

## An Evaluation Study of Sleep and Sleep-Related Factors in Clinic Clients with Sleep Difficulties

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**Abstract :** Many people are bothered by sleep difficulties in Taiwan's society. However, majority of patients get medical treatments without a comprehensive sleep assessment. It is still a big challenge to formulate a comprehensive assessment of sleep difficulties in clinical settings, even though many assessment tools have existed in literature. This study tries to implement reliable and effective 'comprehensive sleep assessment scales' in a medical center and to explore differences in sleep-related factors between clinic clients with or without sleep difficulty complaints. The comprehensive sleep assessment (CSA) scales were composed of 5 dimensions: 'personal factors', 'physiological factors', 'psychological factors', 'social factors' and 'environmental factors', and were first evaluated by expert validity and 20 participants with test-retest reliability. The Content Validity Index (CVI) of the CSA was 0.94 and the alpha of the consistency reliability ranged 0.996-1.000. Clients who visited sleep clinic due to sleep difficulties (n=32, 16 males and 16 females, ages  $43.66 \pm 14.214$ ) and gender-and age- matched healthy subjects without sleep difficulties (n=96, 47 males and 49 females, ages  $41.99 \pm 13.69$ ) were randomly recruited at a ratio of 1:3 (with sleep difficulties vs. without sleep difficulties) to compare their sleep and the CSA factors. Results show that all clinic clients with sleep difficulties did have poor sleep quality (PSQI>5) and mild to moderate daytime sleepiness (ESS >11). Personal factors of long working hours ( $\chi^2= 10.315$ ,  $p=0.001$ ), shift workers ( $\chi^2= 8.964$ ,  $p=0.003$ ), night shift ( $\chi^2=9.395$ ,  $p=0.004$ ) and perceived stress ( $\chi^2=9.503$ ,  $p=0.002$ ) were disruptors of sleep difficulties. Physiological factors from physical examination including breathing by mouth, low soft palate, high narrow palate, Edward Angle, tongue hypertrophy, and occlusion of the worn surface were observed in clinic clients. Psychological factors including higher perceived stress ( $\chi^2=32.542$ ,  $p=0.000$ ), anxiety and depression ( $\chi^2=32.868$ ,  $p=0.000$ ); social factors including lack of leisure activities ( $\chi^2=39.857$ ,  $p=0.000$ ), more drinking habits ( $\chi^2=1.798$ ,  $p=0.018$ ), irregular amount and frequency in meals ( $\chi^2=5.086$ ,  $p=0.024$ ), excessive dinner ( $\chi^2=21.511$ ,  $p=0.000$ ), being incapable of getting up on time due to previous poor night sleep ( $\chi^2=4.444$ ,  $p=0.035$ ); and environmental factors including lights ( $\chi^2=7.683$ ,  $p=0.006$ ), noise ( $\chi^2=5.086$ ,  $p=0.024$ ), low or high bedroom temperature ( $\chi^2=4.595$ ,  $p=0.032$ ) were existed in clients. In conclusion, the CSA scales can work as valid and reliable instruments for evaluating sleep-related factors. Findings of this study provide important reference for assessing clinic clients with sleep difficulties.

**Keywords :** comprehensive sleep assessment, sleep-related factors, sleep difficulties

**Conference Title :** ICN 2018 : International Conference on Nursing

**Conference Location :** London, United Kingdom

**Conference Dates :** September 27-28, 2018