

## ABSTRACT

**Objective:** To investigate the agreement of Richmond Agitation Sedation Scale (RASS) assessments between bedside nurses and trained investigators for patients receiving mechanical ventilation in the intensive care unit (ICU).

**Design:** A cross-sectional study.

**Setting:** Two 24-bed ICUs at a tertiary care academic hospital in Colorado.

**Subjects:** A convenient sample of 62 patients receiving mechanical ventilation with an oral endotracheal tube.

**Interventions:** None.

**Measurements and Main Results:** Bedside ICU nurses and two trained investigators simultaneously performed RASS assessments during 79 observations with 62 unique patients. Acute respiratory failure (55%) and altered mental status (21%) were the most common reasons for mechanical ventilation. The assessments occurred on a median of 3.5 (interquartile range [IQR], 1-10) days after initiation of mechanical ventilation, and most were receiving one (IQR, 0.5-2) continuous sedative at the time of the assessment. We used intraclass correlation coefficients (ICC) and Bland-Altman bias estimation to evaluate the differences in recorded RASS between the assessors. The ICC between the two investigators (0.891; confidence interval [CI], 0.836-0.929) was higher than between the mean of the two investigators and nurses (0.773; CI, 0.667-0.849). The Bland-Altman bias between the two investigators (0.114;  $p=0.24$ ) was smaller than between the mean of the two investigators and nurses (-0.601;  $p<0.001$ ). Compared with the RASS values recorded by the two investigators, those recorded by nurses were lower in 13%, concordant in 35%, and higher in 52% of the observations.

**Conclusions:** The inter-rater agreement of bedside RASS assessments between nurses and the trained investigators was good. RASS recorded by nurses had a slight bias toward higher values than the trained investigators. This study supports the continued use of RASS as a reliable tool to evaluate the depth of sedation among patients receiving mechanical ventilation, although periodic training may be necessary to ensure its accurate performance.