

strategies before and during missions in order to enhance Soldier readiness and performance.

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IMPACT OF MENOPAUSE-RELATED SLEEP FRAGMENTATION ON DAYTIME SLEEPINESS AND NEUROBEHAVIORAL PERFORMANCE: RESULTS OF AN EXPERIMENTAL MODEL

Grant, L. K.^{1,2} Cohn, A.^{3,4} Abramson, M.⁴ Russell, J. A.⁴ Wiley, A.^{4,5} Coborn, J. E.^{4,5} Nathan, M. D.⁴ Scheer, F. A.^{1,2} Klerman, E. B.^{1,2,6} Kaiser, U. B.³ Rahman, S. A.^{1,2} Joffe, H.^{1,2,4,5}

¹Division of Sleep Medicine, Department of Medicine, Harvard Medical School, Boston, MA, ²Division of Sleep and Circadian Disorders, Departments of Medicine and Neurology, Brigham and Women's Hospital, Boston, MA, ³Division of Endocrinology, Diabetes and Hypertension, Department of Medicine, Brigham and Women's Hospital, Boston, MA, ⁴Women's Hormones and Aging Research Program, Department of Psychiatry, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, ⁵Mary Horrigan Connors Center for Women's Health and Gender Biology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, ⁶Department of Neurology, Massachusetts General Hospital, Boston, MA.

Introduction: Cognitive performance may be adversely affected during the menopause transition from hot flash-induced sleep fragmentation even without changes in sleep duration. We examined the effects of experimentally-induced sleep fragmentation without shortened sleep duration on daytime sleepiness and neurobehavioral performance in women in a high and low estradiol (E2) state.

Methods: Seven pre-menopausal women (29.4 ± 3.8 years) participated in two 6-day inpatient studies repeated in a high-E2 (mid-to-late follicular phase) then low-E2 state (gonadotropin-releasing hormone agonist-induced E2 suppression - similar to levels during menopause) ~6 weeks apart. Sleep was uninterrupted on nights 1–2 [8-h time-in-bed (TIB)] and fragmented on nights 3–5 (9-h TIB) using an auditory stimulus delivered every 15 min that sustained wake for 2 minutes, producing 1-h total wake after sleep onset. Wakefulness was confirmed by event-markers during polysomnographically-recorded sleep episodes. Daytime subjective sleepiness (Karolinska Sleepiness Scale; KSS) and neurobehavioral performance (Psychomotor Vigilance Task; PVT) were assessed every 2–3 hours on study days 2–5. The effects of study day and E2 state on KSS scores and PVT measured reaction time (RT) and attentional failures (RT>500ms) were examined using linear mixed models.

Results: Participants reported feeling sleepier (+10%), had longer RTs (+22ms), and more attentional failures (+53%) after sleep fragmentation than after uninterrupted sleep (all $p < 0.001$). While there was no main effect of E2 state, there was a differential effect of sleep fragmentation by E2 state on PVT, but not sleepiness, such that the increase in RT and attentional failures in response to sleep fragmentation was only observed in the high-E2 state ($p < 0.001$).

Conclusion: Eight hours of total sleep time may not be sufficient to maintain subjective sleepiness and PVT performance levels when sleep is not consolidated. These findings have important implications for understanding the role of sleep and E2-modulated cognitive impairment during the menopause transition.

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SOCIAL JETLAG AND SLEEP HABITS ON WEEKENDS MODERATE THE RELATIONSHIP BETWEEN PERSONAL STANDARDS PERFECTIONISM AND ACADEMIC PERFORMANCE IN YOUNG ATHLETES

Caron, J. Roy, J. Godin, R. Gaudreault, P. Forest, G.

Laboratoire du sommeil, Département de psychoéducation et de psychologie, Université du Québec en Outaouais, Gatineau, QC, CANADA.

Introduction: Research suggests that young athletes may present different levels of perfectionism, which affect sport and academic performances. Sleep is also a variable that can affect grades. The aim of the present study was to investigate the relationship between personal standards (PS) perfectionism, sleep and school performance in young athletes.

Methods: 27 young athletes (13–16y) wore an actigraph for a week and completed an adapted version of the Frost Multidimensional Perfectionism Scale at the beginning, middle and end of the school year. Sleep habits during weekdays (WD) and weekends (WE), and social jetlag (SJ) were extracted from the actigraphy. Mean performance of the two main school subjects were taken from the final report at the end of the school year (*M*grades). A linear regression was done between PS and *M*grades. Then, we used Hayes' PROCESS Macro V3.4 to examine the role of sleep as a moderator of the relation between PS and *M*grades.

Results: PS significantly predicts *M*grades ($\beta = .59$, $p = .001$; $R_a^2 = .34$, $p = .001$). The addition of the interactions terms, first between SJ and PS, then, between WE bedtimes and PS, and finally, between WE waketimes and PS, explained a significant increase in variance in *M*grades ($\Delta R^2 = .14$, $F(1,23) = 31.81$, $p < .001$; $\Delta R^2 = .17$, $F(1,23) = 25.99$, $p < .001$; $\Delta R^2 = .10$, $F(1,23) = 12.43$, $p = .002$, respectively). Therefore, when SJ is higher than 39min, WE bedtimes are after 10:21PM and WE waketimes are after 7:12AM, PS and *M*grades are significantly related.

Conclusion: These results show that when higher SJ and later WE bedtimes and waketimes are present, low PS are associated with low grades and high PS are associated with high grades. In contrast, when a small SJ, earlier WE bedtimes and waketimes are present, PS are not associated with grades. These results suggest that young athletes may be more vulnerable to the effect of sleep disturbances on grades depending on various factors such as perfectionism.

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SLEEP CHARACTERISTICS AND MOOD OF PROFESSIONAL ESPORTS ATHLETES: A MULTI-NATIONAL STUDY

Lee, S.¹ Bonnar, D.² Roane, B.³ Gradisar, M.² Jang, E.¹ Suh, S.¹

¹Sungshin Women's University, SEOUL, KOREA, REPUBLIC OF, ²Flinders University, Adelaide, AUSTRALIA, ³University of North Texas, Fort Worth, TX.

Introduction: Esports is becoming increasingly professionalized, yet research on performance management is remarkably lacking. The present study aimed to investigate sleep and mood in professional esports athletes.

Methods: Participants were 17 professional esports athletes from South Korea (8), Australia (4) and the US (5) who played First