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Emotional intelligence and clinical performance across practice areas: Implications for health professions educators and practitioners

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ABSTRACT

Objective: The evaluation of student clinical competencies is multifactorial, with emotional intelligence (EI) considered as an essential component for success. Currently there is a lack of knowledge on whether distinct EI competencies are related to specific practice areas. This study purpose was to explore the relationship between supervisor's perception of student EI and clinical performance across practice areas. **Methods:** This cross-sectional study utilized a sample of convenience to gather data from 52 full-time occupational therapy students and their respective supervisors at the completion of their clinical rotations. The Fieldwork Performance Evaluation (FWPE) and The Emotional and Social Competency Inventory-University version (ESCI-U) were used. A Pearson's correlation coefficient analysis was used to explore the associations between EI competencies and clinical performance. **Results:** Higher EI scores were associated with higher scores on clinical performance during physical disability rotations. Findings show EI competencies of conflict management and self and organizational awareness to be associated with student ability to use clinical reasoning to deliver client-centered occupation-based goals, including proficiency of technical skills in a physical disabilities practice area. **Conclusion:** Findings provide additional support and suggestions for the context related role of EI in health profession clinical education.

Keywords: clinical education, emotional and social intelligence, health professions education.

Introduction

Clinical education is a fundamental and multifaceted aspect of professional development, therefore it is crucial to consider additional dimensions that may relate and contribute to student performance [1-3].In clinical settings, an individual who is able to interpret and understand the meaning of their own and others' emotions may be better adept at guiding their clinical decision-making based on these abilities [4-7].

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A recent study by Campbell and Corpus[8] identified essential student characteristics, which included emotional intelligence (EI) competencies for clinical performance that further clarified consistent definitions of professional behaviors for practice. Furthermore, EI has been linked to successful performance across a variety of fields; academic, corporate, and medical workplace environments [9-11]. As a component of professional development, EI plays a significant role in health care practitioner's interactions with clients and colleagues.EI is a form of social intelligence and involves an individual's ability to identify and respond to one's own emotions and behaviors in addition to those of others [11,12]. Goleman [4] and Boyatzis's [13] provide a holistic and comprehensive model,

conceptualizing EI as learned abilities, skills or competencies. Competencies are defined as behavioral representations of EI demonstrated in performance of self with relation to othersat work and in clinical settings [4,13].Occupational therapy (OT) education programs have recently begun to assess EI as a relevant competence for clinical performance [14-18]. As an EI skill, effective communication is a critical strategy for collaborative inter-professional health care teams, clinical decision-making, conflict resolution, and leadership skills [2,19]. While the role of EI continues to expand in a multitude of settings, there is currently a lack of knowledge on whether distinct EI competencies are related to specific practice areas, and which EI competencies are needed for success during particular clinical settings. This study sought to explore whether student's EI competencies associated with their clinical performance as measured by their supervisors. It also examined whether certain EI competencies related to performance in a specific practice areas.

