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USAGE OF THE PITTSBURGH SLEEP QUALITY INDEX (PSQI)

UPOTREBA PITSBURŠKOG INDEKSA ZA PROCENU KVALITETA SPAVANJA

(PITSBURGH SLEEP QUALITY INDEX-PSQI)

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Abstract

Sleep is one of the basic needs and a physiological process necessary for life. There're a number of tests to assess sleep quality. Most of them are in the form of questionnaires with closed type questions or in the form of interviews. As the most widely used instrument for measuring sleep quality, the Pittsburgh Sleep Quality Index (PSQI) reports good internal reliability and validity. It's necessary that sleep and sleep quality have special attention in the field of public health, because good sleep quality is conducive to better health and well-being.

Key words

PSQI; dream; sleep quality; quality of life; fatigue.

Ključne reči

PSQI; spavanje; kvalitet spavanja; kvalitet života; zamor.

INTRODUCTION

Sleep is one of the basic needs and a physiological process necessary for life. People need sleep for several reasons: to cope with daily stress, to prevent fatigue, to conserve energy, to renew the mind and bodyand to fully enjoy life. Sleep improves our daily functioning. It's important for maintaining cognitive, physiological and psychosocial functions and is a

significant factor in a person's quality of life. However, sleep disorders and deprivation are often insufficiently recognized public health problems [1, 2].

Sleep and sleep quality

Sleep is considered a period of rest for the body and mind, during which the will and consciousness are partially or completely at rest and bodily functions are partially suspended. Sleep is also described as a state characterized by a reduced but easily reversible sensitivity to external stimuli. A good quality of sleep can promote a faster recovery of body function, alleviate the level of fatigue at work and maintain energy, physical strength and a healthy mental state [2-4].

Sleep quality is a key indicator of health. Sleep disorders are a very common problem, especially in western, industrialized countries. The prevalence of sleep disorders increases with age [4-8].

Most sleep disorders can be diagnosed with a comprehensive sleep history, which includes a detailed account of routine sleep habits. Sleep-wake rhythms have changed significantly, with people going to bed and waking up later and spending more time in bed, but, paradoxically, also reporting poorer sleep quality [5–9].

Sleep disorders are a group of conditions that affect the ability to sleep regularly and thus cause significant damage to a person's social and professional functions [7–9]. They represent a broad category of disorders that include all kinds of dysfunctions involving sleep, difficulty falling asleep, poor sleep quality, premature awakening, and circadian rhythm disorders. Atypical working hours and work schedules cause reduced sleep time, leading to sleepiness, fatigue, reduced cognitive performance and health problems in night shift workers. Normal sleep patterns are subject to change during aging and include changes in sleep patterns and nighttime awakenings. The modern way of life is associated with increased exposure to artificial light (shifting the light spectrum towards an artificial light source, which contains a strong blue component), reduced exposure to daylight, late meals, shift work, as well as frequent

changes of intercontinental zones. Chronic exposure to low-intensity blue light (artificial lighting), just before going to bed, can compromise sleep quality and circadian rhythm [9-15]. One third of the world's adult population has some kind of sleep problem [14,15].

Tests to assess sleep quality

Sleep and healthy sleep are one of the key needs of life and are vital for life for many reasons: to deal with stress throughout the day, prevent fatigue, conserve energy, and regenerate the body and mind. Normal physiological functions in humans are maintained by sleep, so the quality of life is significantly determined by the quality of sleep [14-16].

Today, a significant number of tests are in use to assess the quality of sleep. They're most often found in the form of questionnaires with closed type questions or in the form of interviews. These tests are simple to perform, don't require any additional equipment, are inexpensive to perform, and don't take a long time [16-19].

Questionnaires used for this purpose are: Pittsburgh Sleep Quality Index (PSQI), Athens Sleep Questionnaire (ASQ), Insomnia Severity Index (ISI), Mini-Sleep Questionnaire (MSQ), Jenkins Sleep Scale (JSS), Leeds Sleep Evaluation Questionnaire (LSEQ) and Epworth Sleepiness Scale (ESS) [20-22].

