

# Psychometric evaluation of the Functional Assessment of Cancer Therapy-Breast Symptom Index

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Lee and colleagues (1) provide a necessary evaluation of the psychometric properties of the 8-item Functional Assessment of Cancer Therapy-Breast Symptom Index (FBSI). The original FBSI was developed by Yost *et al.* (2) as a brief assessment of symptoms and functioning for application in breast cancer studies and clinical practice. In the current study the authors found evidence supporting the test-retest reliability, convergent validity and known groups validity of the English and Chinese versions of the FBSI in samples of breast cancer patients receiving treatment in Singapore. However, the examination of responsiveness was less complete and yielded inconclusive findings.

The comparison of the English and Chinese versions of the FBSI is a real strength of this paper. The findings that the reproducibility and concurrent and known groups validity of the FBSI are comparable across language translations provides evidence for combining data collected in international studies. The issue associated with bilingual participants may have been examined directly, although Lee and colleagues do provide a reasonable explanation for why bilingual status may not change the psychometric results.

The evaluation of responsiveness of the FBSI was relatively weak in terms of research design and small sample sizes. First, the study design included a 1 week follow-up, and although greater than 90% of participants provided follow-up FBSI assessments, a one week period may not be sufficient to demonstrate changes in performance status in this mixed sample of breast cancer patients. Longer time periods, such as 2-3 months or after receiving a treatment of known efficacy, may be better for evaluating responsiveness of the FBSI (3). Second, the very small sample sizes among

patients who improved (6 to 20) or worsened (22 to 32) in performance status resulted in inconclusive findings about the responsiveness of the FBSI. Interestingly, the original development and psychometric evaluation study also failed to document responsiveness (2). Future studies need to focus more on determining the responsiveness of the FBSI, perhaps in clinical trials or more long-term observational studies. Studies are also needed to identify interpretation guidelines for determining clinical significance of changes in FBSI scores (3).

The receiver operating curve analyses comparing the FBSI and Functional Assessment of Cancer Therapy-Breast (FACT-B) total scores by patient-reported and clinician-reported performance status, evidence of disease and treatment status demonstrates that the two measures were fairly comparable. This finding is important given that the shorter FBSI is capturing health outcomes as well as the longer FACT-B. Therefore, the FBSI can be used as a briefer health outcome assessment in clinical trials and clinical practice without significant loss of information on patient reported outcomes.

In conclusion, the Lee *et al.* (1) study provides evidence to support the test-retest reliability and construct validity of the FBSI. Future research is needed to evaluate the responsiveness of the FBSI, and to determine interpretation guidelines for understanding clinical significance of changes in FBSI scores. Validation of a patient-reported health outcome instrument is an ongoing process involving accumulating evidence on the psychometric characteristics from various sources, and with increasing evidence investigators have more confidence in the measurement properties of the instrument.

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