Emotional Intelligence and clinical performance

Medical and nursing programs indicate that higher EI scores have been associated with higher quality clinician-client relationships, collaborative communication, and better coping strategies in rapidly changing complex practice settings [20-25]. Researchers have identified several critical professional behaviors commonly associated with clinical success at clinical settings such as flexibility in thinking, ability to interpret feedback, comfort with physical handling of clients, clinical reasoning, self-awareness, self-confidence, and the ability to take responsibility for actions [5, 26-28]. Taylor[5] describes the value of conflict resolution, collaborative client-care and effective communication as key elements in the therapeutic relationship. In addition, Brown, Williams, and Etherington [6] as well as Dancza et al [16] found a significant relationship between EI and clinical performance ratings. Students are expected to achieve clinical competence in a variety of complex practice settings by effectively integrating knowledge, skills, and personal characteristics [27-29]. Cognitive, emotional and social aspects of performance have been associated with clinical success. The cognitive component has been explored through academic performance, although not found to be a strong predictor of student clinical success [15, 30-32].Given the fact that traditional measures of academic success alone have not been found as strong predictors of student clinical success, more recent studies have begun to shift emphasis toward non-cognitive predictors [4,6,10,11].Abilities now considered important for clinical effectiveness appear to be related to EI competencies such as: interpersonal skills, patient management skills in multicultural environments, and the ability to collaborate well with others, and lead teams. In general, higher EI has been associated with students who had stronger clinical performance outcomes [4,6,9,10,33].Emotional habits are deeply ingrained; thus, building EI tends to take practice and time to develop [4,19]. Therefore, in a clinical context, to further develop acquired EI competencies, one must be motivated to take initiative during training, practice, and feedback from colleagues and supervisors.Some researchers foundEI competencies have remained static commensurate with behaviors throughout the curriculum [34-36].Others have found an increase in EI competencies after clinical rotations without providing specific EI training for their students [37,38]. In contrast, other studies that used EI training modules found positive results [39-41]. These varied studies indicate that exposure to an academic health profession curriculum itself may not be enough to develop EI without purposeful pedagogical support to promote sustainable change.

EI Competencies and Clinical Practice Areas

Student's EI competencies may manifest differently depending on the clinical rotation type. For instance, Erdman, Bonarotti, Provenzano, Appelbaum, and Browne[42] examined medical surgical education students' EI competencies across different surgical practice areas. They found that students in emergency surgery settings demonstrated higher EI scores on emotional self-control, perhaps because they self-select a profession, which attracts certain EI skill sets. McKinley et al[43]reported distinct combinations relative to high and low EI profiles in each practice area. For example, pediatric residents scored lower in assertiveness and higher in empathy, while pathology residents scored the highest of all three groups in emotional self-control. Neuman et al[44], in a systematic review, reported that students who preferred environments with less demanding patient oriented contact, but were placed at practice sites with increased patient contact situations, showed a decline in empathy. Similarly, Brown et al [45] described OT student empathy scores as lower for substance abuse practice settings. However, student empathy in physical disabilities, pediatrics, and mental health settings were higher. These findings may indicate a threshold where decreased EI competency is associated with challenges

presented by specific settings that do not match student emotional capacities.

Despite noticeable scholarly work on student's EI competencies and clinical performance, there is a limited, but emerging body of evidence relating the role of EI with student clinical education in occupational therapy [6,15,33,45,46]. To date, there is no firm conclusion that EI competencies correlate differently during the variety of clinical rotation experiences. Therefore, the purpose of this study was to explore the relationship between EI competencies and clinical performance across different practice settings within occupational therapy as rated by their respective supervisors.

Methodology

The non-experimental, cross-sectional, correlational design was used to investigate the relationship between EI and fieldwork performance in an OT bachelor of science (BS) and Master of Science (MS) program. A sample of convenience was utilized without any randomization as part of the methodology. The University's Institutional Review Board (IRB) approved the research protocol as exempt status using archived data.

Study population

Data was collected on 52 students enrolled in a full-time occupational therapy BS/MS program; age range 19-42 years old from culturally diverse ethnic, socio-economic and educational backgrounds. Student's clinical supervisors (n=104) provided consent as participants in this study. Clinical supervisors were from various practice settings in the greater New York metropolitan area in the following settings: (a) physical disabilities (PD) - e.g., acute care, rehabilitation centers; and (b) pediatrics (PED) - e.g., school settings, private pediatric clinics. Clinical supervisors from PD practice settings had on average 14 years (n = 52; *sd*=6.5) of supervisory experience; and PED supervisors had 16 years of experience (n =52; *sd*=7.0). The difference in clinical supervisor's years of experience is statistically significant, but not educationally or clinically [47]. Supervisors and clinicians with more than 10 years of experience are considered experts in their field.

Procedures

This study focused only on PD and PED clinical rotations due to data availability. The EI assessment and clinical performance level II scores were completed by supervisors at the conclusion of each of two clinical rotations during the final semester of a 3-year program. These two level II performance rotations included two full time clinical experiences of total of 10-12 weeks each.

