Evaluating Leadership Education Assessment Tools within Medical School Program Objectives and Leadership Frameworks

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Abstract

Effective leadership skills need better incorporation in medical training to promote the efficacy of healthcare teams. Leadership training is not historically embraced as a critical element of team-based care for medical professionals. For most aspiring physicians, leadership ability grows early in their careers and increases with their responsibility, but reaching this level of individual leadership is a complex endeavor. Medical professionals need time to progressively understand, reflect upon, and practice the ability to lead effectively. For these reasons, there is a large benefit to introducing and incorporating leadership principles into the undergraduate medical training curriculum. In addition, medical education institutions must have a framework by which they can assess their progress in incorporating the domains and concepts of leadership into their curriculum. Through this study, we aim to synthesize an evidence-based, medical school-specific framework that assesses holistic leadership models and the objectives, competencies, and assessment methods used by Geisinger Commonwealth School of Medicine (GCSOM) to better perceive relative strengths and gaps in embedding leadership within the curriculum.

A literature search was conducted using key terms related to leadership studies. Main themes, gaps, and analytic frameworks were summarized. The six GCSOM program objectives and the corresponding competencies for each objective were used in conjunction with high-yield findings to supply an example and comparison of related terms in leadership domains.

The Medical Leadership Competency Framework (MLCF), Emotional Quotient Inventory (EQ-i), and the Five Factor Model (OCEAN) were evaluated for each model's ability to be an assessment tool to gauge the incorporation of the leadership domains into the curriculum of GCSOM. In comparing the five leadership domains of the MLCF, GCSOM's objectives and competencies did not explicitly mention the principles and concepts referenced in the MLCF but maintained themes. While a good framework for students to reflect on personality traits affecting individual growth, the OCEAN model was not valid for institutional assessment of leadership. The EQ-i assessment provided a satisfactory framework for leadership evaluation in comparison to GCSOM's program objectives and competencies.

While the literature captures the disparities and overall necessity to include leadership in medical school curricula, there is still a gap in providing a standard assessment to evaluate institutional progress. By evaluating assessment tools used by GCSOM in leadership education, the school, and other medical schools can improve leadership training to better develop a generation of leadership-oriented physicians.

Introduction

Medical leadership is a required competency for all physicians (1). A hallmark of good patient care is well-coordinated care. Good medical leadership allows clinical teams to deliver high-quality healthcare (1). Medical trainees are typically introduced into leadership roles early in their careers. Most residents lead a group of junior residents and medical students (2). This responsibility continues to grow over the career of a physician; as a result, leadership training should be emphasized during medical training (1). Recognizing the critical role leadership plays in medical practice and delivery, the current lack of leadership-specific education among other technical skills may limit the success of future medical trainees (1, 2).

During a time when burnout is a concern, progressive leadership training may assist in building resilience and providing physicians with a framework for self-reflection and improvement (3). Various leadership frameworks have been developed to support the self-evaluation of physicians and trainees alike. The Medical Leadership Competency Framework (MLCF) is a tool that categorizes five domains of leadership, and each domain is broken down into four to five competencies that a medical trainee can assess themselves against (4, 5). Daniel Goleman, a key figure in emotional intelligence research, references the power of emotional intelligence in leadership success (6, 7). The Emotional Quotient Inventory (EQ-i) is a 133-statement assessment that takes approximately 20 minutes to complete and evaluates emotional intelligence. Five domains each contain 3 competencies for a total of 15 elements, as described in Figure 1. The Five-Factor Model (OCEAN) looks at Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism (8). These traits are assessed with different tools, including the Trait Self-Descriptive Inventory in 1992 by Tupes and Christal, as well as more modern approaches using 15–25 item surveys. Concepts such as emotional intelligence, cultural sensitivity, and professionalism training have slowly crept into medical curricula nationwide (9, 10).

However, it can become unclear how to compare a trainee's individual leadership development alongside institutional progress due to inconsistent objectives between the frameworks. Overall, these frameworks help to compile the various principles that can guide a student doctor to be a good leader in healthcare (9). Each framework emphasizes different components of leadership, providing multiple perspectives. In addition, there is no standardized leadership development curriculum for medical educational institutions (4). This makes it difficult to evaluate the extent to which institutions have incorporated and progressed medical leadership into training (4). Therefore, some schools such as the University of Massachusetts have developed optional leadership modules

Figure 1. Emotional Intelligence wheel showcasing the 5 domains and 15 competencies used within the EQ-i assessment (Copyright © 2011 Multi-Health Systems Inc. All rights reserved. Based on the original BarOn EQ-i authored by Reuven Bar-On, copyright 1997).

with feedback to enhance leadership domain integration (4). Other than this approach, utilizing direct assessment tools with current curriculum offerings can show if there is need for a separate program in the first place, and what steps may help to further leadership training efforts.

