

## 論 文 要 旨

**Association of problem behavior with sleep problem and gastroesophageal reflux symptom**

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**Background:** There are few large-scale epidemiologic studies examining the associations between sleep problems, gastroesophageal reflux disease (GERD) symptoms, lifestyle and food habits and problem behaviors in adolescents. The objective of this study was to evaluate the associations among these factors in Japanese adolescents.

**Methods:** We performed a cross-sectional survey of 1,840 junior high school students using questionnaires. The subjects were classified into problem behavior (PB) or normal behavior (NB) groups by using the Pediatric Symptom Checklist. The scores of the sleep-related factors, sleep bruxism, lifestyle and food habits, and GERD symptoms were compared. Logistic regression analysis was performed to determine the factors related to problem behaviors.

**Results:** The mean age was  $13.3 \pm 1.8$  years. The PB group had significantly longer sleep latency and higher scores of GERD symptoms ( $P < 0.001$ ). Furthermore, the PB group was significantly more likely to experience absences of the mother at dinner time, skip breakfast, and have less than 30 min of conversation among family at dinner time. The PB group had significantly higher frequencies of sleep bruxism, difficulty falling asleep within 30 min, nightmares, feeling of low sleep quality, daytime somnolence, and daytime lack of motivation. Feelings of low sleep quality had the strongest association with problem behaviors, with an adjusted OR (95% CI) of 12.88 (8.99–18.46).

**Conclusions:** Our large-scale cross-sectional study found that problem behaviors in adolescents were associated with sleep problems, including sleep bruxism, as well as lifestyle and food habits and GERD symptoms.