



Research Paper

Sleep Disturbances in Patients With Major Depressive Disorder: Incongruence Between Sleep Log and Actigraphy



Pei-Ying Kung^a, Kuei-Ru Chou^b, Kuan-Chia Lin^c, Hsin-Wei Hsu^d, Min-Huey Chung^{b,*}

^a Tri-Service General Hospital Songshan Branch, Taipei, Taiwan

^b Graduate Institute of Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan

^c Department of Health Care Management, National Taipei University of Nursing and Health Sciences, Taipei, Taiwan

^d Taipei City Hospital, Songde Branch, Taipei, Taiwan

ABSTRACT

Objective: Depression has become a severe global health problem, and sleeping difficulties are typically associated with depression. The purpose of this study was to investigate the relationships among subjective sleep quality, objective sleep quality, and the sleep hygiene practices of hospitalized patients with major depressive disorder. **Method:** Daily sleep logs and actigraphy were used to obtain subjective and objective sleep data. Thirty patients were recruited from a regional teaching hospital in Taipei and completed the Hamilton Rating Scale for Depression and the Sleep Hygiene Practice Scale.

Results: Significant differences were found between subjective and objective sleep data in patients with major depressive disorder (MDD). For patients with more severe depression, subjective measurements obtained using sleep logs, such as total sleep time and sleep efficiency, were significantly lower than those obtained using actigraphy by controlling for demographics.

Conclusions: The results regarding the differences between subjective and objective sleep data can be a reference for care providers when comforting depression patients who complain of sleep disturbance.

© 2014 Elsevier Inc. All rights reserved.

Currently, major depression is a severe global health problem. The World Health Organization reported that the global prevalence of major depression is 5–10%, and the lifetime prevalence rate for women is 10–20%, which is higher than the lifetime prevalence rate for men (World Health Organization, 2009). In recent years, sleep problems have been considered seriously and most research has focused on adults without mental diseases; however, 90% of people who experience depression complain about sleep quality (Tsuno, Besset, & Ritchie, 2005). Forty percent of patients with major depressive disorder (MDD) complain of sleeping problems, such as difficulty falling, staying asleep, or waking up early in the morning (Perlis et al., 1997). Therefore, sleeping difficulties have been associated with and are a precursor and a negative prognostic factor of the depression (Ford & Cooper-Patrick, 2001).

Sleep disturbance, which is a common complaint among MDD patients, involves impairment of both subjective and objective sleep parameters. Questionnaires or sleep diaries can be used to assess the subjective sleep data of a patient, and actigraphy can be employed to objectively assess sleep data (Buysse, Ancoli-Israel, Edinger, Lichstein, & Morin, 2006). A previous study exploring the effects of cognitive behavioral therapy indicated that all measures from sleep diary and

actigraphy, except for total sleep time (TST), were increased in patients with comorbid MDD and insomnia (Manber et al., 2008). Moreover, compared with the objective parameters of people without MDD, the objective parameters of patients with MDD have suggested that the sleep patterns of MDD patients exhibit increased sleep latency, decreased TST, more nocturnal awakenings, decreased sleep efficiency, earlier waking times, longer sleep latency, and greater wake-after-sleep-onset (Gupta, Dahiya, & Bhatia, 2009). Sleep structure varies in patients with MDD, and subjective complaints about sleep disorders are common (Saletu-Zyhlarz et al., 2002).

Depression produces negative biases that occur during information processing (Nolen-Hoeksema & Hilt, 2008). Thus, patients with MDD may be biased and report poor sleep quality even when objective data indicate that they experienced undisturbed sleep (Chen, Burley, & Gotlib, 2012). The relationship between sleep disturbances and depression has been researched widely (Gupta et al., 2009; Mayers, Grabau, Campbell, & Baldwin, 2009; McCall et al., 2010; McNamara, Auerbach, Johnson, Harris, & Doros, 2010). However, data from studies that simultaneously assessed sleep subjectively and objectively are rare (Matousek, Cervena, Zavesicka, & Brunovsky, 2004; McCall et al., 2012). Because the subjective and objective data of patients with depression differ, and patients tend to process information with negative biases, the present study investigated the relationship between subjective and objective sleep quality, sleep hygiene practices, and depression level in hospitalized patients with MDD. Because the causal direction of insomnia and depression is unclear, objective and subjective

Conflict of interest disclosure: The authors report no conflicts of interest.

* Corresponding Author: Min-Huey Chung, RN, PhD, Graduate Institute of Nursing, Taipei Medical University, No.250, Wu-Xing Street, Taipei, Taiwan, 110, R.O.C.

E-mail address: minhuey300@tmu.edu.tw (M.-H. Chung).

evaluations of sleep quality can serve as a reference for nurses caring for patients with MDD and comorbid sleep disturbances.

METHOD

A cross-sectional correlational design was employed to explore the relationship between and compare objective and subjective sleep data. The sample comprised 30 Taiwanese adults (18 women and 12 men; mean age, 42.97 years) who fulfilled *Diagnostic and Statistical Manual of Mental Disorders-IV-text revision (DSM-IV-TR)* criteria for major depression and were recruited from a medical center and a regional teaching hospital. All patients were physically healthy and none of their medical conditions caused their depression. People who fulfilled the criteria for a lifetime diagnosis of schizophrenia, schizoaffective disorder, organic affective syndrome, bipolar disorder, or borderline or antisocial personality disorder or had a history of alcohol or substance dependence were excluded.

