

ASIAN SOCIETY OF SLEEP MEDICINE INTERIM MEETING 2024

Abstracts

Schedule :

October 18-19, 2024

President :

**Yuichi Inoue, M.D., Ph.D.,
(Department of Somnology Tokyo Medical University)**

Venue :

**TFT Bldg. East Wing 9F
3-6-11 Ariake, Koto-ku, Tokyo**



P5-07**Effects of the Sleep Hygiene and Nurturing Attitude of Parents on the Sleep Habits, Emotions, and Behaviors of their Children**

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In this study, we aimed to determine the effects of parents' sleep habits, sleep hygiene, mental health, and involvement in their children's lifestyle on the sleep habits, emotions, and behaviors of school-aged children. In December 2022, an online survey was administered to parents of children (6–15 years old) enrolled in the first grade of elementary school to third grade of junior high school. In addition to demographic characteristics, parent-related items on the survey included sleep duration and habits on weekdays and weekends, sleep quality (Pittsburgh sleep quality index), sleep hygiene practices (sleep hygiene practice scale), mental health (Kessler psychological distress scale), and nurturing attitude toward children (e.g., setting sleep and wake-up time and praising/scolding their children). Child-related items on the survey included sleep schedule, emotions, and behaviors (strength and difficulties questionnaire). Multiple regression analysis was conducted with the parenting attitude and sleep habits of parents as explanatory variables and sleeping time and behavior of children as dependent variables. This study was approved by the Research Ethics Review Committee of Akita University.

Out of the 1,310 respondents, the analysis was conducted after excluding incomplete responses. Parental enforcement of specific wake-up and sleep time significantly affected the median sleep time of children on weekdays and weekends. Additionally, poor sleep characteristics and mental health of parents influenced the emotions and behaviors of their children. In conclusion, these findings highlight the importance of establishing specific sleep-wake rhythms for children at an early age to ensure good sleep hygiene of both parents and their children.

P5-08**Automated Dream Detection in NREM Sleep Stage 2 Using High- and Low-Density EEG**

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We present a method to automatically identify dream experience (DE) and no experience (NE) during the stage N2 of non-rapid eye movement (NREM) sleep.

We investigated the use of Common Spatial Patterns (CSP) for feature extraction and the k-Nearest Neighbors classifier (KNN) to automatically identify when a subject is having a dream during NREM sleep from electroencephalography (EEG) signals. Furthermore, we use permutation-based channel selection to identify the most relevant EEG channels for the automatic classification of DE and NE.

The results show that using a balanced dataset with DE and NE reports and high-density EEG, it is possible to obtain up to 0.94 of accuracy, Fscore, Precision, Recall, an Area Under the Receiver Operating Characteristic (AUROC) of 0.975, and a kappa of 0.88. Performance metrics decrease as we reduce the number of EEG channels, but remains similar using up to 30-40 EEG channels, and then begins to decrease dramatically, especially when using less than 10 EEG channels. We show that KNN models created to classify NE and DE using high-density EEG can identify if a subject was having a dream with an accuracy of 0.700 even when subjects reported a dream experience without recall, and channel selection methods have shown that performance could increase by 0.02 when 1-3 EEG channels are removed from the occipital brain area.

Our results show high classification performance for automatic dream detection and informs the minimum required number of EEG channels to create the KNN models, thus obtaining low-cost portable devices that can be used in real-life scenarios.