Instruments

Emotional and Social Competency Inventory-University version (ESCI-U) [48]

The ESCI-U is a multi-rater 70 item survey utilizing a five-point Likert response scale and measures five clusters which are comprised of 14 competencies of emotional, social, and cognitive intelligence: emotional self-awareness, empathy, organizational awareness, emotional self-control, achievement orientation, positive outlook, adaptability, coach and mentor, inspirational leadership, influence, conflict management, teamwork, systems thinking, and pattern recognition [14,48]. Psychometric properties of the test based on samples of 62,000 completions of the ESCI and 21,000 of the ESCI-U reveal that each scale shows model fit and satisfies criteria for discriminant and convergent validity and 1,629 self-assessments and 21,288 informant assessments of the ESCI-U were analyzed. Composite coefficient of the 12 scales ranging from 0.86 to 0.94 [14,49,50]. A variety of other studies showed validity of behavioral EI against various performance measures. However, EI does not necessarily correlate with cognitive measures or personality traits [14,49,50].In the current study the ESCI-U version was used with 14 competencies.

American Occupational Therapy Association Fieldwork Performance Evaluation(FWPE) [51].

Grades for clinical performance are assigned by clinical supervisors based on the American Occupational Therapy Association (AOTA) Fieldwork Performance Evaluation (FWPE)[51] at the completion of each of their two level II full-time fieldwork/clinical experiences. The FWPE a 42 item four-point Likert response scale that measures overall rating of student clinical performance based on a total of seven sub-scale scores. The FWPE seven sub-scales of clinical experience include: (a) fundamentals of practice-including adherence to ethical and safety judgment according to principles of practice; (b) basic tenets of the profession- addresses the ability to articulate the role and values of the profession; (c) evaluation and screening- including the ability to use clinical reasoning and problem solving skills to assess client needs based

on professional knowledge; (d) intervention-identification of client-centered occupations relevant to goals to implement evidenced based practice including proficiency of technical skills; (e) management of occupational therapy services- managing expectations in complex practice setting for best practice; (f) communication-including verbal and written professional documentation; and (g) professional behaviors-including several key components of practice performance such as self-reflective abilities, interpersonal and collaborative skills for client-centered and collegial relationships, and self-management skills. Difficulty in professional behaviors has been associated with student clinical failure [8,28].The psychometric properties of the FWPE were evaluated using a Rasch Analysis with good reliability to determine level of item difficulty and student response across a variety of practice settings[52].

Data analysis

All data were entered into Statistical Package for the Social Sciences (SPSS) version 24 [53]. Descriptive statistics were calculated to obtain means, standard deviations, skew and kurtosis, as well as frequencies for demographics. To investigate the hypothesis of the relationship between each of the 14 EI competencies, with the 7 average scores, and total score of the FWPE, Pearson correlations were used and level of significance was set for 0.05.

Results

Study hypothesis sought to detect associations between each of the 14 EI competencies, using the average of the 7 FWPE sub-scale scores and total score of the FWPE, per rotation type (Table 1). Because Section VII, Professional Behaviors, of the FWPE yielded the largest number of correlations, a separate analysis of the correlations was conducted for Section VII of the FWPE, Professional Behaviors, by looking at each of its questions across rotation type with EI subscales (see Table 2). Clinical supervisors years of experience differed statistically, $t(52) = -2.11$, $p < 0.05$. However, the average years of experience per each practice area is similar from a clinical education perspective (PD M = 14; sd = 6.5 and PED M = 16; sd = 7.0). Clinical supervisors in both practice areas are considered at an advance level[4,5]thus we did not include it as a possible confounding variable. FWPE Sections Fundamentals of Practice, Evaluation and Screening, Intervention, Management of Occupational Therapy Services, Communication, and its total score yielded significant, positive, and low to moderate correlations with EI competencies. Significant correlations appear to cluster by rotation type. For example, most of the significant correlations were between FWPE total score in PD rotation with EI competencies: conflict management, emotional self-control, organizational awareness, and positive outlook. Next, FWPE Sections Intervention and Management of Occupational Therapy Services yielded significant, positive, and moderate correlations in PD rotation with EI competencies: conflict management, emotional self-awareness, organizational awareness, and positive outlook. A predominance of technical skills are utilized in PD interventions. This seems to have promoted self-regulatory components of EI during the PD rotation. The PED rotation had the fewest significant correlations.

