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Insomnia and sleep quality among primary care physicians with low and high burnout levels

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Abstract

Objective: The aim of this study was to assess insomnia and sleep quality in primary care physicians with low and high burnout scores. **Methods:** A representative sample of 240 physicians was drawn from 70 medical centers in Madrid, Spain. Based on quartile splits of the overall index of the Shirom–Melamed Burnout Questionnaire, 55 participants were allocated to a low-burnout group, and 58 were included in a high-burnout group. The questionnaire also included sociodemographic data, insomnia symptomatology, and the Pittsburgh Sleep Quality Index. **Results:** Of the total sample, 18.8% met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* criteria for insomnia diagnoses. More individuals with high burnout scores (21.1%) than individuals with low burnout scores (6.9%) fulfilled these criteria. Results of multivariate logistic regression analyses showed that burnout was the only variable related to insomnia diagnoses (odds ratio=7.56; 95% confidence interval=2.38–14.02). Furthermore, the results of multivariate analysis of covariance, after adjustments for sociodemographic variables, indicated that subjects from the high-burnout group scored significantly higher than subjects from the low-burnout group on the global sleep quality index and its components, indicating significantly greater disturbed sleep for the former. **Conclusion:** The results of the present study provide support for a clear relationship between burnout and disturbed sleep, as shown by the high prevalence of insomnia and poor sleep quality among physicians with high levels of burnout.

Keywords: Burnout; *DSM-IV* insomnia criteria; Sleep quality; Primary care physicians

Introduction

The relationship between disturbed sleep and burnout has been documented using both subjective and objective assessment methods. Thus, based on self-reports, several studies have shown that subjects scoring high on burnout have disturbed sleep [1–3]. Other authors who assessed sleep quality with the Karolinska Sleep Diary, by comparing subjects with low, moderate, and high levels of burnout, found significant differences among groups in terms of tension at bedtime, difficulty falling asleep, fatigue upon awakening, and quality of sleep, with individuals with high burnout scores showing poorer sleep quality [2]. Another study by the same group [4] found that women scoring high on burnout reported greater sleepiness, impaired sleep quality, and more frequent awakenings than those scoring low. Finally, a recent study, using polygraphic sleep measures, found an increased number of arousals in young individuals with high burnout scores as compared to their counterparts with low burnout scores [5].

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To our knowledge, there are a few studies that have addressed the prevalence of insomnia symptoms in individuals with high burnout scores. In a study with blue-collar workers, Melamed et al. [1] found that subjects complaining of chronic burnout (≥6 months) showed significantly more insomnia symptoms than those with nonchronic burnout or those without signs of burnout. On the other hand, a recent electronic diary study has examined this topic, finding that clinically burnt-out subjects complained about trouble falling asleep and nonrefreshing sleep [6].

Disturbed sleep has been considered a mechanism that is likely involved in the development of the burnout syndrome symptomatology, which is understood as the chronic depletion of an individual's energy resources [7,8]. According to this conceptual view, burnout is a syndrome characterized by feelings of being depleted of physical, emotional, and cognitive energies, and is considered a consequence of strain from workplace stressors, without sufficient recovery [7,9,10]. This concept of burnout is based on the conservation of resources (COR) theory [11,12], which is related to loss of energy resources, as formulated by Shirom [7]. The COR model proposes that individuals seek to acquire and maintain resources, and that stress is the result of a threat to resources, loss of resources, or failure to regain resources following resource investment. Hobfoll [11] defined resources as "those objects, personal characteristics, conditions, or energies that are valued by the individual" (p. 516). Thus, burnout can occur when individuals experience a cycle of resource loss over a period of time at work which cannot be replenished [13]. This process is best described as a "vicious circle" in which burnt-out individuals may exacerbate their losses as a result of facing stressors, causing further deterioration. Furthermore, from the viewpoint of the COR theory, it can be argued that individuals can use their sleep as an opportunity to reduce burnout symptoms and to replenish lost resources [14,15].

Due to the scarcity of research on insomnia, such as in burnout, we were interested in assessing the presence of insomnia using standardized clinical criteria in a sample of primary care physicians—a group that is well-known to be at high risk for developing burnout. We hypothesized that individuals with high levels of burnout would display a higher prevalence of insomnia symptoms and poorer sleep quality than individuals with low burnout scores.

Methods

Participants and procedure

The data presented here were collected as part of a protocol with the main goal of assessing the prevalence of the burnout syndrome among physicians of primary care centers in Madrid, Spain. Participants were drawn, using stratified random sampling, from 70 centers selected from a total of 210. This design was chosen as the one that best represents the population of primary care physicians in the region. Letters of invitation were sent to the medical supervisors of each of the 70 centers. Along with this letter were included the questionnaire and a self-addressed stamped envelope, thus facilitating easy return of the questionnaires. When needed, a follow-up call to the supervisors was made for the return of the questionnaires. A final total of 53 centers participated in the study (center response rate, 75.6%).

Two-hundred forty physicians (75 men and 165 women; mean age, 41.9±7 years) participated in the study, with an individual response rate of 71.6%. Of this sample, 55 participants were allocated to a low-burnout group, and 58 were included in a high-burnout group, based on quartile splits (lower ≤2.20; upper ≥3.90) of the overall index of the Shirom–Melamed Burnout Questionnaire (SMBQ) [1,16]. Of these individuals, 30 were men and 83 were women, with a mean age of 41.4±8 years. Written informed consent was obtained from all participants. The research design was reviewed and approved by the institutional ethical committee of the Autonomous University of Madrid (no. CEI 11-184). Data collection took place between January and July 2005.

Measures

Quality of sleep was measured using the Spanish validation [17] of the Pittsburgh Sleep Quality Index (PSQI) [18], a standardized measure that has been widely used in sleep research. The PSQI is composed of 19 items that produce a global sleep quality index and 7 component scores reflecting sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of sleeping medications, and daytime dysfunction. Each component is scored from 0 to 3 points. The total index score is between 0 and 21, with higher scores indicating a lower quality of sleep. A global score of ≥5 indicates clinically significant sleep problems. In this study, a Cronbach's α of .80 was found. Numerous studies using the PSQI have supported high validity and good psychometric properties [18–20].

Insomnia was assessed according to the insomnia criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) [21]. The criteria are as follows: (a) "the predominant complaint is difficulty initiating or maintaining sleep, or nonrestorative sleep, for at least 1 month"; and (b) "the sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in daytime functioning." The operationalization of criteria for diagnosing insomnia is included in Table 1.

The following questions were used to evaluate the abovementioned criteria:

Criterion 1

(a) "During the past month, how long did it usually take you to fall asleep each night?" (difficulty initiating sleep)