An Assessment of Emotional Intelligence in Medical, Physician Assistant, and Athletic Training Students

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Abstract

Background: Research suggests that a key piece of any successful patient-provider interaction is emotional intelligence (EI), or the awareness of one's emotions and the ability to manage them competently. It has been suggested that EI is declining amongst healthcare professionals.

Objective: This study sought to evaluate the differences in overall EI among medical (MS), athletic training (AT), and physician assistant (PA) students in their first- and second-year of training, with additional emphasis on gender identity and race/ethnicity.

Methods: EI questionnaires were collected via the Schutte Emotional Intelligence Scale (EIS). Two one-way ANOVAs were conducted to determine mean differences in EI and academic program and year in school. Kruskal Wallis tests were conducted to evaluate EI and gender identity and race/ethnicity.

Results: No significant differences were observed in mean EI in degree program (MS, AT, and PA) or year in school (first and second). However, significant differences were observed in males, scoring higher than females, and across racial/ethnic subgroups.

Conclusions: This study demonstrates EI differences in men and women that do not agree with previous literature, worthy of further exploration. Differences in EI among various racial/ethnic groups suggests that EI is related to cultural factors. EI implementation in curricula should be culturally competent in order to maximize effectiveness and improve future patient care.

Key Words: patient-centered care, patient-provider interaction

Introduction

While the concept of general intelligence has been studied in its modern form (IQ) for over two centuries, emotional intelligence (EI) is relatively new, having been conceptualized broadly in the 1980's.[1] While IQ is a common measure used in attempts to predict professional success, IQ was associated with only 6% of performance in a profession versus 27-45% for EI.[2] Emotional Intelligence Scale (EIS) was developed by Schutte and colleagues in order to evaluate emotional competencies and positive social behaviors via a 33-item analysis.[3] Further analysis beyond the initial psychometrics demonstrated that the EIS could include four clusters; social awareness, self-awareness, self-management, and social skills. Researchers concluded that four of the five competencies overlapped with the Big Five personality traits; emotional stability, consciousness, extraversion, and open-mindedness.[4] The EIS has demonstrated correlation with factors of emotional intelligence including alexithymia, attention to feelings, clarity of feelings, mood repair, optimism, and impulse control. All of these are imperative for healthcare providers to provide satisfactory patient-centered care in an increasingly diverse patient population. Concerns over ensuring future healthcare workers possess the proper skills required to meet the needs of their patients have risen as recent cohorts of students have previously demonstrated a lack of empathy for others.[5]

Patient care requires a team of experts in various fields in order to provide comprehensive healthcare. Cooperation between professions relative to patient interactions is important for enhancing patient outcomes.[6] In an increasingly complex healthcare environment, patient-provider engagement-based strategies can help with difficult clinical decisions. [7] Physicians, physician assistants, nurses, nurse practitioners, and athletic trainers can benefit from possessing emotional intelligence. Along the lines of interprofessional cooperation, enhanced levels of EI among healthcare professionals has been associated with better patient outcomes.[8–11] Healthcare workers with higher scores in emotional intelligence are shown to have higher levels of engagement with patients, creating higher levels of energy and mental resilience in the provider.[12] Emotional experiences of out-patient and in-patient care are key determinants of patient satisfaction. Patients report higher satisfaction and happiness in clinical encounters with physicians who possess higher levels of EI. In physicians with high EI, patients reported higher satisfaction and happiness during their clinical encounters.[13]

To date, there have been no direct comparisons between EI levels in graduate-level healthcare professional students in multiple disciplines.[13] Given the lack of investigation comparing EI competency in students from medical (MS), physician assistant (PA), and athletic training (AT) programs, the aim of our study was to utilize a validated scale to evaluate respondents EI levels, differences between programs, and areas administrators may choose to target for improvement. Given a career in healthcare involves significant interaction with others to not only communicate diagnoses, but accurately obtain health information, graduate programs may benefit inherently from EI training in supplement to clinical skills education.

