= 0.36, 95% CI: 0.21, 0.60) at T1 than the intermediate ISI group.

Conclusions: Being male as well as having elevated psychological distress and poorer sleep at the start of the pandemic were risk factors for sleep disturbances over time in older adults. Interventions aimed at reducing psychological distress and sleep disturbances should be implemented.

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SUBJECTIVE SLEEP QUALITY IS THE STRONGEST PREDICTOR OF MENTAL AND PHYSICAL HEALTH INDEPENDENT OF CHRONOTYPE, SLEEP DURATION, APOE-ε4 CARRIERSHIP, AGE, SEX, ALCOHOL CONSUMPTION, AND RETIREMENT STATUS IN HEALTHY OLDER ADULTS

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Introduction: Sleep and circadian rhythm disturbances are risk factors for mental and physical health problems. Carriership of the apolipoprotein E (APOE) gene variant, APOE-ε4, has been associated with objective sleep disturbances; mixed evidence suggests APOE-ε4 may also be implicated in worsened mental and physical health outcomes. This study aims to extend previous findings by examining how self-reported sleep quality, sleep duration, and chronotype independently associate with mental and physical health in healthy older adults, while controlling for APOE-ε4 carriership and other demographic characteristics.

Materials and methods: In total 166 participants (117 female) between 42 and 90 years old ($M = 64.69$, $SD = 9.42$) were recruited as part of the screening phase for a sleep-circadian and cognition experiment. Sleep quality was assessed using the Insomnia Severity Index (ISI), Pittsburgh Sleep Quality Index (PSQI) global score, and PSQI subjective sleep quality item. Chronotype was assessed via the Morningness-Eveningness Questionnaire (MEQ) and the Munich Chronotype Questionnaire (MCTQ). Sleep duration was assessed using the PSQI and the General Medical Questionnaire (GMQ). Mental health and physical health were measured using the Short Form Health Survey (SF-36). Data was collected on APOE-ε polymorphism using genotyping; participants were coded as APOE-ε4 carriers or APOE-ε4 non-carriers.

Results: A series of linear regression models assessed the independent associations of self-reported sleep quality, sleep duration, and chronotype with mental health and physical health. Secondary models controlled for age, sex, APOE-ε4 carriership, alcohol consumption, and retirement status. Poor sleep quality was the strongest independent predictor of lower mental health across all measures and models; ISI (Beta = -.410, p<.001), PSQI global score (Beta = -.260, p = .006), and PSQI subjective sleep quality (Beta = -.254, p = .003). The regression models were then run separately for men and women. Lower sleep quality was found to be the strongest predictor of worse mental health, particularly in men (Beta = -.951, p<.001), compared with women (Beta = -.325, p = .001). Lower sleep quality was also associated with lower physical health, but only in women (Beta = -.285, p = .006). Limited meaningful associations were found for chronotype and sleep duration. APOE-ε4 carriership was not found to predict mental or physical health and did not adjust the results of the studied associations in any of the models.

Conclusions: This study found that sleep quality was the strongest independent predictor of mental health in older adults, especially in men. Similarly, lower sleep quality was independently associated with poorer physical health; however this was only found in women. Sleep quality should therefore be considered alongside the assessment and treatment of physical and mental health problems in older adults, independent of APOE-ε4 status and demographic characteristics.

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THE AGES OF SLEEP ONSET: SPATIO-TEMPORAL EEG PATTERNS IN PREADOLESCENTS, YOUNG AND OLDER ADULTS

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