0001

ASSOCIATIONS BETWEEN CIRCADIAN FACTORS AND TRAVEL DISTANCE WITH PERFORMANCE: A RETROSPECTIVE ANALYSIS OF 2014-2018 NATIONAL BASKETBALL ASSOCIATION DATA

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Introduction: Frequent travel across time zones and travelling long distances interferes with healthy sleep and disrupts the circadian system, often degrading athletic performance. National Basketball Association (NBA) players face a demanding travel schedule often requiring multiple games per week, with games spanning the continental United States. This investigation aimed to clarify the influence of circadian factors and travel distance on NBA performance using a dataset from the 2014-2018 seasons.
Methods: NBA (2014-2018) game data were acquired from an open-access source: (https://www.kaggle.com/ionaskel/nba-games-stats-from-2014-to-2018). Circadian variables of time zone change (TZΔ) and adjusted jet lag (AJL) were formulated, with quadratic versions utilized across analyses. TZΔ captured circadian delay/advance based on travel for a game, with each TZ going eastward and westward reflected by -1 and +1, respectively. AJL advances TZΔ by allowing acclimation to a novel TZ, with each day resulting in a 1-unit change towards circadian neutral. AJL is a season-long rolling summation, which was computed using two different travel approaches: Approach1 (AJL1) assumes travel the day before each game, whereas Approach2 (AJL2) was designed to prioritize being home. A standardized flight tracker determined travel distance for each game (GameDistance). Team ability differences, characterized as difference in season win percentages (SeasonWinPerDiff), served as an analytic covariate. Game point differential (PointDiff), defined as a team's score minus their opponent's score, and a team's free throw percentage (FreeThrowPer) served as outcome variables. Linear mixed-effects modeling assessed univariate and multivariate associations, with games nested within both team and year.
Results: AJL2 (β = -0.63; p = .01) and GameDistance (β = -0.73; p<0.0001) significantly associated with PointDiff. TZΔ (β = -0.002; p = .03), AJL1 (β = -0.002; p =.04) and GameDistance (β = -0.003; p = 0.007) significantly associated with FreeThrowPer. AJL2 and GameDistance maintained significant relationship with PointDiff in fully adjusted model that included AJL2, GameDistance, and SeasonWinPerDiff.
Conclusion: Results suggest that both circadian delay/advance and greater distance traveled for games negatively influence NBA performance, even when controlling for differences in team ability. Season travel and flight plans could be constructed to reduce the effects of circadian misalignment and travel distance.
Support (If Any): None

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GO TO BED! A SYSTEMATIC REVIEW AND META-ANALYSIS OF BEDTIME PROCRASTINATION DETERMINANTS AND SLEEP OUTCOMES.

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Introduction: Bedtime procrastination, the volitional delay of going to bed without any external circumstances causing the delay, is associated with poor sleep outcomes. Alleviating bedtime procrastination is an important target for interventions to promote adequate sleep, yet the social cognitive, biological, and behavioural determinants of bedtime procrastination are poorly understood. The present study aimed to conduct a systematic review, narrative synthesis, and meta-analysis of (1) the underlying determinants of bedtime procrastination, and (2) the strength and direction of the relationship between bedtime procrastination and sleep outcomes.
Methods: A database search was conducted through CINAHL, EMBASE, PsychINFO, PubMed, Scopus and Web of Science, using keywords related to procrastination, delay, bedtime and sleep.
Results: A total of 2087 records were identified, and 38 publications met the inclusion criteria. Random-effects meta-analysis for bedtime procrastination and sleep outcomes is ongoing. Preliminary findings suggest self-regulation, self-control and chronotype are the most prominent determinants.
Conclusion: Future research should expand focus to identify a broader range of determinants. Given that there are multiple benefits to a theory-based approach to behaviour change interventions, further research exploring determinants will be able to guide the development of interventions targeting bedtime procrastination.
Support (If Any):

0003

ON THE SAME WAVELENGTH? QUANTIFYING THE ASSOCIATIONS BETWEEN EATING TIMING AND REST-ACTIVITY RHYTHMS IN FREE-LIVING ADULTS

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Introduction: Misalignment between the central circadian clock and daily behaviors increases cardiometabolic morbidity and mortality risk, likely due to internal misalignment between central and peripheral circadian rhythms. Experimental studies suggest food intake may act as a time cue ('zeitgeber') for resetting circadian rhythms, representing a potential behavioral target to ameliorate circadian misalignment and associated health consequences. However, the extent to which eating timing relates to circadian rhythms in free-living adults is unclear. Therefore, we tested the associations between eating timing with 24-h rest-activity-rhythms (RAR), a free-living proxy for endogenous circadian rhythms, in non-shift-working adults.
Methods: Adults without chronic health conditions or sleep disorders completed 14 days of 24/7 wrist accelerometry to evaluate RAR variables of interdaily stability (IS; day-to-day stability in RAR), intradaily variability (IV; within-day fragmentation of RAR), relative amplitude (RA; difference between peak vs. trough activity), L5 onset time (5-h period with lowest activity), and M10 onset time (10-h period with highest activity). Concurrently, time-stamped image-assisted diet records were obtained to generate average eating timing variables, including daily eating onset (time of first caloric intake after awakening), offset (last caloric intake time), duration (time elapsed between eating onset and offset), and caloric midpoint (time at which 50% of daily kcals were consumed), and variables illustrating irregularity in eating timing (standard deviation of eating timing variables). Pearson's correlations quantified the associations between RAR and eating timing variables.
Results: Participants (N=30) were 28.0±6.6 years, 57% female, with a BMI of 23.8±2.5 kg/m2. Higher IS was correlated with lower irregularity in both eating onset (r=-0.55, p<0.01) and duration (r=-0.51, p<0.01). Higher RA correlated with earlier eating onset (r=-0.47, p<0.01), longer eating duration (r=0.53, p<0.01), and lower eating onset irregularity (r=-0.37, p<0.05). Later L5

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