Methods

Participants were first- and second-year medical (DO) students, physician assistant (PA) students, and athletic training (AT) students. Students were recruited by convenience sampling via an initial email gauging for participation interest. Interested students were provided with a

link to the survey and were given a two-month period to complete the survey. An institutional review board (IRB) approved this study and all participants provided consent at the start of the survey.

The EI Scale (EIS) was selected for this study due to its established validity and reliability.[14,15] The EIS is a questionnaire with 33 items in which respondents select answers based on their level of agreeance to the item posed according to a five point scale (1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree). Each item also included a 'Prefer not to answer' choice, producing a total of six answer options for these items. Once data was completed, it was analyzed for any prefer not to answer selections. As there were no prefer not to answer selections, we did not have to remove any survey responses. Additionally, the three reverse-coded questions were reversed for appropriate analysis. A cumulative score of the 33 items calculated overall EI. The overall reliability of the survey data for this study was $\alpha = 0.87$.

The data was collected via Qualtri"s (www.qualtrics.com) software. Data was downloaded, coded and analyzed via SPSS (Version 28.0; IBM Corporation, New York, NY, USA). Individual one-way ANOVAs were calculated for EI results by academic program and year in school. Due to violations of homogeneity, ANOVAs with Welch's adjustments were conducted for gender identity and race/ethnicity. Due to small sample sizes within the subgroups for gender identity and race/ethnicity, this is where comparisons stopped.

Results

Thirty-nine students (male = 8, female = 31, DO = 18, PA = 11, AT= 10, first year = 18, second year = 21, DO age = 25.83 + 4.36, PA age = 27.36 + 6.25, AT age = 22.60 + 1.26) completed the survey. Table 1 demonstrates the descriptive statistics for the participant population with associated EI composite score means and standard deviations. No statistical differences were observed in total EI score with one-way ANOVA analyses when comparing academic programs ($p > 0.05$) or year in school ($p > 0.05$). Statistically significant EI differences were determined via Welch's Adjustments for gender identity ($p= 0.03$, eta-squared 0.08) and race/ethnicity ($p = 0.001$, eta-squared 0.45).

Table 1: Distribution of Participant Emotional Intelligence Levels with Means and Standard Deviations

Group	N	Mean	SD	Confidence Interval	
All Subjects	39	127.33	14.88		
Program					
Medicine	18	126.61	17.69	117.82	135.41
Physician Assistant	11	129.36	11.17	121.86	136.87
Athletic Training	10	126.40	14.09	116.32	136.48
Year in School					
First Year	18	125.33	19.93	115.42	135.24
Second Year	21	129.05	8.75	125.06	133.03
Gender Identity					
Male	8	135.63	9.46	127.72	143.53
Female	31	125.19	15.38	119.55	130.84
Race/Ethnicity					
American Indian	6	139.17	8.52	130.23	148.11
Asian	4	106.00	22.70	69.88	142.12
Black	1	126.00	0.00		
Hispanic/Latino	2	149.50	0.71	143.15	155.85
Caucasian	24	126.75	10.92	122.14	131.36
Other/Multiple	2	120.00	1.41	107.29	132.71

Discussion

Emotional intelligence is an invaluable component to the competency of healthcare providers. Therefore, it is important for students in healthcare educational programs to learn, develop, and demonstrate the qualities of EI. In doing so, students will be equipped for effective, mutually beneficial interaction with future patients. Seeking to evaluate EI differences in students across healthcare educational programs, this study determined EI levels of MS, AT, and PA students. Additional considerations were given to differences in year in school, gender, and race/ethnicity.

