



The association between sleep duration with migraine frequency, disability and perceived stress in the Headache Assessment via a Digital platform in United States (HeAD-US) Study

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BACKGROUND

- Short and long self-reported sleep duration are associated with negative health outcomes
- Limited data suggests that adequate nightly sleep duration may reduce daily pain intensity in those with chronic migraine
- We examined the association between self-reported sleep duration on migraine frequency, disability and perceived stress scores

METHODS

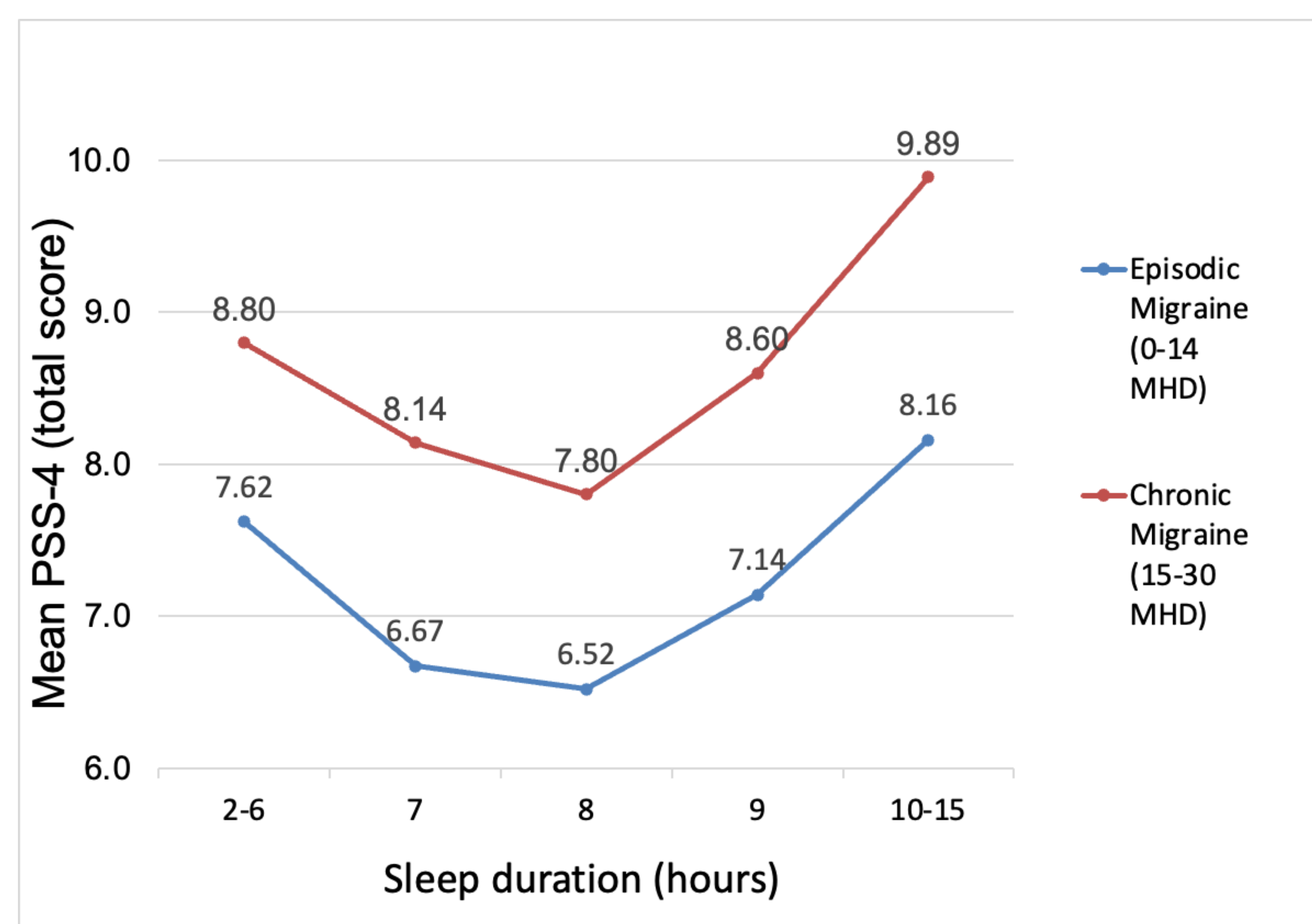
- Cross-sectional 2023 data collected in the HeAD-US Study, a cohort of adults with migraine surveyed through Migraine Buddy app
- Baseline reports: self-reported average nightly sleep duration, Perceived Stress Scale (PSS-4), MIDAS, PHQ-4 for anxiety and depression
- Multivariable neg. binomial regression (for sleep duration and MIDAS or monthly headache days)
- Linear regression (for sleep duration and stress, adjusting for age, sex, income, edu., anx. and dep)

RESULTS

Sample characteristics

| | ≤6 hours | 7-9 hours | ≥10 hours | Total |
|---|-------------|-------------|-------------|-------------|
| | 2215 (35.3) | 3896 (62.2) | 156 (2.5) | 6267 |
| Age, Mean (SD) | 43.1 (12.7) | 40.9 (13.2) | 36.4 (14.0) | 41.5 (13.1) |
| Female, n (%) | 1952 (88.1) | 3598 (92.4) | 142 (91.0) | 5692 (90.8) |
| Race, White (%) | 3664 (84.9) | 2104 (84.4) | 142 (91.0) | 5768 (84.7) |
| Ethnicity, Hispanic (%) | 170 (7.7) | 226 (5.8) | 8 (5.1) | 404 (6.4) |
| Annual Household Income, >\$75,000, n (%) | 795 (45.1) | 1691 (51.5) | 42 (36.5) | 2528 (50.7) |
| Education, ≥ College degree | 1491 (67.3) | 2972 (76.3) | 92 (59.0) | 4555 (72.7) |
| ≥15 migraine headache days per month | 952 (42.9) | 1317 (33.8) | 74 (47.4) | 2343 (37.4) |
| MIDAS severe disability, n(%) | 1832 (82.7) | 3031 (77.8) | 140 (89.7) | 5003 (79.8) |
| PSS-4 Total Score, mean(SD) | 8.13 (3.07) | 7.14 (3.05) | 8.98 (3.47) | 7.53 (3.11) |
| Anxiety, PHQ4, n(%) | 1099 (49.6) | 1476 (37.9) | 90 (57.7) | 2665 (42.5) |
| Depression, PHQ4, n(%) | 814 (36.7) | 989 (25.4) | 71 (45.5) | 1874 (29.9) |

Sleep duration and perceived stress



Unhealthy sleep duration and migraine outcomes

| | ≤ 6 hours | ≥ 10 hours |
|------------------------|--|---|
| Disability | 9.5% higher (95% CI: 1.038–1.155) | 59.6% higher (95% CI: 1.358–1.876) |
| Migraine Headache Days | 9.2% increase (95% CI: 1.033–1.154) | 23.5% increase (95% CI: 1.045–1.459) |

CONCLUSIONS

- Self-reported short (≤ 6 hours) and long (≥ 10 hours) sleep duration is associated with a more disabling and more severe migraine phenotype, characterized by increased headache frequency, greater symptom severity, and higher stress levels