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Validation of two instruments to assess technical bronchoscopic skill using virtual reality simulation.

[Davoudi M](#), [Osann K](#), [Colt HG](#).

Medical Center, University of California, Irvine, CA 92868, USA.

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BACKGROUND: In an era of increased emphasis on patient safety and competency-based education, demonstration of significant variability in the teaching of flexible bronchoscopy has led to initiatives for new standardized curricula and assessment tools. **OBJECTIVES:** To evaluate the efficacy of such curricula and to assess bronchoscopic skill, 2 measuring instruments have been developed: the Bronchoscopy Skills and Tasks Assessment Tool (BSTAT) and the Bronchoscopy Step-by-Step Evaluation Tool (BSET). We studied the validity and reliability of these 2 instruments. **METHODS:** Two independent testers simultaneously scored 22 volunteer participants at 3 levels [novice (n = 7), fellow (n = 8) and attending (n = 7)] on a virtual reality bronchoscopy simulator using the 2 instruments; each participant was tested twice, in 2 separate sessions. Intertester and test-retest reliability were analyzed with intraclass correlations (ICC); ANOVA was used to assess concurrent validity based on the subjects' expected skill level. **RESULTS:** The ICCs between the testers were 0.98 for both the BSTAT and BSET. Comparison of the scores between the sessions showed high test-retest reliability by ICC (0.86 and 0.85 for BSTAT and BSET respectively), with a small yet statistically significant learning effect. The novice group's scores were lower than the fellows' and attendings' ($p < 0.001$) for both the BSTAT and BSET; the fellows' scores were consistently lower than the attendings' on both tests, yet the differences were not statistically significant. **CONCLUSION:** This validation study of 2 objective tests of bronchoscopic skill demonstrated high reliability and concurrent validity. These instruments can now be used to evaluate the effectiveness of new competency-based bronchoscopy curricula. 2008 S. Karger AG, Basel.

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