The seventh Section of the FWPE represents professional behaviors of the overall clinical competency, mainly addressing self-management and interpersonal skills. Examination of the Professional Behaviors subscale of FWPE ratings revealed multiple significant, positive, and low to moderate correlations with the EI competencies in the PD rotation. Again, PED rotation yielded the least number of significant correlations with any of the seventh Section ratings. It appears that in PD rotation interpersonal skills are related to student's self-regulatory and cognitive capacity. We further examined data results (Table 1 and 2) to determine whether there was a greater number of significant correlations in certain EI domains. Across EI five clusters, correlations with FWPE are generally scattered. However, it appears that the EI Self-Management cluster yielded seven significant correlations with FWPE seven sub-scale sections and eight significant correlations with Professional Behaviors (Section VII) of the FWPE across rotations. EI, particularly the self-regulatory component, seems to play a decisive role when assessing student clinical performance in PD practice settings.

Table 1:Associations between Emotional Intelligence competencies with clinical performance measured by the FWPE

	Section I: Fundamentals of Practice	Section III. Evaluation and Screening	Section IV. Intervention	Section V. Mgmt OT Services	Section VI. Communication	SectionVII: Professional Behavior	FW Total Score
	PD	PD	PD	PD	PED	PD	PD
Achievement	.29*						
Conflict management			.36*	.30*	.34*	.40**	.33*
Coach and mentor						.34*	
Empathy						.29*	
Emotional self-awareness			.30*			.40**	
Emotional self-control	.29*	.31*				.39**	.32*
Organizational awareness			.32*	.31*		.38**	.31*
Positive outlook				.32*			.29*

Note. PD= Physical Disability rotation; PED=Pediatric rotation; * $p < 0.05$,** $p < 0.001$.

Table 2:Associations between Emotional Intelligence, Section VII of FWPE scores (Professional Behaviors)

	Takes initiative	Responds positively to feedback	Time management		Respect to diversity
	PD	PD	PD	PED	PD
Achievement					.29*
Adaptability					
Conflict management				.31*	.44**
Coach and mentor	.32*				
Empathy					
Emotional self-awareness					.29*
Emotional self-control	.32*	.34*	35*		
Inspirational leader					.41**
Influence					.39**
Organizational awareness					
Positive outlook			.36*		.32*
Pattern recognition			31*		.28*
Systems thinking					.44**

Note. PD= Physical Disability rotation; PED=Pediatric rotation; * $p < 0.05$; ** $p < .01$

Discussion

Despite ever-growing attention from academic researchers in the medical and allied health professions, there are a limited number of studies regarding the relationship between clinical performance and EI competencies in different practice settings. The current study is the first to explore the potential associations between each of the 14 EI competencies, FWPE 7 average sub-scale scores, and total score of the FWPE clinical evaluation form per rotation type. Findings of this inquiry portray a possible clinical learning profile that is context related. Physical disabilities rotation yielded a relatively greater number of associations between EI competencies and student's clinical performance as reflected in the FWPE score. In general, higher EI was associated with students who had greater success in their clinical education [9,10]. These findings provide additional support to a growing body of evidence regarding clinical education among health care professionals. Study results and reviewed literature are further

discussed in relation to the clinical context/rotation type, physical disabilities and pediatrics.

