

Differences in the emotional intelligence between undergraduate therapy and business students and the population norms

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Students occasionally experience difficulties during work-integrated learning and clinical placements. The authors reasoned that these placement difficulties might be related to the students' emotional intelligence (EI) being under-developed before they commence full-time clinical placements. A cross-sectional survey design was used to measure the EI of third-year undergraduate occupational therapy, physiotherapy, speech pathology and second-year business students (n = 369). Results showed that over 40% of therapy students reported scores that are considered low or markedly low in the EI domains of independence, problem-solving and stress tolerance. The EI scores for therapy students that were significantly higher than the Australian EI norms were self-actualization, interpersonal relationships, empathy, and impulse control. The mean scores of business students were within the normal range for all EI domains. A recommendation of our study is to include strategies that develop EI throughout the therapy curriculum and when preparing students for clinical placements. (*Asia-Pacific Journal of Cooperative Education, 2017 18(3), 224-241*)

Keywords: Clinical placements, work-integrated learning, emotional intelligence, physiotherapy, occupational therapy, speech pathology, business students, curriculum

INTRODUCTION

Emotional Intelligence

Emotional intelligence (EI) is defined as a "... set of emotional and social skills that influence the way we perceive and express ourselves, develop and maintain social relationships, cope with challenges and use emotional information in an effective and meaningful way" (Multi-Health Systems, 2011, p. 69). Increasingly, EI is a desired quality in workers around the globe, including healthcare and business employees, with Dacre Pool, Qualter and Sewell (2014) citing EI as a critical component of employability. Bar-on (2006) believes that to be emotionally and socially intelligent, individuals must be able to understand and express themselves, be able to comprehend and build healthy relationships with others, and effectively cope with the challenges, pressures and significant demands placed on the individual on a daily basis. Clinical placements are compulsory for therapy students and work-integrated learning is becoming increasingly more popular in business programs. Some students have difficulties during these placements for a range of reasons, many of which are related to deficient EI skills (Cooper, Orrell, & Bowden, 2010; Stagnitti, Schoo, & Welch, 2010). We reasoned that the difficulties during these placements for students may be related to the maturation levels of the therapy students' emotional intelligence. As a result, this study explores the baseline emotional intelligence of undergraduate occupational therapy, physiotherapy, and speech pathology students before they commence full-time clinical placements, and compares these students to business students who participate in no work-integrated learning placements during their university studies.

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Emotional Intelligence in the Health and Business Professions

On a daily basis, therapists are bombarded by scenarios that require their skilled reaction to emotion-filled situations. Distressed patients and families, vulnerable people in unfamiliar hospital environments, individuals with loss of function, healthcare teams under duress and high levels of medico-legal accountability are some examples of emotionally charged situations in healthcare settings (Birks, McKendree, & Watt, 2009). These emotion-filled scenarios require each therapist to develop their own ways to understand their own stress, regulate their reactions and use the emotional information to make clinical decisions (Howe, 2008; Larin, Benson, Wessel, Martin, & Ploeg, 2014). As Howe (2008, p. 180) states, "...practitioners who possess EI are most likely to create the most therapeutically positive relationship environments." The benefits of higher EI in the context of healthcare professionals include a positive impact on patient satisfaction (Weng, Chen, Chen, Lu, & Hung, 2008), coping and resilience (Bidlan & Sihag, 2014; Schneider, Lyons, & Khazon, 2013), job satisfaction (Ford, 2010), enhanced caring behaviors (Rego, Godinho, McQueen, & Cunha, 2010), and improved team performance (Quoidbach & Hansenne, 2009). Brown, Williams, and Etherington (2016) reported that occupational therapy students' EI was a significant predictor of aspects of fieldwork performance, however, their personality traits were not a predictor of performance. Another study involving healthcare students showed that those with high self-reported EI scores demonstrated enhanced caring skills (Wessel et al., 2008). Overall, therapists with higher EI competencies should be sought after by employers, while universities should be aiming to graduate therapists with well-developed emotional intelligence.

Emotional intelligence is equally important to business graduates who work in all types of workplaces and roles across the globe (Boyatzis & Saatcioglu, 2008). Business graduates need EI skills to communicate effectively in teams, cope with the stressors of deadlines, foster working relationships with colleagues and industry partners, and ultimately, make decisions under emotional pressure and deal with conflicts that are inherent in many workplaces. Business and health graduates may aspire to leadership positions and research has shown that leaders with higher EI skills are often more effective (Zeidner, Matthews, & Roberts, 2010).