Overall mean EI scores in the study's population were consistent with previous research done on comparable populations with similar demographics. The overall mean EI score for the student populations were slightly higher than but still consistent with previous research using similar EI measurements.[16,17] However, males in this study demonstrated higher overall EI scores than females, inconsistent with the body of EI research.[3,18,19] One plausible explanation for this difference was the average age of each group, where male respondents were much older than females. Increased age is associated with higher EI [5]. Additionally, the conscious competence model published by Keeley[20] provides a potential explanation. According to this framework, there is a hierarchy of competence amongst medical trainees. Unconscious incompetence, the beginning of this hierarchy, is a state where trainees lack the skills needed to excel. They are also unconsciously unaware of their deficiencies, potentially ascribing to a false sense of ability due to their ignorance. In this study, unconscious incompetence could account for a false elevation of perceived EI amongst the male population. On the other hand, women in the study may have been more conscious of their EI incompetence, scoring lower on EI measures, and accounting for the male/female disparity. While considering these explanations, an obvious truth remains; gender is an important piece of personhood. These findings suggest it has a great influence on functional EI.

The findings demonstrated no statistically significant differences in cumulative EI scores between MS, PA, and AT students. Additionally, they suggested no statistically significant difference in EI between first- and second-year students in their respective training programs. This study is consistent with past research that suggests no significant differences in EI across health-related disciplines. [17] However, previous research found that EI levels were higher for individuals in undergraduate programs as compared to first year professionals, suggesting a decrease in EI from the beginning of training through the first year in the workplace.[16] This study expands upon that previous finding, suggesting the decrease is not accounted for by the transition from first-year to second-year student status, as no significant differences in EI were found between first- and second-year students. Rather, this EI decrease may potentially occur later in training, after entering the workforce, or in a continual manner as curricula advances across training programs. This finding is helpful to the overall EI discussion, but it still does not explain the origin of the observed drop off. The timing of and reasoning behind this data point may prove difficult to determine.

This study also found some noteworthy differences in EI in regard to race and ethnicity. Hispanic/Latino students had higher cumulative EI scores than their peers, well above the study's mean EI score. American Indian/Alaska Native respondents also scored well above the mean. Asian respondents scored well below the mean. These data points present some important points to consider. A previous study of Asian school teachers using similar EI measurement methods found their overall EI mean score to be 122.15.[21] Compared to the Asian students in this study, there is a significant deficit. This is problematic as medical professionals are asked to practice in emotionally charged situations every day. They deal with difficult situations, provide important care, and need to be emotionally intelligent to do so effectively. If individuals entering medical professions already exhibit lower levels of emotional intelligence compared to their counterparts, and studies indicate that their emotional intelligence further declines after graduation, it suggests that the medical field may face even greater challenges in this regard than the education sector.

On a broader scale, intuition would suggest that one's upbringing, culture, and lived experiences, in part due to their race and ethnicity, are contributory to overall EI. Emotional intelligence may also mean different things to different people groups with different ethnic and cultural backgrounds. That being said, the foundational underpinning of EI's relationship to race and ethnicity is unclear. However, these findings are clear in one sense; EI education needs to include cultural competencies and ethnic considerations for maximum effectiveness.

Limitations and Future Research

As with every research study, this study was partially limited in scope. Relatively small sample sizes existed in the racial/ethnic subgroups, despite significant results. However, in an effort to continue the important investigation of EI's association with race and ethnicity, future research could utilize a larger scale. Incongruence amongst the male and female populations (8 males and 31 females) was also a limiting consideration in results. More robust study is warranted to investigate the origins and associations between gender and overall EI. Additionally, this study served as a snapshot view of EI. Further research is warranted in a longitudinal manner to evaluate EI over the entire course of an educational program, as curricula advances and trainees grow. These suggestions could provide valuable insight on EI development throughout the health care training process and into the transition to clinical practice.

Conclusions

Medical professionals routinely engage in stressful, demanding situations. They interact with diverse populations, provide nuanced care, and are called to communicate to patients with empathy. Their jobs can be difficult and are often emotionally taxing. Proficiency in emotional intelligence has been shown to improve patient and provider quality of life on a number of fronts. It would make sense, then, for these practitioners to receive a significant amount of time learning about EI and being trained on how to use it in a clinical setting. More emphasis should be placed on EI during the admissions process and curriculum of medical and other allied health graduate programs. It should be implemented in a culturally competent manner, considering racial and ethnic variables. If these ideals were made reality, healthcare students would be more adept at meeting their patients' unique needs in a variety of settings.

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