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NIGHT-TO-NIGHT VARIABILITY IN OBSTRUCTIVE SLEEP APNOEA SEVERITY IS ASSOCIATED WITH HYPERTENSION AND HIGH MISDIAGNOSIS RATES

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Introduction: The impact of night-to-night variability in obstructive sleep apnoea (OSA) severity on important health outcomes such as blood pressure is unknown. This study aimed to determine the effects of night-to-night variability in the apnoea/hypopnoea index (AHI) on hypertension risk and OSA misdiagnoses.
Methods: In-home nightly monitoring of 67,278 participants from 151 countries, over ~170 nights per participant between July 2020 to March 2021 using a validated under mattress sleep analyser. Blood pressure measurements were available in 12,295 participants. OSA was defined as a mean nightly AHI >15events/h. Night-to-night variability was assessed as the standard deviation of AHI across nights.
Results: 22.6% (95% CI: 20.9–24.3) of the cohort (13% of women, 25% of men) had an average AHI> 15 events/h sleep. The average nightly AHI variability ranged from 3±1 in people without OSA to 14±6 in people with severe OSA. Higher mean AHI (OR [95% CI], 1.44 [1.29, 1.61]) and greater nightly variability in AHI (1.57 [1.39, 1.76]) were associated with hypertension. In people with a mean AHI of ≥5 events/h, high night-to-night AHI variability was associated with a ~30% increased risk in hypertension, independent of OSA severity category. Likelihood of misdiagnosis of OSA based on a single night compared to the mean across all nights was ~20%; this decreased with more monitoring nights.
Conclusions: These findings highlight the novel, important information that simple multi-night monitoring of OSA can yield. This includes the potential importance of night-to-night variation and its contribution to hypertension and increased confidence of OSA diagnoses.

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TRAVEL OR CHEERS? EXAMINING THE DRIVERS AND MECHANISMS OF HOME COURT ADVANTAGE IN THE 2020/2021 NBA REGULAR SEASON

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Introduction: Home court advantage (HCA) in the National Basketball Association (NBA) is well-documented, yet the co-occurring drivers responsible for this advantage have proven difficult to examine in isolation. The Coronavirus disease (COVID-19) pandemic resulted in the elimination of crowds in ~50% of games during the 2020/2021 NBA season, whereas travel remained unchanged. Using this 'natural experiment', we investigated the impact of crowds and travel-related sleep and circadian disruption on NBA HCA.
Methods: 1080 games from the 2020/2021 NBA regular season were analyzed using mixed models (fixed effects: crowds, travel; random effects: team, opponent).
Results: In games with crowds, home teams won 58.65% of the time and outrebounded (M=2.28) and outscored (M=2.18) their opponents. In games without crowds, home teams won significantly less (50.60%, $p = .01$) and were outrebounded (M=-0.41, $p < .001$) and outscored (M=-0.13, $p < .05$) by their opponents. Further, the increase in home rebound margin fully mediated the relationship between crowds and home points margin ($p < .001$). No significant sleep or circadian effects were observed.
Discussion: Taken together, these results suggest that HCA in the 2020/2021 NBA season was predominately driven by the presence of crowds and their influence on the effort exerted by the home team to rebound the ball. Moreover, we speculate that the strict NBA COVID-19 policies may have mitigated the travel-related sleep and circadian effects on the road team. These findings are of considerable significance to a domain wherein marginal gains can have immense competitive, financial, and even historical consequences.

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SLEEP STAGING AGREEMENT BETWEEN POLYSOMNOGRAPHY AND SLEEP PROFILER IN ISOLATED REM SLEEP BEHAVIOR DISORDER

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Purpose: Evaluate the sleep staging agreement between polysomnography (PSG) and Sleep Profiler (SP) in patients with suspected isolated REM-sleep-behavior-disorder.
Methods: Twenty-six patients with reported dream-enactment-behavior (Site1=16, Site2=10; 27% women; age 64±13 years) underwent a diagnostic PSG with simultaneously recorded SP. A registered sleep-technologist at each site performed PSG-staging, while SP was auto-staged and technically reviewed/edited.
Across technicians, the initial staging was blinded. Site1 then performed unblinded restaging of PSG=N3(N2) vs. SP=N2(N3) epochs, while Site2 conducted a blinded, carefully-targeted re-staging of N3. Statistics included Cohen's kappa and Chi-square analyses.
Results: Agreement between SP and Site1 vs. Site2 were significantly different for Wake (kappa:Site1=0.816;Site2=0.650;combined=0.736), stage N1 (kappa:Site1=0.149;Site2=0.228;combined=0.188), stage N2 (kappa:Site1=0.632;Site2=0.718;combined=0.659), stage N3 (kappa:Site1=0.715;Site2=0.368;combined=0.525) and REM (kappa:Site1=0.827;Site2=0.719;combined=0.766)(all $P<0.001$).
After restaging of N3, the kappa values improved at Site1 (unblinded:N2=0.659/N3=0.883) and Site2 (blinded:N2=0.775/N3=0.736)(combined:N2=0.735/N3=0.851). The proportion of PSG-epochs restaged from N3 to N2 was 17% at Sites1 and 38% at Site2 ($P<0.001$), while Site1 had fewer remaining PSG=N3 vs. SP=N2 conflicts (5.6% vs. 20.8%, $P<0.001$).
Compared to Site2, Site1 had a superior: REM kappa due to fewer SP=N2 disagreements (8.5% vs. 16.8%, $P<0.001$), and Wake kappa resulting from fewer SP=N1 (6.6 vs. 15.6%, $P<0.001$) and SP=N2 conflicts (5.9 vs. 12.0%, $P<0.001$). Conversely, the Site1 N1 kappa was inferior due to greater SP=wake disagreement (41.6% vs. 19.8%, $P<0.001$).
Discussion: N3 was excessively stage by both PSG technicians before restaging. At Site1, Wake, N3, and REM had almost-perfect-agreement with SP, while N2 had substantial-agreement. At Site2 and across-site, substantial-agreement was observed for Wake, N2, N3, and REM.