Many authors argue that EI should be embedded in university programs in both healthcare and business (Boyatzis, 2008; Kruml & Yockey, 2010; Stoller, Taylor, & Farver, 2013). Emmerling and Goleman (2005, p. 9) state, "... completing rigorous graduate programs, passing testing, and gaining credentials ensure that those who pass such hurdles are of above-average intelligence. . . ." However, simply having a superior IQ does not guarantee that they will be superior doctors, accountants or leaders". Tertiary education has the remit to ensure graduates have the array of skills to succeed in the workplace, with many of these employability characteristics falling under the umbrella of EI skills (Artes, Hooley, & Mellors-Bourne, 2016; Sewell & Dacre Pool, 2010). As such, gaining an understanding of the EI abilities of university students has merit.

Emotional Intelligence and Clinical Placements

Healthcare students are obligated by their accrediting professional bodies to undertake clinical placements (World Federation of Occupational Therapists, 2002). However, work-integrated learning placements in business programs are a more recent phenomenon which, different to therapy student's placements, may or may not attract credit and might not be

assessable (Fallon, 2012; Smith, Ferns, & Russell, 2014). Jackson (2014) details that work-integrated learning placements are instrumental in developing graduate's work readiness by giving students an appreciation of the world-of-work and developing many employability facets including teamwork, problem-solving, communication, and professionalism.

Healthcare students occasionally experience difficulties during clinical placements in the final stages of their university program. Some unpublished work by Korman and Gribble in 2016 found that 12% (n = 503) of fourth year occupational therapy students in Australia failed their clinical performance evaluation that occurred halfway through a full-time placement. Subsequently, three percent (n = 503) of fourth-year students were graded as failing a clinical placement. The impact of failing a placement can impact a student's confidence during subsequent placements (Stagnitti et al., 2010) and delay graduation. Failing students also require supervisors to devote additional time and effort; time that takes the supervisor away from their patients (Basnett & Sheffield, 2010). Clinical placement difficulties for therapy students occur for a range of reasons including inadequate knowledge and skills, unsafe practice, and important to this study, poor interpersonal, intrapersonal and communication skills – skills that are underpinned by EI abilities (Chang, Boscardin, Chou, Loeser, & Hauer, 2009; Gutman, McCreedy, & Heisler, 1998; McGregor, 2007). Furthermore, Bird and Aukas (1998) identified that failing occupational therapy students were socially withdrawn, had poor communication skills, poor safety judgment, difficulty working with complex patients, a depressed attitude, projected their problems onto others, had poor insight and were defensive when given feedback. In contrast, James and Musselman (2005) reported that students who perform well during clinical placements work independently, use a range of stress management abilities, are open to feedback, demonstrate strong interpersonal and communication skills and require less time with the supervisor. Many of the core criteria used to evaluate a therapy student's performance during clinical placements are related to interpersonal and intrapersonal skills with the team and patients, and their ability to cope with stress during a clinical placement (Stagnitti et al., 2010), competencies that are underpinned by EI abilities.

For business students, EI has been shown to be positively correlated to many skills including time management, goal achievement, assertive communication, relationships in the workplace, and self-monitoring in social situations (Abraham, 2006; Bellizzi, 2008), and importantly for many business graduates, leadership skills (Boyatzis & Saatchioglu, 2008). Minimal research has discussed the difficulties business students experience during work-integrated learning experiences. Cooper, Orrell, and Bowden (2010) suggest that supervisors of business students on work-integrated learning experiences may have to deal with students who are under-confident in the workplace, have low self-esteem, who struggle to understand workplace culture, are shy and anxious when communicating with workplace colleagues, and stress management issues; all domains that are impacted by an individual's EI skills.

In 2014, 82% of Australian university students enrolled in undergraduate programs were 26 years or younger (Department of Education and Training, 2014). Emotional intelligence tends to increase with age due to environmental exposure and emotional maturation (Zeidner et al., 2010). Australian EI normative data show the mean Total EI for 18-29-year-olds (M = 93, SD = 14.3) being significantly lower than persons 50+ years (M = 101.9, SD = 14.2) (Multi-Health Systems, 2012). As Stein and Book (2011, p. 18) state, "...we live and learn, and one of the things we learn is to balance emotion and reason". Shanta and Gargiulo (2014) reported that nursing students in the early years of their program presented with

lower EI scores than senior students. Thompson, Bates, and Bates (2016) showed that clinical placements have a positive impact on work self-efficacy especially in younger students with less prior work experience. Given that EI continues to mature steadily during and after university studies, it is possible that students commence clinical placements with some aspects of their EI underdeveloped.

