



Objective and subjective measurement of sleep disturbance in female trauma survivors with posttraumatic stress disorder



Kimberly B. Werner^{a,*}, Michael G. Griffin^b, Tara E. Galovski^c

^a George Warren Brown School of Social Work, Washington University in St. Louis, Saint Louis, MO, USA

^b Department of Psychology, Center for Trauma Recovery, University of Missouri – Saint Louis, Saint Louis, MO, USA

^c Women's Health Sciences Division, National Center for PTSD, VA Boston Healthcare System, Boston, MA, USA

ARTICLE INFO

Article history:

Received 29 May 2015

Received in revised form

30 March 2016

Accepted 15 April 2016

Available online 19 April 2016

Keywords:

Posttraumatic stress disorder

Women

Sleep

Actigraphy

ABSTRACT

Sleep disturbance may be the most often endorsed symptom of posttraumatic stress disorder (PTSD). Much of this research is based on subjective reports from trauma survivors; however, objective measures of sleep-related impairment have yielded findings inconsistent with self-report data. More studies investigating subjective and objective assessments concordantly are needed to understand sleep impairment in PTSD. The current study examined PTSD-related sleep disturbance in a female interpersonal violence cohort with full PTSD diagnoses ($N=51$) assessing subjective (global and daily diary measures) and objective (actigraphy) sleep measures concurrently. PTSD severity was positively associated with global, subjective reports of sleep impairment and insomnia. Subjective measures of sleep (including global sleep impairment, insomnia, and daily sleep diary reports of total sleep time, sleep efficiency, and sleep onset latency) were moderately to strongly correlated. However, no significant correlations between subjective and objective reports of sleep impairment were found in this cohort. Analyses demonstrated an overall elevation in subjectively reported sleep impairment when compared to objective measurement assessed concurrently. Findings demonstrate a lack of agreement between subjective and objective measurements of sleep in a PTSD-positive female cohort, suggesting objective and subjective sleep impairments are distinct sleep parameters that do not necessarily directly co-vary.

© 2016 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

The prevalence of posttraumatic stress disorder (PTSD) following a trauma is estimated to fall between 5% and 10% (American Psychiatric Association (APA), 2000; Breslau, 2002) in the general population with higher rates diagnosed in women [10–13%; (Breslau et al., 1998; Kessler et al., 1995)]. With rates of sleep disturbance ranging from 70 to 87% in PTSD populations, sleep disturbance may be the most frequently endorsed symptom of PTSD following exposure to a traumatic event (Germain, 2013; Leskin et al., 2002; Ohayon and Shapiro, 2000). Although, some researchers argue sleep disturbance experienced after a trauma is transient (Lavie, 2001), others identify sleep disturbance as the hallmark feature of PTSD (Ross et al., 1989). Two clusters of the *Diagnostic and Statistical Manual 5th Edition* [DSM-5; (APA, 2013)] PTSD symptom criteria include sleep problems: re-experiencing cluster (recurrent or distressing dreams) and hyperarousal cluster

(difficulty falling or staying asleep), the latter of which is endorsed by most participants with the disorder (Ohayon and Shapiro, 2000). Sleep disturbance, is often considered the most treatment refractory of the 17 symptoms of PTSD (APA, 2000). In fact, the refractory nature of this particular symptom has led to recent reports that over 50% of patients continue to experience insomnia even after treatment with PTSD-specific cognitive behavioral therapy (Zayfert and DeViva, 2004) suggesting insomnia is a primary condition in this population.

Given the significance of sleep disturbance in the PTSD population, numerous investigations have utilized multiple assessment tools including self-report subjective assessments, daily sleep diaries, and objective measures such as polysomnography (PSG) and actigraphy. Collectively, results from these studies have not yielded consistent estimations of sleep impairment across measures or PTSD cohorts. Subjective sleep measures have identified significantly greater sleep disturbance associated with PTSD samples when compared to healthy controls (Ohayon and Shapiro, 2000), trauma survivors without PTSD (Neylan et al., 1998), and non-traumatized elective surgery controls (Koren et al., 2002), while others have reported less disturbance (Calhoun et al., 2007)

* Correspondence to: Washington University in St. Louis, George Warren Brown School of Social Work, 660 S. Euclid Ave., #8134, St. Louis, MO 63110, USA.

E-mail address: KBWerner@wustl.edu (K.B. Werner).

compared to others without PTSD. Furthermore, objective assessment of PTSD-related sleep disturbance with PSG and, more recently, actigraphy has demonstrated more similarities than differences between non-PTSD and PTSD samples. In a prospective study, Klein et al. (2003) investigated sleep disturbance in motor vehicle accident survivors with actigraphy and compared findings with the subjective reports as measured by the mini-sleep questionnaire. Results showed subjective reports of sleep impairment were predictive of PTSD development one year later, but objective assessment was not significantly related to PTSD. Dagan et al., (1997) investigated PTSD-related sleep disturbance with actigraphy in combat veterans in their home environment. They reported that participants with PTSD describe more severe sleep disturbance compared to healthy controls, but, sleep disturbance as measured by actigraphy is within normal limits and not different from sleep in healthy controls. In a meta-analysis of studies utilizing PSG to investigate sleep disturbance in PTSD, (Kobayashi et al., 2007) found that total sleep time and sleep onset latency were not significantly different than individuals without PTSD across studies. Further, a more recent review reported that sleep disturbance measured by actigraphy displayed similar results to PSG findings across sleep studies (Khawaja et al., 2014) and that sleep disturbance did not differ between PTSD and non-PTSD participants.

