store-and-forward technology (SFT) for carrying out home sleep apnea testing (HSAT), using WatchpatDirect® Peripheral Arterial Tonometry-based testing. This led to a substantial decrease in reliance on care in the community (CITC) or out-of-VA care, resulting in fiscal savings. Interpretation of studies is done by VA physicians using a cloud-based network, resulting in improved workforce optimization and continuity of care.

Methods: We compared CITC expenditures for sleep studies in financial year (FY) 2019 (October 2018 to September 2019) with that of FY2020 in the VA Support Service Center Capital Assets (VSSC) database.

Results: In FY2019, VAMHCS conducted 402 polysomnograms, 805 HSATs and referred 64 patients to CITC, including 5 HSATs, with CITC costs of $102,388. CITC referral initiated by primary care providers often resulted in clinic visit and polysomnography (PSG). In FY2020, VAMHCS conducted 436 PSGs, 986 HSATs and referred 10 patients to CITC, including 3 HSATs, costing $6,780; a decrease of $95,608 compared to FY2019. The ratio of VA to CITC studies was 18:1 in FY2019, compared to 142:1 in FY2020. VAMHCS conducted 166 HSATs between 3-15-2020 and 6-30-2020, while the sleep lab was closed due to COVID surge, at a cost of $160 per study. According to VSSC data, an average of $1,005 is spent per patient (including a third-party administrator fee of $200) when utilizing CITC. Approximately 80% of CITC referrals underwent PSG. If all studies were done using CITC, it would have cost an additional $ 140,270. The cost would have been $546, 855 if all studies done between 3-15-2020 and 9-30-2020 were done through CITC.

Conclusion: The use of SFT during the pandemic resulted in VAMHCS relying less on CITC, leading to a decrease in expenditure, administrative burden and turnaround time. SFT minimizes the risk of infection transmission because PAT probes are disposable and obviates patient visits to the hospital.

Support (if any):

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CHRONOTYPE ASSOCIATIONS WITH INSOMNIA, DEPRESSIVE SYMPTOMS, AND CHANGES IN SLEEP AND HEALTH BEHAVIORS DURING THE COVID-19 PANDEMIC

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Introduction: Evening chronotype (i.e., night owl preference) is associated with worse insomnia and depressive symptoms, and poorer health behaviors. The aim of this study was to examine the association between chronotype and these symptoms and health behaviors during COVID-19 pandemic quarantine.

Methods: An online survey, distributed internationally via social media from 5/21/2020–7/1/2020, asked adults to report sociodemographic/economic information, changes in sleep (midpoint, total sleep time, sleep efficiency, time-in-bed), and health behaviors (i.e., physical activity, sedentary screen time, and outdoor light exposure patterns) from prior to during the pandemic, chronotype preference (definitely morning [DM], rather more morning [RM], rather more evening [RE], or definitely evening [DE]), and complete the Insomnia Severity Index (ISI) and the 10-item Center for Epidemiologic Studies Depression scale (CES-D-10). Multinomial logistic regression and ANCOVA models, adjusting for age and sex, examined associations of chronotype with COVID-19 pandemic related impacts on sleep, depressive symptoms, and health behaviors.

Results: A subsample of 579 participants (M age: 39y, range: 18–80; 73.6% female), currently under quarantine and neither pregnant nor performing shift work, represented each chronotype evenly (~25%). Participants delayed their sleep midpoint by 72.0min (SD=111.5) during the pandemic. DE chronotypes had a greater delay than morning types (M±SD DE: 91.0±9.0 vs. RM: 55.9±9.2 & DM: 66.1±9.3; p=0.046) with no significant change in other sleep patterns relative to other chronotypes. However, DE and RE chronotypes had greater odds of reporting that their new sleep/wake schedule was still not consistent with their "body clock" preference relative to morning types (X2[15]=54.8, p<0.001), reported greater ISI (F[3,503]=5.3, p=.001) and CES-D-10 scores (F[3,492]=7.9, p<.001), and had greater odds for increased or consistently moderate-to-high sedentary screen time (X2[12]=22.7, p=0.03) and decreased physical activity (X2[12]=22.5, p=0.03) than DM chronotype. There was no significant difference in change in outdoor light exposure by chronotype (X2[12]=12.1, p=0.43).

Conclusion: In an international online sample of adults under COVID-19 pandemic quarantine, evening chronotypes, despite taking the opportunity to delay sleep to match biological clock preference, reported their sleep/wake schedules were still inconsistent with personal preference, and reported greater insomnia and depressive symptoms, and odds of engaging in poorer health behaviors than morning chronotypes.

Support (if any):

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CHRONOTYPE, MOOD, AND DIABETES-RELATED DISTRESS IN ADULTS WITH TYPE 2 DIABETES

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Introduction: Chronotype refers to an individual's preferred timing of sleep and wakefulness, which can be classified as 'normal' or 'late' chronotypes. The purpose of this study was to examine whether late sleep timing was associated with impaired mood and diabetes-related distress in persons with type 2 diabetes (T2D).

Methods: The study is a secondary analysis of pooled cross-sectional baseline data from two studies of treatment of obstructive sleep apnea (R01-DK96028) and insomnia (K24-NR016685) in persons with T2D. Sleep timing was measured by the bedtime from a 7-day sleep diary. "Normal" sleep timing was defined as bedtime between 9PM to 12AM ≥ 85% per week. "Late" sleep timing as bedtime after 12AM with normal sleep timing < 85% per week. Other sleep variables evaluated were sleep duration, daytime sleepiness (Epworth Sleepiness Scale [ESS]), and OSA severity (apnea-hypopnea index [AHI]). The Profiles of Mood States measured Total Mood Disturbance (TMD) and the subscales of Tension-Anxiety (T-A), Depression-Dejection (D-D), Anger-Hostility (A-H), Vigor-Activity (V-A), Fatigue-Inertia (F-I), and Confusion-Bewilderment (C-B). Diabetes-related distress was measured by the Problem Areas in Diabetes (PAID). Hierarchical multiple regression was performed to determine whether sleep timing was associated with mood and diabetes-related distress.

Results: The sample (N=296) had 61% with late sleep timing (n=181). Persons with normal vs late sleep timing were similar in age, sex, race, and education (p >.05). Persons with late sleep timing were less likely to be partnered, had shorter sleep duration and greater mood impairment (TMD and T-A, D-D, A-H, C-B subscales) than those with normal timing (all p values <.05); there was no significant difference by sleep timing in PAID scores (p=.256). Hierarchical regression analyses adjusting for demographics (age, sex, race, marital status, education level), clinical (HbA1c, BMI), and sleep variables (sleep duration, ESS, AHI) revealed that late sleep timing was not