Stein and Book (2011) presented the highest EI scores for a range of professionals. For business professions, the highest EI scores in management consultants were assertiveness, emotional self-awareness, reality testing and self-actualization while in human resource personnel the EI domains of self-actualization, optimism, assertiveness and stress tolerance were highest. In the healthcare professions, social workers presented with high scores in independence, stress tolerance, assertiveness and impulse control while psychologists had higher scores in independence, reality testing, stress tolerance and flexibility.

In summary, therapy students who experience difficulties during clinical placements may have difficulties with skills that are linked to EI more so than academic knowledge. Given that EI has been found to continually improve from the teenage years through to later in life, the EI of therapy students will still be maturing as they commence their full-time, extended fieldwork placements at the end of their university courses. This study explores the baseline EI of undergraduate occupational therapy, physiotherapy, and speech pathology students before they commence full-time clinical placements, and compares these students to business students who arguably because of the differences in their characteristics and career ambitions may present with different dimensions of emotional intelligence. The baseline EI scores of both sample groups in this study are also compared to population norms.

METHODS

Participants and Timing

A cross-sectional survey design was used to measure the emotional intelligence (EI) of therapy students before they commenced their full-time, extended clinical placements, and business students at a similar point in their studies. This measurement point was selected to capture baseline EI as therapy students are about to commence their first full-time extended placements. We define 'full-time, extended clinical placements' as a placement in a healthcare setting that is four or more days per week, and of five or more week's duration. Ethics approval was attained from Curtin University's Human Research Ethics Committee.

Participants were identified from a convenience sample of third-year undergraduate occupational therapy, physiotherapy, and speech pathology students (therapy students) enrolled at four Australian universities. Business students were enrolled in one university. Four universities were used to recruit therapy students to ensure the total number of students contacted was similar for business and therapy. To maintain homogeneity, no post-graduate students were included. The business students were enrolled in programs with no enforced work-integrated placements.

Measurement of Emotional Intelligence

Three major EI conceptual frameworks have been described: trait based, ability based and mixed-models (Bar-On, 1997; Petrides & Furnham, 2001; Salovey & Mayer, 1990). The *Emotional-Social Intelligence Model*, (Multi-Health Systems, 2011), a mixed model, was selected as the EI construct for our study. This EI construct was selected as it comprises an individual's ability to perceive their own emotions, emotional expression, qualities of their