Within-subject studies comparing subjectively assessed (self-report) and objectively measured PTSD-related sleep disturbance have demonstrated discrepancies across methods of measurement. Studies utilizing PSG have shown that those with PTSD report less total sleep time and greater sleep onset latency on self-report measures compared to PSG (Hurwitz et al., 1998; Woodward et al., 1996). More recent comparison studies with actigraphy technology have also reported inconsistencies in PTSD-related sleep. Westermeyer et al. (2007) found that combat veterans with PTSD reported significantly less total sleep time and fewer episodes of waking after sleep onset compared to the same aspects of sleep impairment as measured by actigraphy. Calhoun et al. (2007) within subject comparisons also demonstrated that those with PTSD described less time lost to awakenings after sleep onset but more total sleep time on daily diary measures as compared to actigraphy assessment of sleep on the same night. The observed discrepant patterns of subjectively and objectively measured sleep are inconsistent across studies. Finally, others have reported the subjective and objective sleep discrepancies may not be unique to sleep impairment in the context of PTSD (Kobayashi et al., 2012).

Research examining sleep in women with PTSD is lacking and, as gender differences have been specifically found in subjectively assessed sleep impairment and PTSD following trauma (Kobayashi and Delahanty, 2013), patterns of discrepancies in subjective and objective reports of sleep impairment in men may not emerge similarly in women. In fact, the only study to investigate subjectively reported and objectively measured PTSD-related sleep disturbance in an all-female PTSD cohort, found significantly less sleep impairment as measured by self-report compared to sleep impairment measured objectively (Calhoun et al., 2007). Calhoun et al. investigated sleep in women diagnosed with PTSD secondary to mixed trauma histories using the Pittsburgh Sleep Quality Index [PSQI; (Buysse et al., 1989)] morning sleep logs and actigraphy. Participants with PTSD reported significantly poorer sleep on the PSQI, lower sleep efficiency on the sleep logs, and decreased sleep efficiency and increased sleep onset latency on the actigraphy as compared to controls without PTSD. Although often considered a strength in sleep research, this study excluded individuals using sleep medication, limiting generalizability to a large cohort of PTSD positive individuals who use sleep medication, and did not assess the impact of PTSD severity on sleep impairment. As Calhoun and colleague's findings only partially support previous

findings in male veteran and mixed gender, mixed trauma cohorts further research is warranted in female PTSD cohorts.

The current study aims to disentangle the assessment of sleep impairment as measured by global, standardized self-report measures, daily sleep diaries, and objective measures by investigating sleep impairment with these measures within a sample of adult women suffering from full PTSD secondary to interpersonal violence (IPV). In addition, we will extend and clarify previous findings in a cohort of women by investigating the impact of PTSD severity and reported level of sleep medication use on concurrently-measured, objectively assessed, and subjectively-reported sleep impairment. To address these overarching goals, we (a) tested the relationship between measures of sleep impairment including global self-report (PSQI and Insomnia Severity Index), daily sleep diaries and actigraphy and assess the relationship of these measures with reported PTSD severity. Further, we also (b) assessed differences in sleep characteristics between those who endorse having taken medication to help sleep in the past month (sleep medication users) and those not using sleep medication (non-users) across all sleep measures. Lastly, we (c) examined differences between sleep characteristics – total sleep time, sleep onset latency, waking after sleep onset, and sleep efficiency – across concurrently measured daily sleep diaries and actigraphy.

2. Methods

The following protocol was approved by the Institutional Review Board at the University of Missouri –Saint Louis as part of a larger PTSD treatment study. Participants were recruited by word of mouth and through victim assistance agencies, newspapers, and flyers posted to communal areas including but not limited to restaurants, college campuses, grocery stores, and community bulletin boards. All participants were assessed for psychopathology by trained M. A. and pH. D. level clinicians. All participants gave written informed consent prior to beginning the study and were compensated for their participation in the initial assessment portion of the study.

2.1. Subjects

Participants were drawn from a larger treatment-outcome study ($N=92$) focusing on sleep-directed treatment as a complement to cognitive processing therapy for PTSD. The sample consisted of treatment-seeking female interpersonal violence (IPV) survivors of childhood or adult physical or sexual abuse, who completed up to seven nights of actigraphy monitoring ($n=51$). Inclusion criteria included a PTSD diagnosis with sleep impairment as defined as a total score of 3 or higher for frequency and intensity on symptom D1 (trouble initiating or falling asleep) on the Clinician-Administered PTSD Scale [CAPS (Blake et al., 1990)] and an age of 18 years or older. Exclusion criterion for this study included current psychosis, active suicidality, current dependence on drugs or alcohol, and living in an ongoing traumatic situation (e.g., domestic violence). Psychotropic medication usage was not excluded, but the participants were required to be stabilized on their medication for a month prior to and during the course of the study. Sleep medication use was not excluded and its effects on sleep parameters are considered in the main analyses. Participants could not receive any outside trauma- or sleep-focused psychotherapy throughout the course of the study. Data used in the current analyses were collected at the pre-treatment assessment and participants were not receiving any study-related treatment at the time.

Download English Version:

<https://daneshyari.com/en/article/6813328>

Download Persian Version:

<https://daneshyari.com/article/6813328>

[Daneshyari.com](https://daneshyari.com)