EI and clinical performance in physical disabilities rotation

The PD practice area requires more physical contact with adults and elderly clients compared to pediatrics. McKinley et al[43] found that EI profiles of physician residents from different practice areas were distinct. For example, pathology residents scored the highest in emotional self-control; however, they did not correlate EI to clinical performance or success as done in the current study. Furthermore, Gribble et al[34] found that OT, physical therapy, and speech therapy students demonstrated higher than population norms in Self-Management cluster competencies indicating that these competencies may be in alignment with expectations of professional skills across discipline and practice areas.Motivational and self-regulatory competencies such as achievement and emotional self-control have been associated with success in multiple professional contexts [50]. In PD, clinical supervisors may expect greater adherence to technical aspects of assessments and screenings. Several studies in the health professions literature suggest that higher EI, particularly self-regulatory competencies, are associated with greater performance in technical skills and a stronger indicator of success [18,26,42,43]. Other health care professions found similar trends. For example, Jensen et al[25] identified in their study that surgical resident's EI achievement competency contributed to success in managing expectations in complex practice settings. Erdman et al[42] reported that students in emergency surgery settings demonstrated higher EI scores on emotional self-control.

The ability to use clinical reasoning to implement evidenced based practice and to identify client-centered occupations relevant to goals is essential for best practice. Gard and Gyllensten[26] also found a positive relationship between promoting success in patient treatment outcomes as well as improved communication and clinical reasoning with EI competencies. We found a significant correlation in Section VII, Professional Behaviors, of Time Management and Respect to Diversity with the EI competency of pattern recognition. This EI competency is more cognitively based than emotionally driven. EI cognitive competencies relate to a student's capacity to understand and interpret complex situations, cultural diversity, and to recognize patterns. In the current study, we found the EI competencies of conflict management, self and organizational awareness were associated with student ability to use clinical reasoning to deliver client-centered occupation-based goals, including proficiency of technical skills. Hurley and Linsley[24] found similar results in their study, that health care practitioners who utilized EI competencies were more likely to provide effective client-centered interventions

EI and clinical performance in pediatric rotation

In pediatric settings, it is essential to articulate occupational therapy goals to parents and other health care professionals, as they are an integral part of the intervention. Two of the FWPE subscales, Professional Development and Communication and Documentation were associated with EI competencies. Brown et al[6] reported that EI competencies significantly predicted documentation and professional behavior scores on the Australian Student Practice Evaluation Form.Similarly, Yu et al[46] and Dancza et al[16] discussed the importance of effective collaboration and communication in pediatric settings for interacting with children, parents, educators, and co-workers as part of a professional team.

Study limitations

A convenience sampling method was used because the researcher had access to this particular group. To achieve a broader assessment of EI, obtaining baseline student EI across disciplines, the use of multiple raters is recommended [14,49,50]. Longitudinal studies are needed to determine, which resources and training support are needed for the professional development of student EI. Research could further ascertain to what degree the student-supervisor relationship contributes to performance ratings. Further studies are needed to understand the potential value of integrating EI training throughout health care curriculums and its impact on clinical performance.

The present study explored supervisor ratings of EI and clinical performance across PED and PD practice areas. The findings of this research contribute to the growing body of evidence of the role of EI in OT practice and clinical education. The study results are supported by the recent literature, which identifies EI competencies related to clinical performance: emotional self-control, organizational awareness, conflict-management, and cognitive competencies [49]. Self-regulatory EI behaviors were associated with clinical performance in PD practice where students are presented with rapidly changing complex environments that require adaptive behaviors in order to succeed. The findings in the current study suggest a potentially unique professional profile of skills that interface with clinical performance in PD settings indicating that

necessary competencies for success may be setting or context specific. A better understanding of the factors that influences clinical performance may help facilitate and promote student transition from classroom to practice setting in becoming entry-level practitioners. Additionally, student clinical performance could be enhanced by providing an educational framework for experiential learning that prepare students for diversity, complex and conflictual situations prior to clinical rotations. Lastly, educators may consider including in OT curriculum non-cognitive attributes of OT student learners such as self-awareness and self-regulatory competencies to prepare them to changing clinical settings.

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