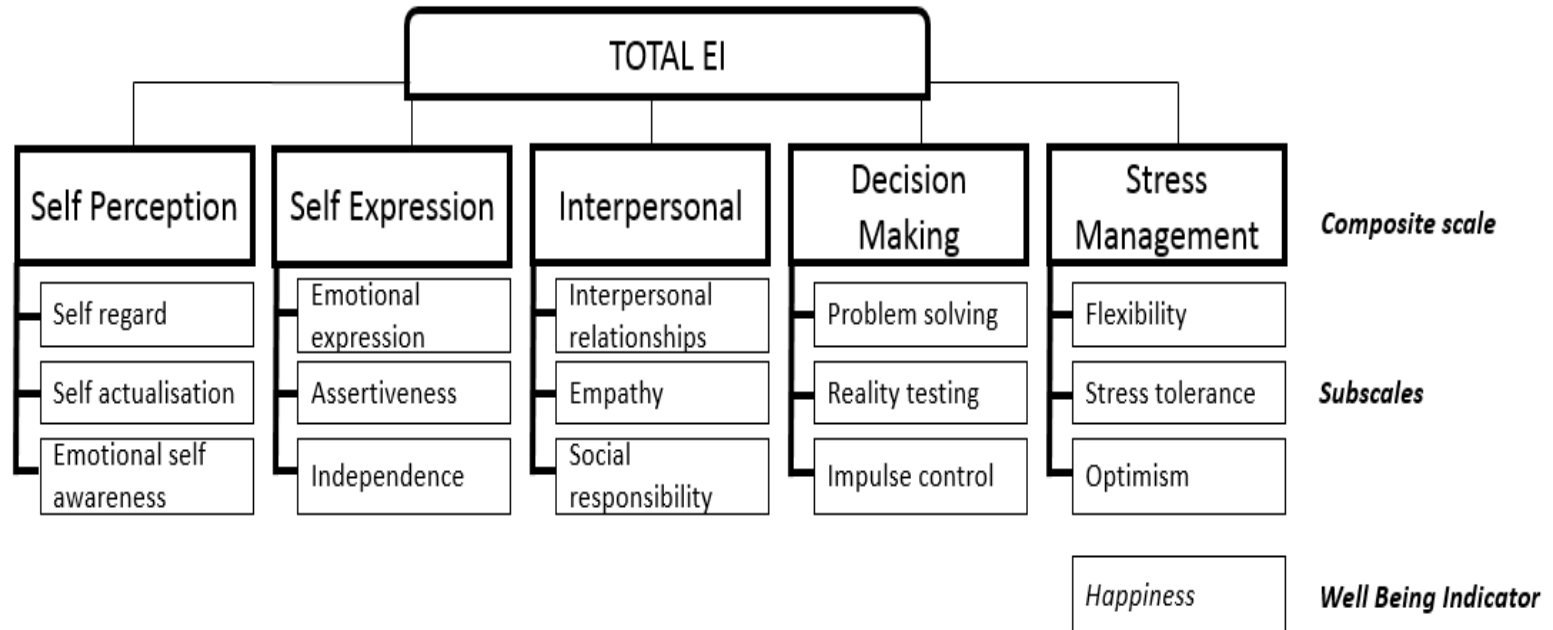


FIGURE 1: Model of Emotional-Social Intelligence showing the composite, subscales and well-being indicator (adapted from Multi-Health Systems, 2011)

interpersonal relationships, decision making when faced with emotional challenges, and their stress and coping skills; all essential abilities a therapist requires to work effectively with patients in emotionally vulnerable situations. Figure 1 presents the features of the Model of Emotion Social Intelligence where the five composite scales are divided into three subscales with a well-being indicator included termed 'happiness'.

To measure EI, Bar-on (1997) created the Emotional Quotient Inventory (EQ-i). The following information is from the *Emotional Quotient Inventory 2.0 - User's Handbook* (Multi-Health Systems, 2011, pp 246-254). In 2011, Multi-Health Systems revised Bar-on's model and measurement tool, renaming the tool the EQ-i^{2.0}. The EQ-i^{2.0} is a 133 item self-report tool, thus the instrument does not purport to measure the student's actual EI ability. Items are statements such as: "I'm aware of how others feel", "I can't think clearly when I'm under stress" and "It's hard for me to share my feelings with others" and the level of agreement with each is recorded using a five-point scale from 'always/almost always' through to 'never/rarely'. The instrument takes up to 40 minutes to complete. The EQ-i^{2.0} responses are summarized to 22 standard scores for each participant, henceforth termed 'EI scores': a Total EI score, five composite scores and 15 subscale scores and the well-being indicator score. According to the EQ-i^{2.0} scoring manual, the standard scores for each composite and subscale are obtained by combining responses to various relevant questions and scaled to a mean of 100 (SD = 15). The EQ-i scoring categories are as follows: markedly high is 130 and above; very high is 120-129; high is 110-119; normal is 90-109; low is 80-89; very low is 70-79; and markedly low is less than 70 (Bar-On, 2004). The highest score that is possible on each domain is 135 with the lowest score being. Internal consistency of the subscales ranged from 0.70 to 0.89 using Cronbach's alpha. Norms for the EQ-i^{2.0} based on the Australian population were devised by Multi-Health Systems (2012) using 1250 participants aged 18 to 60+ years of age with an equal number of males and females sampled within each age group.

Data Collection

Students were initially contacted via email by the researcher with reminder emails sent over a period of four weeks. A monetary incentive via a lottery was offered (Deutskens, Ruyter, Wetzels, & Oosterveld, 2004). The incentive was approved by university's Human Research and Ethics Committee and adhered to guidelines stipulated in the National Statement of Ethical Conduct in Human Research (2015). Data was collected online, with information on the study provided prior to accessing the survey. Participants provided their consent and demographic data and were then directed to the Multi-Health Systems website to complete the EQ-i^{2.0}. EI scores were linked to the demographic data using the student's university identification number.

