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Sleep Breathing Disorders

THE PREDICTORS OF DEPRESSION SYMPTOMS AMONG OSA PATIENTS

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Introduction: Previous research has found high prevalence of depression occurred in OSA. The mechanism of the relationship between obstructive sleep apnea and depression is complex and remains unclear. The study was conducted to explore the possible predictors (including shared daytime sleepiness symptom, fragmentation of sleep, or repeated episodes of hypoxia) for OSA patient suffering depression symptoms.
Materials and methods: The subjects in present study were obtained from the PSG database of Sleep Center of Taipei Medical University Hospital between 2010 and 2017. All the patients had one night of clinical PSG and requested to fill out self-rating scales for daytime sleepiness (ESS), sleep quality (PSQI), and mental-health (BDI-I). The exclusion criteria were (a) age under 18; (b) presence of other sleep disorders, such as RLS, PLMD. The associations between depression and OSA were analyzed using multiple linear regression analysis.
Results: Of 3740 OSA patients were included for final analyses. 15% of OSA patients were classified as co-occurring depressive mood using the BDI-I. In linear regression analysis, counts of awakening on PSG (ß=-.045, p=.003), percentage of REM (ß=-.044, p=.005), excessive daytime sleepiness (ß=.181, p< .001), and sleep quality (ß=.439, p< .001) were associated with BDI scores in OSA patients.
Conclusions: The current study found that sleep quality and daytime sleepiness, rather than hypoxia episodes, was related to depression symptoms among OSA patients. The findings suggested depressive mood in OSA patients was probably affected by the excessive daytime sleepiness which might be caused by sleep fragmentation. Furthermore, disruption of REM sleep in OSA might undermine their ability to overcome emotional distress, raising the risk for depression.

Behavior, Cognition and Dreaming

THE RELATIVE PRIORITY OF SLEEP AMONG DAILY LIFE ACTIVITIES: ATTITUDE VERSUS PRACTICE

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Introduction: Over the past decades, the impositions of modern life have led to chronic sleep reduction in the society. With the endeavor of sleep researchers, the importance of sleep for physiological and psychological health has been increasingly recognized by general publics. However, it is not clear whether these efforts have led to increased priority of sleep over other daily life activities. Also, the change in attitude does not necessarily lead to change in behavioral practice. The current study therefore aims to survey the relative priority of sleep among daily life activities and the consistency between sleep attitude and behavioral practice.
Materials and methods: Participants included 443 full-time employees (225 males and 218 females), from age 25 to 64 (Mean=43.12, SD=10.21), recruited via an online survey program. A package of questionnaires was administered through the online survey program. Participants were asked to list the priority of their daily life activities, including sleep, work-related activities, family activities, leisure activities, social activities and exercise, to assess their attitude about the importance of sleep. Furthermore, they were required to recall their actual actions the last time when sleep conflicting with one of the other daily life activities (work, family activities, leisure activities, social activities and exercise) to assess their behavioral practice.
Results: When asking to list the priority, 22.1% of the participants made sleep the first priority among daily life activities, 34.8% made sleep the second priority, 24.8% made sleep the third priority, 11.5% made sleep the fourth priority, 1.8% made sleep the fifth priority, and 5.0% of them put sleep the last priority among the daily activities. The results indicated that there is a high percentage of the participants gave high priority to sleep. However, when asking to recall their actual practice last time when there was a conflict in time between sleep and other events, 63.4% of the participants sacrificed their sleep for work. Similarly, 63.2% of them sacrificed sleep for family activities. Relatively less proportion of participants made leisure activities (35.4%), social activities (23.7%) and exercise (23.9%) a priority over sleep. Only one-forty of participants (25.5%) showed consistent priority of sleep in their attitude and behavioral practices.
Conclusions: While most people recognize that sleep is important and make it a high priority over other activities, it is very common for them to sacrifice sleep over other activities, especially work-related and family activities. Sleep education should not only focus on the importance of sleep, but also provide time management techniques to help the general publics to gain a balance among work, family life and sleep.

Insomnia

PHYSIOLOGICAL AROUSAL DURING SLEEP ONSET PERIOD IN PRIMARY INSOMNIA AS MEASURED BY EEG POWER SPECTRUM ANALYSIS

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Introduction: Insomnia is a common healthy complain. The neurocognitive perspective of hyperarousal model of insomnia hypothesized that the sleep difficulties in insomniacs may result from enhanced information processing around sleep onset and during sleep. Supporting evidences were primarily from the findings that insomnia patients have increased high frequency EEG activity and decreased low frequency EEG activity during sleep, indicating insomniacs in general have higher physical arousal and lower sleep homeostasis. This study further aims to explore arousal level and sleep homeostasis during the period of sleep onset by comparing the level and change of EEG spectrum in primary insomnia patients and normal control subjects during the process of sleep onset.
Materials and methods: 30 patients with primary insomnia (20F, mean age=36.7) and 25 normal sleepers (17F, mean age=34.8) underwent one night of PSG recording in a sleep laboratory to screening sleep-related breathing disorders and sleep-related movement disorders. They also completed the Pre-sleep Arousal Scale (PSAS) before bedtime. EEG spectrum analyses were conducted for the EEG data collected during the 5 minutes prior to sleep onset and the 15 minutes after.
Results: Subjective ratings of both pre-sleep cognitive and somatic arousal were significantly higher in insomnia group ($F = 23.950$, $p < .001$; $F = 64.235$, $p < .001$) than control group. More WASO ($F = 5.510$, $p = .023$), less time and percentage of stage 2 sleep ($F = 7.088$, $p = .010$; $F = 32.616$, $p < .001$), less percentage of REM sleep ($F = 4.810$, $p = .033$), and poor sleep efficiency ($F = 8.685$, $p = .005$) were showed in PSG. The EEG spectrum during sleep-onset period showed that insomniacs had higher alpha power in the sleep-wake transition, lower delta power after falling asleep, and higher theta and beta power during sleep-onset period. In terms of the slope of EEG spectrum change during the period of sleep onset, insomniacs had slower change than normal sleepers in increasing of sleep homeostasis and decreasing of physical arousal. In addition, the correlations between PSAS score and EEG power, cognitive arousal and delta power after falling asleep and theta power in sleep-onset process showed significant positive correlation. Alpha power in the later part of sleep-onset period and beta power around sleep-wake transition, on the other hand, showed negative correlations with cognitive arousal. Physical arousal only showed positive correlation to theta power in sleep-wake transition.
Conclusions: Patients with primary insomnia showed significantly less and slower increase in sleep homeostatic drive as well as less and slower decrease in EEG arousal during sleep-onset period. Although EEG arousal