

# The Development and Validation of Chinese Overactive Bladder Symptom Score (OABSS)

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Overactive bladder (OAB) is highly prevalent worldwide. A lot of clinical researches focus on epidemiologic, diagnostic, and pharmacologic issues of this bladder disorder. However, OAB diagnosis is usually based on clinical symptoms. There is, therefore, a need for an objective diagnostic tool to assess the severity of OAB and evaluate the treatment outcome. Among various symptom scores for OAB, a recently developed OAB symptom score (OABSS) has gained popular acceptance [1].

OABSS total score is based on a self-administered questionnaire about four symptoms: daytime frequency, nighttime frequency, urgency, and urgency incontinence [1]. OABSS has been demonstrated to have high correlations with corresponding bladder diary variables [2]. OABSS has some advantage over other scales for OAB symptoms, but the fact that it was developed using the Japanese language and validated with Japanese patients' data raises an important concern. It is, therefore, necessary to perform linguistic validation before OABSS is used outside of Japan. The linguistic validation procedure includes a translation of OABSS into the local language (Chinese) and validation based on local patients' data. In 2010, the Taiwanese Continence Society has developed and validated a Chinese version of OABSS for assessing OAB symptoms (daytime frequency, nighttime frequency, urgency and urgency incontinence) and compared it with a 3-day bladder diary.

The Chinese OABSS was at first developed by linguistic validation of the original version under the permission and supervision of Professor Homma Y. The United Translation Service (Taipei, Taiwan) undertook the translations. The overall validation process consists of six steps: (1) two forward translations; (2) comparison and reconciliation of the translations; (3) back-translation; (4) comparison of the source and back-translation; (5) review by the principal investigator (Dr. Kuo HC) of the study; and (6) a comprehension test using patients. In addition, the inventor (Dr. Homma Y) of the original OABSS took part in monitoring the whole process as a consultant.

Secondly, the reliability and validity of OABSS and correlations with a 3-day bladder diary were tested on patients with OAB through a multi-center study conducted in Taiwan (the RESORT Study). Patients with OAB-wet (n=31, presence with urgency incontinence and at least

3 episodes within 3 days) or OAB-dry (n=29, presence of urgency without incontinence and at least 3 episodes within 3 days) were enrolled consecutively in this study. The test-retest reliability of Chinese OABSS was moderate to good with weighted kappa coefficients of 0.515 to 0.721 for each symptom score and 0.610 for total symptom score. Each symptom score correlated positively with the total OABSS (Spearman's rho 0.365 to 0.793) and the internal consistency was good (Cronbach's alpha 0.674). There was a clear separation of OABSS total score between patients with OAB-wet (average 11.4, range 7-15) and OAB-dry (average 7.97, range 4-10) (Wilcoxon exact test,  $p < 0.05$ ). Analysis of the correlations between the OABSS questionnaire and a 3-day bladder diary showed that the OABSS items correlated positively with the corresponding variables in the bladder diary (Spearman's rho 0.504 to 0.879). Further analysis indicated that OABSS tended to under-estimate the frequency of nighttime voiding recorded on a bladder diary.

The Chinese OABSS has been developed by the Taiwanese Continence Society and validated as a reliable instrument for assessing OAB symptoms. This validated Chinese version OABSS can be used in clinical research or practice to assess OAB patients. We recommend that it can be an alternative to, but should not be considered as a replacement for, a 3-day bladder diary in assessing OAB patients.

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## REFERENCES

1. Homma Y, Yoshida M, Seki N, et al: Symptom assessment tool for overactive bladder syndrome--overactive bladder symptom score. *Urology* 2006; **68**:318-323.
2. Homma Y, Kakizaki H, Yamaguchi O, et al: Assessment of overactive bladder symptoms: Comparison of 3-day bladder diary and the overactive bladder symptoms score. *Urology* 2011; **77**:60-64.

## Clinical pearls — Brief communication

### Supplement. Chinese Overactive Bladder Symptom Score (OABSS)

以下症狀大約出現的頻率為何？請選出一個與最近兩週內您的狀態最接近的選項，並在□打勾。

1. 您早上起床後到睡前為止，大約要小便幾次？	<input type="checkbox"/> 0 7 次以下 <input type="checkbox"/> 1 8~14 次 <input type="checkbox"/> 2 15 次以上
2. 您晚上就寢後到早上起床為止，大約要醒來小便幾次？	<input type="checkbox"/> 0 無 <input type="checkbox"/> 1 1 次 <input type="checkbox"/> 2 2 次 <input type="checkbox"/> 3 3 次以上
3. 您多常有突然想小便，此種感覺難以延遲(難以憋住)？	<input type="checkbox"/> 0 無 <input type="checkbox"/> 1 每週少於 1 次 <input type="checkbox"/> 2 每週 1 次以上 <input type="checkbox"/> 3 每天 1 次左右 <input type="checkbox"/> 4 每天 2~4 次 <input type="checkbox"/> 5 每天 5 次以上
4. 您多常有因尿急難以延遲(難以憋住)而漏尿？	<input type="checkbox"/> 0 無 <input type="checkbox"/> 1 每週少於 1 次 <input type="checkbox"/> 2 每週 1 次以上 <input type="checkbox"/> 3 每天 1 次左右 <input type="checkbox"/> 4 每天 2~4 次 <input type="checkbox"/> 5 每天 5 次以上