

## Translation and Validation of the Thai Version of the Japanese Sleep Questionnaire for Preschoolers

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**Abstract :** Background: There is a need to find an appropriate tool to help healthcare providers determine sleep problems in children for early diagnosis and management. The Japanese Sleep Questionnaire for Preschoolers (JSQ-P) is a parent-reported sleep questionnaire that has good psychometric properties and can be used in the context of Asian culture, which is likely suitable for Thai children. Objectives: This study aimed to translate and validate the Japanese Sleep Questionnaire for Preschoolers (JSQ-P) into a Thai version and to evaluate factors associated with sleep disorders in preschoolers. Methods: After approval by the original developer, the cross-cultural adaptation process of JSQ-P was performed, including forward translation, reconciliation, backward translation, and final approval of the Thai version of JSQ-P (TH-JSQ-P) by the original creator. This study was conducted between March 2021 and February 2022. The TH-JSQ-P was completed by 2,613 guardians whose children were aged 2-6 years twice in 10-14 days to assess its reliability and validity. Content validity was measured by an index of item-objective congruence (IOC) and a content validity index (CVI). Face validity, content validity, structural validity, construct validity (discriminant validity), criterion validity and predictive validity were assessed. The sensitivity and specificity of the TH-JSQ-P were also measured by using a total JSQ-P score cutoff point 84, recommended by the original JSQ-P and each subscale score among the clinical samples of obstructive sleep apnea syndrome. Results: Internal consistency reliability, evaluated by Cronbach's  $\alpha$  coefficient, showed acceptable reliability in all subscales of JSQ-P. It also had good test-retest reliability, as the intraclass correlation coefficient (ICC) for all items ranged between 0.42-0.84. The content validity was acceptable. For structural validity, our results indicated that the final factor solution for the Th-JSQ-P was comparable to the original JSQ-P. For construct validity, age group was one of the clinical parameters associated with some sleep problems. In detail, parasomnias, insomnia, daytime excessive sleepiness and sleep habits significantly decreased when the children got older; on the other hand, insufficient sleep was significantly increased with age. For criterion validity, all subscales showed a correlation with the Epworth Sleepiness Scale ( $r = -0.049-0.349$ ). In predictive validity, the Epworth Sleepiness Scale was significantly a strong factor that correlated to sleep problems in all subscales of JSQ-P except in the subscale of sleep habit. The sensitivity and specificity of the total JSQ-P score were 0.72 and 0.66, respectively. Conclusion: The Thai version of JSQ-P has good internal consistency reliability and test-retest reliability. It passed 6 validity tests, and this can be used to evaluate sleep problems in preschool children in Thailand. Furthermore, it has satisfactory general psychometric properties and good reliability and validity. The data collected in examining the sensitivity of the Thai version revealed that the JSQ-P could detect differences in sleep problems among children with obstructive sleep apnea syndrome. This confirmed that the measure is sensitive and can be used to discriminate sleep problems among different children.

**Keywords :** preschooler, questionnaire, validation, Thai version

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