Abstract

Detecting the Undiagnosed: Findings on Sleep Apnea Identification in Veterans With Insomnia Using at-Home Sleep Monitor Technology

Erin Reilly[1], MEd, Ph.D; Beth Ann Petrakis[2], MPA; Wilfred Pigeon[3], Ph.D.; Eric Kuhn[4], PhD; Keith McInnes[2], MsC, SCD; Jason Owen[4], PhD; Renda Wiener[2], MD, MPH; Karen S Quigley[1,2], PhD

[1]Social & Community Reintegration Program, Edith Nourse Rogers Memorial VA Hospital, Bedford, MA, United States

[2]Center for Healthcare Organization and Implementation Research, Edith Nourse Rogers Memorial VA Hospital, Bedford, MA, United States

[3]Canandaigua VA Medical Center, VA Center of Excellence for Suicide Prevention, Canandaigua, NY, United States

[4]VA National Center for PTSD, Dissemination and Training Division, Palo Alto, CA, United States

Corresponding Author:
Erin Reilly, MEd, Ph.D
Social & Community Reintegration Program, Edith Nourse Rogers Memorial VA Hospital
200
Springs Rd
Bedford, MA,
United States
Phone: 7816874191
Email: erin.reilly@va.gov

Abstract

Background: Sleep disorders are a serious national health issue. Insomnia and sleep apnea are the most commonly diagnosed, with serious negative impacts including increased mortality, performance problems, accidents, and health-care utilization. Given a high level of apnea in persons with insomnia (29%), the incorporation of objective measures of sleep for at-home sleep monitoring for clinical trials may assist in potential sleep apnea detection and treatment for persons with insomnia. This may be particularly important for military personnel, as a 372% increase in insomnia encounters and a 517% increase in apnea encounters was recently reported for this population.

Objective: The primary goal of this pilot trial was to assess usability and feasibility of mobile health information technologies (HITs) designed to reduce insomnia in post-9/11 Veterans. As this pilot focused on insomnia treatment with HITs, veterans with an objective sleep measure indicating moderate to severe sleep apnea were withdrawn. Participants used a home-based sleep monitor (WatchPAT) which has been validated against polysomnography and derives the Apnea-Hypopnea Index (AHI) from arterial tonometry, pulse oximetry and snoring. We report here on the positive screening rate for sleep apnea in our sample of Veterans with insomnia, a secondary but clinically significant finding within this HIT pilot.

Methods: Thirty-eight Veterans were enrolled who met criteria for insomnia on the Insomnia Severity Index, with 33 Veterans in total engaging in the first night of sleep monitoring. A WatchPAT device provided screening results based on AHI scores over 1-2 nights of home use. Those with sleep apnea above the mild range, i.e., AHI > 15 (moderate or severe), were withdrawn from the trial and referred for further assessment.

Results: Of the 33 veterans who completed the first night of sleep monitoring at home, a total of eighteen (54.5%) were identified as having moderate to severe sleep apnea as indicated through WatchPAT measurement. Demographic predictors of apnea were also explored, as apnea rates increase with age and occur more frequently in higher weight individuals. Results were unexpected given the mean age of the final sample (43.8 years, SD = 11.3), as age did not differ between those with no/mild apnea vs. moderate/severe apnea (t (31) = 0.89, ns). However, those with moderate/severe apnea had a significantly higher body mass index (BMI; 30.7, SD = 4.5 vs. 26.8, SD = 2.9; t (31) = 2.88, *P*<.01).

Conclusions: The pilot demonstrated a higher-than-expected positive screen rate for apnea in post-9/11 Veterans. The high co-occurrence of sleep apnea and insomnia in these Veterans suggests the need to conduct comprehensive clinical sleep assessments for Veterans reporting chronic insomnia since apnea may blunt the effectiveness of insomnia interventions. Sleep apnea is treatable and successful treatment can enhance overall health and quality of life. Given the persistence of insomnia in patients treated for sleep apnea, clinicians should also re-assess for insomnia following apnea treatment to determine whether insomnia has resolved.

XSL•FO
RenderX

The use of at-home sleep monitors may thus provide a mobile, wearable, and usable at-home sleep monitors for such assessment and treatment.

Multimedia Appendix 1

Full poster.

[PDF File (Adobe PDF File), 808KB-Multimedia Appendix 1]

XSL•FO

RenderX