Results: Participants (N= 64) were 13-19 years old (M= 16.7, SD= 1.3 years) and 85.9% male. Racial backgrounds: 61% Black, 18% White, 8% Multiracial, and 13% Other. Youth-reported bedtimes (M= 21:04, SD= :50) were about 50 minutes earlier than their sleep onset times (M= 21:52, SD= 1:02) while wake times (M= 6:41, SD= :46) were about 20 minutes earlier than the time youth reported leaving their bed (M= 7:00, SD= :44). Youth disclosed waking up throughout the night (M= 1.7, SD= 9) for an average 16.8 minutes (SD= 14.9). Multiple diary-responses (58%) noted "partial or overhead" lights were on in youth's sleeping areas; 23.4% wrote in "other" types of light sources, most of which were blue lights (63%). Average sleep quality (M= 5.7, SD= 2.1) and difficulty waking up ratings (M= 5.4, SD= 2.2) indicate mediocre sleep.

Conclusion: Findings summarize youth's sleep-wake experience while residing in a juvenile justice facility. Reported bedtimes are earlier than sleep onset times which increases the likelihood for conditioned insomnia. Circadian dysregulation of sleep behavior can develop from frequent night awakenings and light exposure, particularly, blue light. Ultimately, these findings will help develop facility-wide interventions, improving the youth's sleep-wake schedules and other environmental influences.

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0065

GEOGRAPHIC ASSOCIATION BETWEEN NEIGHBORHOOD SLEEP HEALTH AND CHILD OPPORTUNITY INDEX: DATA AT THE CENSUS TRACT LEVEL

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Introduction: Sleep health impacts the community in many ways. Regional sleep health may reflect other important indicators of health and well-being. Few studies have examined sleep health at the regional level, though.

Methods: Data on neighborhood sleep health values were obtained from the "500 Cities" data collected by the CDC that includes census tract and proportion of the population in that region that report values associated with health, as assessed with the Behavioral Risk Factor Surveillance System. Data include the population of each census tract as well as census-estimated proportion of the population in each census tract that report obtaining at least 7 hours of sleep. Additional variables included as covariates in analyses included the proportion with healthcare access, that were obese, had high blood pressure, had diabetes, and were smokers. The Child Opportunity Index (COI) is a publicly-available index (DiversityDataKids.org) reported at the census tract level. It provides indices for "Education," "Health & Environment," and "Social & Economic" domains, as well as a global score. The present analysis merged the 500 Cities data with the COI data, using census tract as the matching variable. Linear regression analyses examined COI global and subscale scores as outcome variable and proportion of the population obtaining 7 hours of sleep as the independent variable, unadjusted and adjusted for covariates. When data were merged, 27,130 census tracts were included.

Results: Sleep sufficiency was associated with global COI, such that for each additional percent of the population that obtains >=7 hours of sleep, COI increases by 3.6 points (95%CI[3.57,3.64]; p<0.0001); this was attenuated in adjusted analyses (B=1.58; 95%CI[1.53,1.63]; p<0.0001). Each component of COI was related to sleep sufficiency, including education (B=3.06; 95%CI[1.19,1.33]; <0.0001), health & environment (B=3.61; 95%CI[3.57,3.64]; p<0.0001), and social & economic (B=2.23; 95%CI[2.19,2.28]; p<0.0001). All associations were attenuated but significant in adjusted analyses.

Conclusion: Regional prevalence of insufficient sleep was linearly associated with Child Opportunity Index, which itself is an important predictor of a wide range of health and economic outcomes. Community sleep health interventions may have wide-ranging benefits.

Support (If Any):

0066

A MEXICAN SPANISH VERSION OF THE ASSESSMENT OF SLEEP ENVIRONMENT

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Introduction: Sleep research that has been previously completed with individuals of Mexican descent generally do not use instruments that have been translated in accordance with the language norms of the target community. In this study, the Assessment of Sleep Environment (ASE) was translated by a bilingual research study team. The ASE was then completed by English and Spanish speaking participants, in their preferred language.

Methods: Data were collected from a sample of N=100 individuals of Mexican descent in Nogales, Arizona, located at the US-Mexico border. The ASE is a 13-item scale that quantifies the degree to which an individual perceives that their physical environment interferes with their sleep quality. It includes items about heat, cold, noise, quiet, light, dark, smell, humidity, comfort of sleeping surface and bedding, and safety. To translate the measure into Spanish, the following procedure was followed: (1) a bilingual study team member performed an initial translation; (2) a bilingual community member edited the translation; (3) a certified medical translator edited the revision; (4) a focus group of N=5 bilingual community members made contextual edits; (5) a back-translation was performed; (6) an additional bilingual focus group examined the final version for compatibility; and (7) the medical translator certified the accuracy of the final version. T-tests examined differences between those who completed the measure in Spanish vs English.

Results: Of the N=100 survey respondents, N=42 completed the ASE in Spanish. No significant differences were seen in overall scores between those who completed the measure in English or Spanish (p=0.17). In addition, no differences were seen for individual items assessing light (p=0.19), dark (p=0.21), noise (p=0.73), quiet (p=0.15), heat (p=0.08), cold (p=0.96), pillows (p=0.93), firmness (p=0.98), other sleeping surface issues (p=0.08), or safety (p=0.28), but mean differences were seen for humid (0.04), smell (0.04), and softness (p=0.02), with respondents to the Spanish version reporting a lower degree of disturbance due to these factors.

