

Title: Social Determinants of Health Competency in Undergraduate Medical Students: Development and Initial Validity Evidence for a Novel Evaluation Instrument

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Abstract:

Background: Social determinants of health (SDH) are a critical factor in patient care outcomes. Incorporation of SDH curricula is growing in pre-clinical and clinical education, yet no formal instrument exists to evaluate learner competency. To address this gap, we previously developed and investigated content, response process, and consequences of testing validity evidence of a novel SDH competency assessment for medical students in a pediatric elective. We aimed to add to our validity evidence by examining internal structure (reliability) of our assessment.

Method: We used the SDH competency assessment at our institution in a pediatric outpatient advocacy elective for fourth-year medical students. Clinical settings in which evaluations occurred included 1:1 didactics and case-based sessions, acute and well pediatric and adolescent visits. Table 1 defines 10 SDH competencies assessed. Students were rated in each competency on a Likert scale ranging from 1 (absolute beginner) to 5 (expert). A Multifaceted Rasch analysis was conducted to investigate evaluator consistency (0.70=acceptable, 0.80=good, and 0.90=excellent) and scale use when employing the assessment.

Results: Seven fourth-year medical students were evaluated by 6 supervising pediatricians (evaluators). Four students were evaluated by a total of 4 evaluators, and 3 were evaluated by a total of 3 evaluators for a total of 25 evaluations completed. Of the 6 evaluators that completed the instrument, 5 evaluators used the instrument completely. These 5 evaluators who participated each used the tool in a productive and internally consistent manner. Rasch reliability for evaluators was 0.97, which is considered “excellent” for internal consistency. There was “good” reliability (0.85) across raters, indicating the evaluators interpreted the components in a consistent fashion. Figure 1 demonstrates that raters mostly used ratings 3 (intermediate), 4 (proficient/practiced/skilled), and 5 (expert) and no evaluators used the 1 (absolute beginner) or 2 (beginner) rating scale points.

Conclusion: The evaluation instrument described is performing well with strong reliability and shows promise for future use in undergraduate medical education. Due to evaluator feedback and our results, the instrument was shortened to have only 4 rating scale points: 1 (beginner), 2 (intermediate), 3 (proficient), 4 (expert). We have expanded instrument use in additional institutions, levels and types of learner, with a goal of determining its ability to discriminate between lower levels of SDH competency.

References:

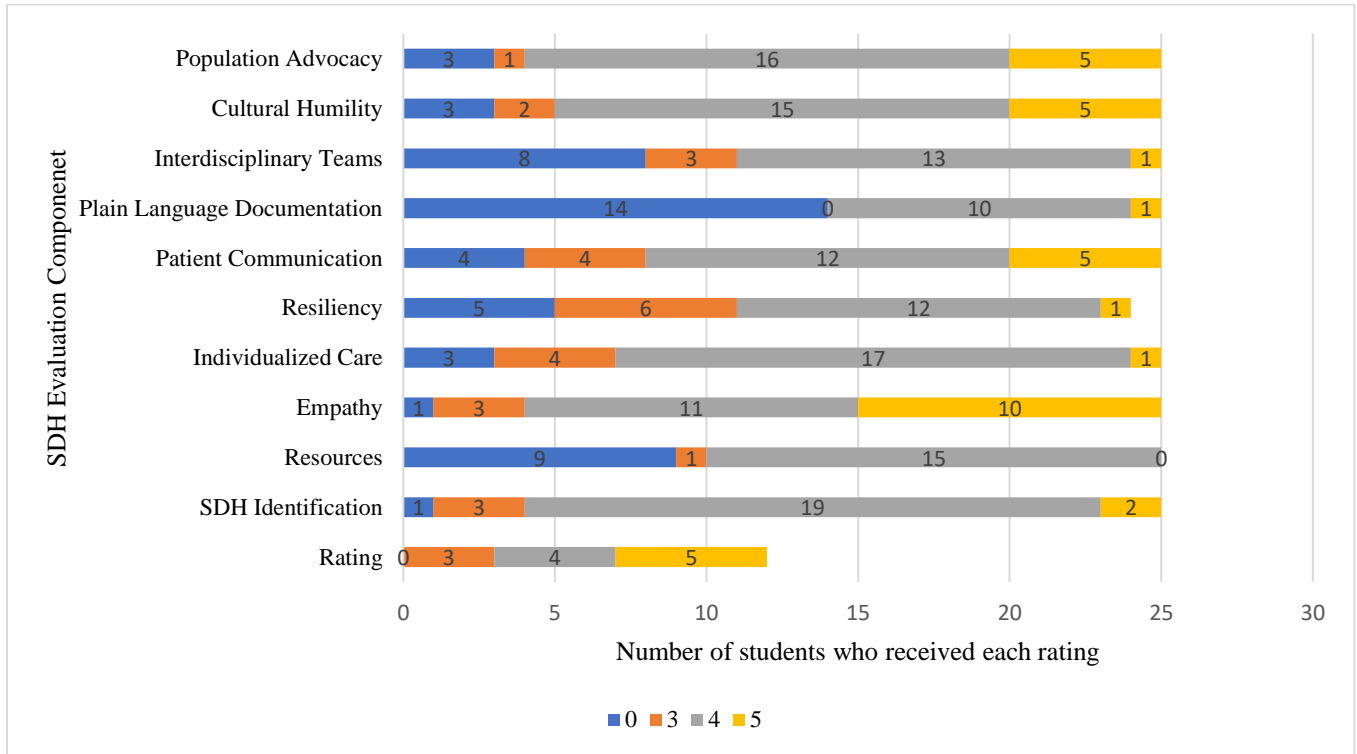
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Table 1: Evaluation Instrument Components.

Description: This table lists and defines the SDH evaluation components and demonstrates the rating choices for each.

SDH Evaluation Components	Instructions for Evaluator	Rating Choices
SDH Identification	Rate the learner’s ability to identify different Social Determinants of Health (SDH) during patient encounters and discussions	<p style="text-align: center;">Unable to Evaluate</p> <p style="text-align: center;">Absolute Beginner = 1</p> <p style="text-align: center;">Beginner = 2</p> <p style="text-align: center;">Intermediate = 3</p> <p style="text-align: center;">Proficient (Practiced/Skilled) = 4</p> <p style="text-align: center;">Expert = 5</p>
Resources	Rate the student’s ability to appropriately link to community resources that are available to meet a family’s social needs (e.g. education, daycare, support groups, etc.) and financial needs (food, utilities, housing, etc.).	
Empathy	Rate the student’s ability to demonstrate empathy by understanding a family’s situation, perspective and feelings during patient encounters and discussions.	
Individualized Care	Rate how effectively the student assisted in individualizing care to fit the patient’s needs.	
Resiliency	Was this student able to identify resiliency factors in patients and their families?	
Patient Communication	Rate the student’s use of effective communication skills when interacting with families (with emphasis on use of plain language, avoidance of medical jargon and emerging ability to provide teach-back).	
Plain Language Documentation	Was this student able to use plain language documentation when providing a patient plan to families, especially with regards to avoiding medical jargon and being sensitive to health literacy levels?	
Interdisciplinary Teams	Rate how the student demonstrated an integrated use of different specialties (e.g. Social Workers, Medical-Legal Partnership, Nurse Practitioners, Nurses, Community Health Workers, etc.) during patient care visits to evaluate and address the social determinants of health.	
Cultural Humility	Rate the student’s ability to work with patients of different socioeconomic and cultural backgrounds .	
Population Advocacy	Rate the student’s understanding of how advocacy within a medical career is an important part of health care outcomes.	

Figure 1: Evaluation Results



Caption: This figure demonstrates how many students received evaluations with 0 (unable to assess), 3 (intermediate), 4 (proficient/practiced/skilled), and 5 (expert) on each evaluation component.