Methods

A literature review was conducted using the PubMed database. The terms "medical," "leadership," and "curriculum" were used to produce 3,977 articles between 2014 and 2023. After which, we used the terms "framework" and "training" to further filter our results. We assessed the peer-reviewed articles for leadership frameworks that can be used for assessment. As students of Geisinger Commonwealth School of Medicine (GCSOM) and the School of Graduate Education, GCSOM was determined to be a feasible medical education institution to compare these frameworks against. The EQ-i, developed by The Emotional Intelligence Training Company from a model by Reuven Bar-On, has already been used by GSCOM in order to collect data on emotional intelligence for medical students. Each framework was first compared to the GCSOM six program objectives followed by the respective competencies within each objective to determine if there was a relevant relationship and incorporation of leadership principles. Several tables were generated noting relevant passages between domains and competencies.

Results

After matching MLCF framework competencies to GCSOM program objectives and corresponding competencies within them, each MLCF domain did match with at least one GCSOM objective (Figure 2). Most domains incorporated several objectives, with many including multiple competencies within that objective. Major associations have been noted in Figure 3. Of note, MLCF competencies like "Acting with Integrity," "Managing Resources," and "Ensuring Patient Safety" touched upon five of the six GCSOM objectives each, excluding "Critical Thinking" for the first and "Professional Identity" for the latter two. These are individually supported by several GCSOM competencies. One example includes the fourth competency of GCSOM objective "Health System Science," outlined as "Engage in identifying medical errors and implementing potential systems solutions," paired with the MLCF competency "Ensuring Patient Safety" under the MLCF domain "Improving Services."

With the EQ-i comparison, multiple factors within the assessment matched GCSOM objectives, including direct matches between each of the given EQ-i domains. These include matches like "Self-Perception" with "Professional Identity," "Decision Making" with "Critical Thinking," and "Interpersonal" with "Patients, Families, and Communities." Of note, the GCSOM objectives "Clinical Skills" and "Knowledge for Practice" had weaker ties to EQ-i competencies than the other four objectives.

When reconsidering the OCEAN model as an assessment tool, the use was found to be largely limited to military and business personnel. Traits like "Neuroticism" did not explicitly match into MLCF domains but did match single competencies for several GCSOM objectives. Regarding leadership, multiple studies cited traits like "Agreeableness" as both a positive and negative predictor, limiting some use as an accurate tool for institutional leadership assessment.

Discussion

As anticipated by the likes of Daniel Goleman and other researchers in the emotional intelligence space, there was significant overlap in domains of emotional intelligence with those of leadership. Specific competencies within GCSOM's

Geisinger Objective "Professional Identity," **Competency 2:** Engage in lifelong personal and professional development and socialzation into the medical community of practice.		
MLCF Domain	MLCF Competency	MLCF Criteria
A. Demonstrating Personal Qualities	**3. Continuing Personal Development**	1) Actively seek opportunities and challenges for personal learning and development 2) Acknowledge mistakes and treat them as learning opportunities **3) Participate in continuing professional development activities** 4) Change their behaviour in the light of feedback and reflection

Figure 2. Example of entry made for the GCSOM objective "Professional Identity" paired with relevant MLCF domains.

