P380 | Psychometric properties of the Chinese Epworth Sleepiness Scale among individuals with depressive symptoms: a confirmatory factor analysis

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Objectives/Introduction: The Epworth Sleepiness Scale (ESS) evaluates individuals′ daytime sleepiness across situations through their responses to 8 items on a 4-point Likert scale. An aggregate score of the ESS has been widely used to assess daytime sleepiness in healthy and clinical populations, assuming a single-factor structure. However, recent research suggested that the ESS could be measuring multiple dimensions of sleepiness. While excessive daytime sleepiness has been found to associate with depressive symptoms, no studies have evaluated the factor structure of ESS in samples with depression. In view of the above, this study aimed to examine the psychometric properties and the single-factor structure of the ESS among individuals with depressive symptoms.

Methods: This study is part of a longitudinal project titled "Emotional Stability, Positive Worldview, Forgivingness, and Sleep Quality: A Search for Causal Pathways". Participants completed an online survey including the validated Chinese version of the ESS and the depression subscale of the Depression Anxiety Stress Scales-21 (DASS-Depression) measuring depressive symptoms. We selected a sub-sample of the participants (n = 601, mean age=27.45, SD=6.66, 59.4% female, DASS-Depression>9) with depressive symptoms for our current analyses. Among these participants, 41.0% were mildly depressed, 37.5% were moderately depressed, 13.6% were severely depressed, and 8.0% were extremely severely depressed.

Results: Confirmatory factor analysis results supported a single-factor model of ESS (χ^2=75.120, df=17, $p < .001$; CFI=.950; TLI=.918; RMSEA=.075, 90% CI=.058-.093; SRMR=.039). In addition, the Chinese ESS had good reliability, Cronbach′s alpha=.80. Daytime sleepiness was positively correlated with log-transformed score on DASS-Depression, r(601)=.082, $p = .043$.

Conclusions: A single-factor model of the Chinese ESS is validated with good psychometric properties as a reliable measure of daytime sleepiness in adults with depressive symptoms. Our data also corroborated previous studies on the association between daytime sleepiness and depressive symptoms. Future studies are warranted to uncover the mechanisms underlying this association, and whether the presence of excessive daytime sleepiness may be indicative of depression of a different etiology, form or severity.

P381 | Impact of weak extremely low frequency pulsed electromagnetic field on subjective assessment of sleep quality

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Objectives/Introduction: It seems promising to use the non-pharmacological distant physiotherapy exposure of ELFMF for the correction of sleep disorders and the normalization of circadian rhythms of sleep. The aim of our study was to assess the impact of weak ELFMF on different characteristics of night sleep, the estimation of using subjective assessment of sleep quality.

Methods: In our experiments the device - ELFMF generator "Smart Sleep" was used forming rectangular current pulses supplied to the magnetic field emitter. At a distance of 70-200 cm in the experimental zone field intensity was less than 0.2 µT, which is significantly less than the permissible hygienic standards. The device has 7 modes of pulse frequency: 2, 4, 8, 16, 20, 32, 40 Hz.

The experiment involved 20 healthy volunteers (both sexes, aged 20-30). The operating mode of the ELFMF generator got out arbitrarily. The duration of the night exposition by ELFMF depended on the sleep duration (6-8 h). Time intervals between the experimental nights with and without ELFMF exposure were at least 3-5 days. All the subjects in the morning after awakening filled out the questionnaires on various indicators of the quality of sleep. The average number for each subject: no exposed - 12, with exposed - 12. Total - 480 nights.

Results: The Kruskall-Wallis single-factor rank analysis was used to assess the differences between the results of the questionnaires in the background nights and under the influence of different frequencies of the ELFMF:

$p < 0,05$ for the: health improvement in the awakening (4 Hz, 20 Hz), reducing the fragmentation (8 Hz) and shortening the duration of sleep (20 Hz), the dreams memorizing (4 Hz), quality (2 Hz, 16 Hz), emotions (8 Hz) and awareness (20 Hz).

$p < 0,01$ for the: shortening sleep duration (32 Hz), the dreams memorizing (2 Hz), quality (4 Hz) and emotions (2 Hz).

Conclusions: Thus, the obtained results give a reason to believe that ELFMF (2-40 Hz) have a positive impact on the studied indicators quality of sleep and dreams. Further we plan to conduct the polysomnographic studies using the portable EEG system.

Disclosure: Nothing to disclose.