MEASURES

Hamilton Rating Scale for Depression

Upon beginning this study, patients completed a 17-item version of the Hamilton Rating Scale for Depression (HRSD), which was administered by a trained independent clinician. The HRSD, developed by Hamilton and published in 1960 (Bagby, Ryder, Schuller, & Marshall, 2004; Hamilton, 1960), is a clinician-administered interview scale that evaluates the experiences of the present and past weeks by assessing varied responses to items that gauge the severity of 17 symptoms of depression. The total score ranges from 0 to 52; eight items are ranked from 0 to 2 and nine items are ranked from 0 to 4 (higher scores indicate greater depression severity). Studies investigating the HRSD have indicated that the questionnaire has a wide range of internal consistency (Cronbach's $\alpha = 0.46\text{--}0.97$) and interrater reliability ($\gamma = 0.82\text{--}0.98$) (Bagby et al., 2004). The HRSD has been verified as having acceptable internal consistency (Cronbach's $\alpha = 0.71$) and high interrater reliability (0.92) (Hsiao, 2009; Zheng et al., 1988).

Sleep Hygiene Practice Scale

The Sleep Hygiene Practice Scale (SHPS) is used to assess four domains: arousal-related behaviors, sleep scheduling and time, eating and drinking behaviors, and sleep environment. The SHPS is a 30-item self-rating scale. Respondents rate how frequently they engage in behavioral practices on a 6-point Likert scale, ranging from 1 (*never*) to 6 (*always*) (Yang, Lin, Hsu, & Cheng, 2010). Higher scores indicate a higher frequency of inappropriate sleep hygiene behavior (Lin, Yang, Hsu, & Cheng, 2009). A previous study comparing patients with insomnia with those without insomnia indicated that the Cronbach's α value was 0.58 and 0.70, respectively, for arousal-related behavior; 0.65 and 0.67, respectively, for sleep environment; 0.70 and 0.72, respectively, for eating and drinking behavior; and 0.74 and 0.82, respectively, for sleep scheduling and timing (Yang et al., 2010).

Subjective Sleep Quality: Sleep Log

Each morning for 14 consecutive days, participants in this study completed a sleep log that was used to assess subjective sleep according to information such as bedtime, estimated time required to fall asleep (sleep latency, SL), waking episodes, TST, rising time, and number and duration of daytime naps. Total time spent in bed was calculated by subtracting the bedtime from the rising time. Sleep efficiency was calculated as the ratio of TST to total time spent in bed. In addition, the participants recorded their sleep quality (ranging from 0 to 5; lower scores indicated more tiredness and poorer sleep quality).

Objective Sleep Quality: Actigraphy

Each participant wore a wrist actigraph (Mini Motionlogger Actigraphy, Ambulatory Monitoring, Ardsley, NY, USA) on the nondominant wrist 24 hours per day for 2 weeks during the prospective screening step. The actigraphic data were analyzed to monitor the activity level of shift nurses at 1-minute intervals throughout the study. We used the "zero crossing mode" of an automatic sleep-scoring program to calculate the number of times in 1 minute that the activity signal level crossed zero. The total time spent in bed, TST, sleep-onset latency, waking after sleep onset, waking episodes, and sleep efficiency were calculated using Action W2 software.

Data Collection

The HRSD as well as 2 weeks of sleep logging and actigraphy was used to assess the severity of the present depressive episode and sleep data. Patients who participated in the study provided informed consent. During the first night, the patients adapted to the environment; sleep data from the second night were used for analysis. Lights were typically turned off at 10:00 p.m. and turned on at 6:00 a.m., according to the habitual sleep or wake schedule in the psychiatric ward. The data collected were anonymous and carefully examined to determine whether the completed responses were usable for scoring and verification.

Ethical Approval

This study was approved by the Taipei City Hospital Institutional Review Boards and Tri-Service General Hospital (approval numbers TCHIRB-990802-E and SS099-02). All participants received an informed consent form that explained the study and informed them of their responsibilities and rights to withdraw at any time during the study. Participants were voluntary and anonymous in this study.

Statistical Analysis

SPSS for Windows Version 17.0 software was used to perform data analysis in this study. Before analysis, all data were examined to ensure accuracy and identify missing values. Descriptive analysis was employed to examine the demographic data. The data and distribution of each parameter are expressed using frequencies, percentages, averages, and standard deviations (SDs). The paired *t* test, Pearson's correlation test, and multiple linear regression were performed to ascertain the relationship between subjective and objective sleep data.

Table 1
Demographic Characteristics of the Sample ($N = 30$)
HRSD: Hamilton Rating Scale for Depression.

Variable	<i>n</i> (%)
Gender	
Male	12 (40.0)
Female	18 (60.0)
Smoking status	
No	21 (70.0)
Yes	9 (30.0)
Drinking alcohol status	
No	27 (90.0)
Yes	3 (10.0)
Chronic disease	
No	21 (70.0)
Yes	9 (30.0)
Variable	Mean \pm SD
Age, years	42.97 \pm 11.21
Psychiatric hospitalization (number of times)	5.93 \pm 5.19
Sleep hygiene practice	95.20 \pm 19.22
HRSD	21.63 \pm 3.62

Download English Version:

<https://daneshyari.com/en/article/6787122>

Download Persian Version:

<https://daneshyari.com/article/6787122>

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