As the most widely used instrument to measure sleep quality, the PSQI reports good internal reliability and validity. It has good psychometric properties, with high internal consistency and test-retest reliability, as well as convergent/divergent validity with sleep, psychological and socio-demographic variables. It represents an instrument arised in 1989 by researchers from the University of Pittsburgh, created with the intention of providing a reliable, valid and standardized measure of sleep quality, to distinguish between good and bad sleep habits; to provide an index that is easy for respondents to use and easy for clinicians and researchers to interpret, and to conduct a brief, clinically useful assessment of the various sleep disorders that affect sleep quality. The items in the Pittsburgh Sleep Scale were obtained from three sources: 1. Clinical intuition and experience with patients who havesleep disorder, 2. Review of existing questionnaires on the assessment of sleep quality in the literature, 3. Clinical experience with the instrument during 18 months of testing. The PSQI assesses sleep quality over the past month. The scale consists of 19 self-report items and 5 items rated by a bed partner, housemate, or roommate. The last 5 items are used exclusively for clinical purposes, and are not included in the scoring of the scale. Self-report items examine a wide range of factors related to sleep quality, including assessment of sleep duration, latency, and frequency of sleep-related problems. The items are grouped into seven subscales, which are rated on a four-point Likert scale from 0 to 3 (0=Not in the past month, 1=Less than once a week, 2=Once or twice a week, 3=Three or more times a week) and manually entering answers. These components are the subjective assessment of sleep quality (1 item), sleep duration (2 items), sleep length (1 item), sleep efficiency (3 items), disturbances affecting sleep (9 items), use of sleep medications (1 item) and interference in daily activities caused by poor sleep quality (2 items). The method of scoring is defined by the author of the scale. The results of these subscales are added to the total score of the scale, whose range is from a minimum of 0 to a maximum of 21 points; where a higher score indicates poorer sleep quality. The time required for filling out and scoring the scale is 5-10 minutes. The Cronbach α coefficient of the original scale is α=0.83, which indicates a high level of internal consistency. It has been translated into 56 world languages, including Serbian. The translation and adaptation of the scale as well as the formal analysis of its psychometric properties into the Serbian language were carried out in 2016. [20] on a sample of 140 respondents. The internal consistency of the scale in the Serbian language is α=0.79. The PSQI is an open access instrument and is free to use for academic and commercial purposes with the consent of the authors [16-22].

Implication for clinical use

The PSQI has been used to evaluate sleep quality in numerous studies, especially in the past 10 years. Rao et al. (2020) used this questionnaire to assess the sleep quality of 25,735 medical students in their meta-analysis [23]. Sedov et al. (2018) used this questionnaire to assess the sleep quality of 6796 pregnant women, while Divani et al. (2022) used this tool to assess the impact of therapy on sleep quality in cancer patients [24, 25]. Xie et al. (2021) in their meta-analysis using the PSQI examined the effect of exercise on sleep quality and the occurrence of insomnia in adults [26]. Scott et al. (2021) studied the association of better sleep quality with improved mental health in a randomized, controlled trial, using the PSQI as an assessment tool [27]. Garbarino et al. (2019) evaluated the sleep quality of police officers using the PSQI in their study, while Yang et al. (2020) used this questionnaire to determine the correlation of smartphone use with increased frequency of depression, anxiety and poorer sleep quality [28, 29].

The usage of this questionnaire was of particular importance during the duration of the COVID-19 pandemic, when the assessment of sleep quality found its significant practical application, both among the general population and among health workers, and over half of the respondents (56%) in the scientific work Marković et al. (2019), uses sleep as a defense mechanism against stress [30-34].

CONCLUSION

It's necessary that sleep and sleep quality have special attention in the field of public health, because good sleep quality is conducive to better health and well-being. Sleep disorders can cause significant changes in an individual's physical, professional, cognitive and social functioning and significantly threaten the quality of life.

There're numerous questionnaires that're used to assess sleep quality, and among them, the Pittsburgh Sleep Quality Index (PSQI)is the most commonly used. In the past 10 years PSQI has been and will be used in future research as a tool for assessing the quality of sleep in various social spheres in a large number of studies.

CONFLICT OF INTEREST

The authors state that they did not have any conflict of interest when conducting this research and processing the results.

Sažetak

Spavanje predstavlja jednu od osnovnih potreba i fiziološki proces neophodan za život. Postoji veliki broj testova za procenu kvaliteta sna. U najvećem broju sreću se u formi upitnika sa zatvorenim tipom pitanja ili u vidu intervjua. Kao najčešće korišćen instrument za merenje kvaliteta spavanja koristi se Pitsburški Indeks (Pittsburgh Sleep Quality Index-PSQI, eng.), koji prijavljuje dobru internu pouzdanost i validnost. Neophodno je da san i kvalitet sna imaju posebnu pažnju u oblasti javnog zdravlja, jer dobar kvalitet sna pogoduje boljem zdravlju i blagostanju.

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