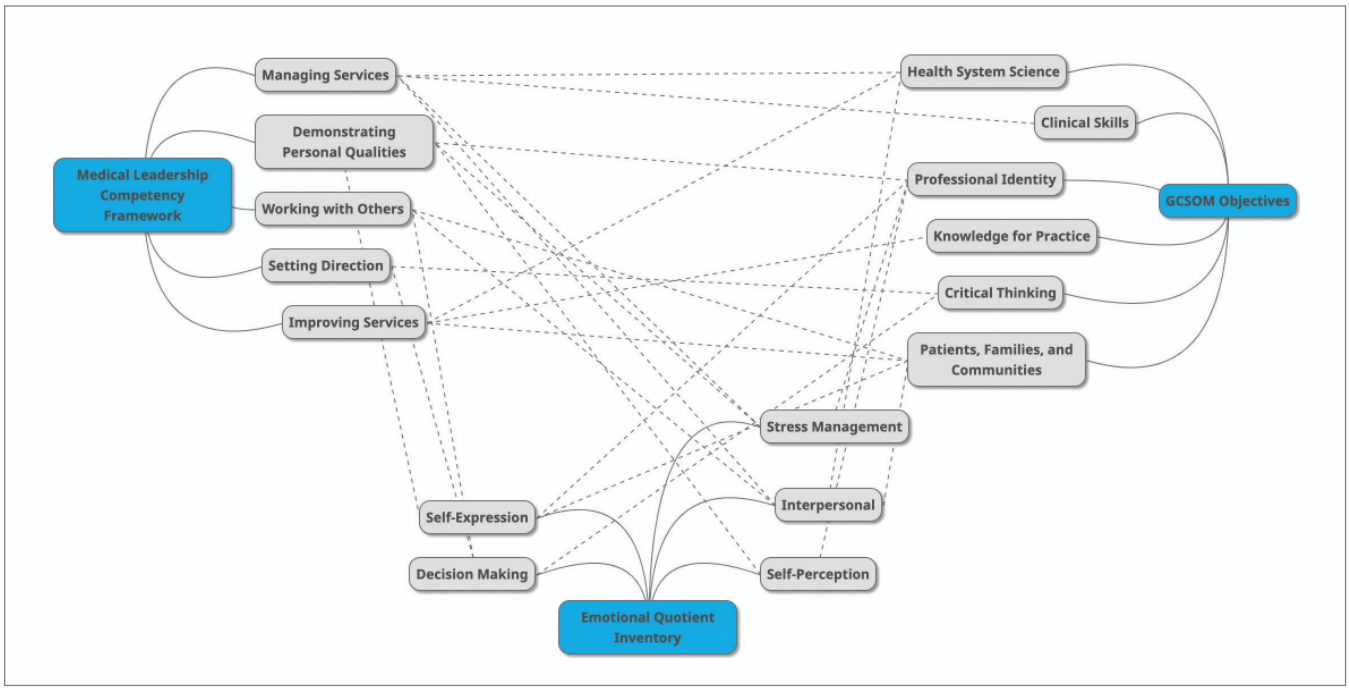

Figure 3. Mental map of key connections (see supplemental data for full connections) between the MLCF domains, Geisinger Commonwealth objectives, and the Emotional Quotient Inventory (EQ-i) domains.

list of objectives touched upon each leadership and emotional intelligence domain, though some areas had weaker associations or limited connection. It could be useful to weigh the scaling of the EQ-i against GCSOM objectives to measure which objectives are being reinforced the most at GCSOM. With such overlap overall, the EQ-i makes for a compelling choice to model both GCSOM objectives, as well as MLCF domains.

GCSOM itself currently offers eight EQ-i trained faculty coaches to optionally review results individually with students for 1-hour sessions. A broad overview session is offered as well, though with limited direct reference to leadership. Despite using the EQ-i assessment, only the Workplace and Coaching reports have been disseminated to students. The Leadership Report, which includes categories in Authenticity, Coaching, Insight, and Innovation, could be useful as a more streamlined way to assess leadership for students within this assessment. As seen from the theme analysis, these leadership qualities could also be pulled out from the assessment using the Coaching and Workplace reports as well.

Conclusion

The EQ-i does show adequate standing as a leadership assessment tool based on its correlation to traditional leadership frameworks and matching with GCSOM's own objectives and competencies. Although the assessment is already performed at the school, there could be improvements made with the execution in order to better measure leadership. The Leadership Report offered by EQ-i could be disseminated to students and coaches to more clearly reflect on this trait.

In addition, coaching sessions could be incorporated into the curriculum rather than offered as an optional session to encourage participation and ensure reflection is taken regarding these traits.

If measurement of longitudinal progression is beneficial, hosting the assessment early in the medical school timeline and then again before matriculation to residency would be an appropriate option. This could allow for counseling of students to recognize their strengths and develop their weaknesses as desired. While it was shown that GCSOM's objectives and competencies matched with leadership criteria in multiple forms, consideration could be made to more explicitly call out these leadership domains. GCSOM currently fits curriculum themes within the Society, Systems, and Humanities in Medicine framework, and explicitly implementing leadership sessions into the preclinical curriculum may provide more easily perceptible changes with tools like the EQ-i. It would also be advantageous to continue monitoring the usefulness of the EQ-i as a leadership tool and compare methodologies with other medical schools as leadership instruction within medical education continues to gain traction.

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Disclosures

None

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