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Accuracy and content of medical student midclerkship self-evaluations

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Abstract

BACKGROUND: Midclerkship self-evaluations (MCSEs) require students to reflect on their knowledge, skills, and behaviors. We hypothesized that MCSEs would be consistent with supervisor midpoint evaluations during a surgical clerkship.

METHODS: MCSEs of 153 students who completed our surgery clerkship in 2 academic years were compared with supervisor midclerkship evaluations. The quantitative domains of the MCSE and supervisor evaluation were compared for accuracy. Identified areas of strengths and weakness were evaluated for thematic consistency.

RESULTS: Student MCSE scoring was accurate across evaluated domains most of the time; when students were inaccurate, they tended to underrate themselves. Students and supervisors most often identified cognitive skills as areas for improvement and noncognitive skills predominated as student strengths.

CONCLUSIONS: Medical students can accurately identify their strengths and weaknesses in the context of an MCSE. Based on these findings, knowledge acquisition and application by medical students in the clinical setting should be emphasized in undergraduate medical education.

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Medical education is constantly evolving, with growing weight on self-directed learning and "flipping the classroom." Because of this emphasis, it has become more important that medical students develop accurate self-evaluation skills. Previous studies have demonstrated the

inaccuracy of medical student and health professional self-evaluations, resulting in a belief that health professions students are unable to accurately assess their own strengths and weaknesses to improve on them.[1,2]

Midclerkship self-evaluations (MCSEs) require students to reflect on their knowledge, skills, and behaviors. Self-evaluation activities provide students with the opportunity to practice their self-evaluation skills, which are vital for life-long learning in medicine, in a context that emphasizes formative feedback from their supervisors. In addition, midpoint formative feedback is required by the Liaison Committee on Medical Education, and the American Board of Medical Specialties stresses self-evaluation as a key component of medical education and maintenance of certification.[3,4]

Our study had 2 specific areas of inquiry. First, we hypothesized that medical student self-assessments would
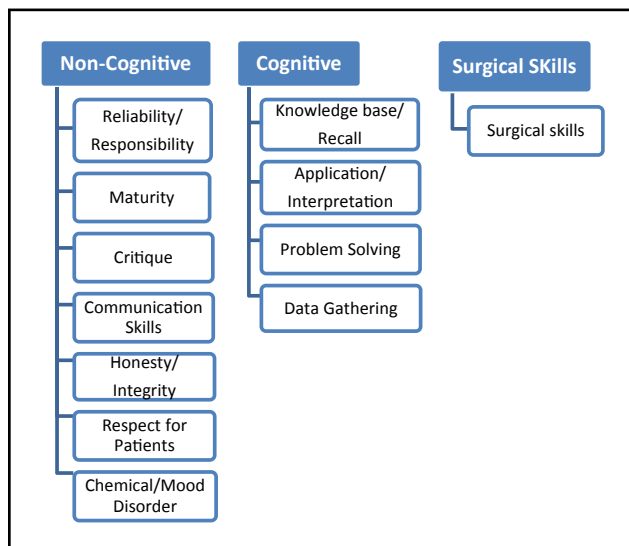
Figure 1 Taxonomy of skills used to describe student performance in surgical clerkship.

align with those of their supervisors during a surgical clerkship. Secondly, we wanted to identify which clinical skills medical students and their supervisors most commonly identified as strong or weak.

Methods

Participants

Participants included 153 3rd-year medical students at the University of Utah School of Medicine who completed the junior surgery clerkship in the 2012 and 2013 academic years. The University of Utah Institutional Review Board declared the study exempt.

Study design and analysis

We asked students to complete the self-assessment portion of their MCSE before meeting with a supervisor of their choice, who could be a senior resident or a faculty member. The MCSE form included space for a student to self-assess and an additional space for evaluation by their supervisor, allowing direct comparison of student and supervisor data from deidentified forms. The midclerkship evaluation form included a 4-point rating scale (1 = unacceptable, 4 = competent/advanced). The following 5 domains were present on the form: medical knowledge,

progress notes, timeliness, initiative, and professionalism. Students submitted 2 MCSE forms during their 6-week surgery clerkship. We compared the domains of the MCSE and supervisor evaluations for accuracy of self-assessment. Chi square was calculated using Stata 14 (Stata Corp., College Station, TX).

Each MCSE also requires free-text statement of one item the student does well and one item for improvement from both student and supervisor. If 2 or more strengths or areas for improvement were documented, only the 1st two comments were analyzed. Identified areas of strengths and weakness were examined for thematic consistency between students and their supervisors. Themes were separated into cognitive, noncognitive and technical skills taxonomies that were further subcategorized based on previously described schema[5,6] (Fig. 1). Thematic consistencies were identified and evaluated independently by 2 of the authors with a 99% agreement. A 3rd-independent rater was used to eliminate discrepancies.

Results

A total of 153 MCSEs were analyzed for this 2-year period. Accuracy of student self-evaluation vs supervisor evaluation is shown in Table 1. Students were most likely to both underrate and overrate themselves in medical knowledge (43% underrate, 12% overrate). Student self-rating was most accurate for professional demeanor (66%) and timeliness (66%). Concordance between student self-rating and supervisor rating exceeded 50% for all domains except medical knowledge (45%).

In the evaluation of the free-text statements, student perception of clinical strengths based on major categories corresponded 85.6% of the time with their evaluators; areas for improvement similarly aligned 72.5% of the time between students and evaluators (Fig. 2). Both students and supervisors were most likely to identify noncognitive skills as areas of strength (93.1%) followed by cognitive skills (5.4%) and technical skills (1.5%). Cognitive skills were the most commonly identified areas for improvement (58%), followed by noncognitive skills (38.4%) and technical skills (3.6%, Fig. 3).

Fig. 4 summarizes the distribution of major domains and subcategories in which student and supervisor free-text comments matched in describing student strengths. Reliability/responsibility was the most commonly matched student strength, with no other achieving double digits. Fig. 5

Table 1	Accuracy of student self-evaluation vs supervisor				
Evaluation accuracy	Medical knowledge ($n = 152$)	Progress notes ($n = 145$)	Timeliness ($n = 152$)	Initiative ($n = 152$)	Professional demeanor ($n = 152$)
Underrate	66 (43%)	54 (37%)	40 (26%)	50 (33%)	33 (22%)
Match	68 (45%)	78 (54%)	101 (66%)	88 (58%)	101 (66%)
Overrate	18 (12%)	13 (9%)	11 (7%)	14 (9%)	18 (12%)