Conclusion: There were no significant differences seen in overall scores between those that completed the English and Spanish versions. Future studies can use the Spanish version of the ASE when assessing this population.

Support (If Any):

0067

SLEEP DISPARITIES AND THE ACADEMIC ACHIEVEMENT GAP IN 1.9 MILLION COLLEGE STUDENTS

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Introduction: Adults from under-represented minority groups (URM) disproportionately experience sleep disturbances. Sleep disparities can be prevalent in academic settings, however, it is still unknown whether sleep disparities directly contribute to other disadvantages in URM students, such as the academic achievement gap. Using a national database of college students collected over 20 years, we investigated whether poor sleep quality mediated the relationship between race/ethnicity and grade point average (GPA).
Methods: We conducted secondary analyses on American College Health Association – National College Health Assessment survey data (ACHA-NCHA). The ACHA-NCHA I, II, IIb, IIc, and III surveys were conducted between 2000 and 2020, and included approximately 1,900,000 participants. We analyzed responses to questions regarding race/ethnicity, socioeconomic status, academic achievement (GPA), daytime sleepiness, and sleep health. Non-URM students were those identifying as non-Hispanic White or Asian whereas URM students included all other racial/ethnic identifications. We calculated a sleep-problems composite score by transforming each sleep item response into a z-score and averaging across all items.
Results: Sleep disparities were evident amongst the college students; relative to non-URM students, URM students reported fewer days per week that they felt rested (95% CIs: 3.884–3.895 vs. 4.155–4.161) and worse sleep-problem composite scores (95% CIs: .0453–.0496 vs. -.0226 – -.0199). In addition, there was significant evidence for an academic achievement gap, such that URM students reported significantly lower GPAs than non-URM students (95% CIs: 3.162–3.166 vs. 3.344–3.346). Feeling rested and sleep problem composite scores partially mediated the relationship between race/ethnicity and academic achievement (ps < .001), explaining 4.1% and 5.1% of the variance, respectively. These results were lower in magnitude than the contribution of socioeconomic status (25.3% of the mediation variance); however, sleep problems and feeling rested continued to explain significant variance even when controlling for socioeconomic status.
Conclusion: Sleep disparities contribute to academic achievement gaps experienced by URM students. The current findings indicate that university-wide sleep health programs may help to remove an unnecessary barrier to academic achievement, particularly if such programs incorporate behavioral change theory and address system-level financial, sociocultural, and environmental barriers to sleep quality.
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0068

IMPACT OF OSA THERAPY ON HEALTHCARE ECONOMICS: ACTUARIAL ANALYSIS OF OSA PREVALENCE, THERAPY ADHERENCE, CO-MORBIDITY, AND COSTS IN A LARGE CMS POPULATION COHORT

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Introduction: Research studying the economics of OSA therapy faces confounds including the prevalence of undiagnosed OSA, rate of diagnosed patients declining therapy, spectrum of treatment adherence, and effects of concurrent co-morbidity. We provide an actuarial analysis to study the economic impact of OSA therapy, accounting for these confounds, using the 2016-2018 Medicare 5% LDS Analytical File, a random sample of Medicare Claims containing approximately 2.9 million patients/year, resulting in N=2,001,538 eligible Fee-For-Service patients excluding managed care patients and incomplete data.
Methods: We segmented the study population into three cohorts and three 12-month time-periods. The cohorts analyzed were A) patients with OSA diagnosis and >12 months treatment, B) patients with OSA and <12 months treatment, and C) patients with OSA diagnosis who never received treatment, resulting in 1,351,838 patient-months. We analyzed the healthcare costs in each cohort in the year before treatment, the first year of treatment, and following treatment year. We applied actuarial risk adjustment within each cohort and time-period to provide a risk-adjusted cost comparison. Results were analyzed cross-sectionally given zero-to-seven co-morbidities among obesity, hypertension, type-II diabetes, depression, COPD, CHF, and/or prior stroke, facility-vs-home testing, and with-or-without surgical procedures.
Results: The average per-patient-per-month (PPPM) total medical spending was highest in the diagnosed-but-never-treated cohort-C ($1,375), second highest in <12-months treatment cohort-B ($1,005), and lowest in >12-months treatment cohort-A ($983). In both cohorts that started therapy, average/quantile costs decreased from pre-treatment year to post-treatment year, and from the first-to-second year on therapy. Compared to no-therapy cohort-C, costs were 29% lower in cohort-A and 27% lower in cohort-B. Among co-morbid, 75th quartile of cost members, we observed similar differences (18% and 16%) but larger absolute dollars. Patients undergoing surgical procedures had higher costs but lower spend reduction in initial and following year of therapy (22% and 5%).
Conclusion: We observed significant differences in cost between OSA patients that started treatment versus those that did not, and those differences further increased the year following therapy onset. These findings imply that receiving treatment for OSA reduces a patients overall medical spend. In terms of mean cost, the >12-month and <12-month cohorts costs fell in both follow-up treatment years.
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