Data Analysis

Simple descriptive statistics were used to summarize the age and gender of the participants, within their program of study (Table 1) as well as the EI scores (Table 2). The non-parametric Kruskal-Wallis test was used to compare EI scores between the different therapy programs (excluding business students). Where there was an overall difference between groups, pairwise comparisons were performed following the method outlined by Elliott and Hynan (2011). A Wilcoxon 2-sample test was used to compare the therapy students (as a single group) against the business students for each of the EI scales. Since only summary means and standard deviations were available for the Australian norms, comparison of therapy students against these norms could only be performed using t-tests (comparing the mean

scores). For those variables exhibiting skewness, the t-tests would be conservative, as they would be based on inflated standard deviations. Hence, if significant differences do appear, it is more likely that they would be real. A similar approach was taken when comparing business students against the Australian Norms. Statistical analyses were performed using the SAS version 9.2 software (SAS Institute Inc., 2008) and a p-value < 0.05 was taken to indicate a statistically significant association in all tests.

RESULTS

Approximately 650 therapy and 750 business students were initially contacted. A total of 276 therapy and 93 business students completed the online survey with the low participation rate possibly due to email being used to recruit students. The EQ-i^{2.0} calculates positive and negative impression and inconsistency index scores, with 23 students being excluded from the analysis because they exceeded the set parameters. Of the therapy students, 50% were occupational therapy students, 31% physiotherapy, and 19% speech pathology. The mean age of therapy and business students was the same (21.4 years) with 95% of all students aged 26 or younger. Business students were enrolled in commerce, economics, and human resource management programs. Participant details are summarized in Table 1. The EI scores for all student cohorts are presented in Table 2.

TABLE 1: Participant demographics

	All therapy students	Occupational Therapy	Physiotherapy	Speech Pathology	Business
Participant numbers	N = 276 • female = 235 • male = 41	N = 139 • female = 124 • male = 15	N = 86 • female = 62 • male = 24	N = 51 • female = 49 • male = 2	N = 93 • female = 71 • male = 22
Age	M = 21.4 years SD = 3.4	M = 21 years SD = 2.7	M = 21.9 years SD = 3.7	M = 21.4 years SD = 3.5	M = 21.4 years SD = 4.7

The Total EI and all composite mean scores fell within the normal range (scores between 90-109) for all groups of students. All subscale mean scores for physiotherapy and business students were within the normal range. Occupational therapy and speech pathology students scored in the low range (>90) for *independence*. Speech pathology students also had low scores for *problem-solving* and *stress tolerance*. No mean EI scores for any cohort or scale were in the high range (scores above 110).

The Shapiro-Wilk test showed that 18 of the 22 scales were significantly non-normally distributed so that comparisons between student groups was subsequently performed using non-parametric tests. Within the three therapy programs (excluding business students), there appeared to be a significant difference in *social responsibility* (Kruskal-Wallis test Chi-square = 6.86, degrees of freedom = 2; p = 0.03), where the OT students appeared to score higher than the speech pathology students. Comparisons across all other 21 scores for the therapy students showed no significant differences (all p-values > 0.2). Consequently, occupational therapy, speech, and physiotherapy students were combined into a single 'all therapy' group for the following analyses.

TABLE 2: Range and mean EI scores for all student cohorts

	Occupational Therapy			Physiotherapy			Speech Pathology			Business		
	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD
Total EI Score	68-126	99	12	66-133	99	14	68-119	97	12	65-127	96	14.3
SELF PERCEPTION	70-128	101	13	68-131	100	13	69-119	99	12	63-126	98	14.4
Self-regard	57-126	97	14	60-126	97	15	67-117	93	14	62-126	97	14.8
Self-actualization	70-129	104	14	67-126	102	13	72-121	102	12	48-129	97	15.5
Emotional self-awareness	60-133	103	13	70-133	101	13	81-126	105	12	64-133	103	15.1
SELF EXPRESSION	63-127	94	14	59-127	94	15	55-114	93	14	59-127	96	14.3
Emotional expression	56-134	102	15	61-131	100	17	69-123	102	14	59-131	101	14.8
Assertiveness	61-127	95	15	68-130	97	14	43-127	105	15	61-134	97	13.6
Independence	52-118	89	14	55-115	91	15	41-121	88	16	58-126	92	14.9
INTERPERSONAL	67-128	107	10	75-130	107	11	71-126	106	10	57-130	102	13.2
Interpersonal relationships	66-127	105	12	71-127	104	10	66-124	104	12	60-127	102	14.5
Empathy	72-128	107	11	78-128	107	11	85-128	109	10	70-128	102	13.3
Social responsibility	79-130	106	11	72-126	106	11	72-119	101	10	57-130	100	12.6
DECISION MAKING	62-135	97	14	55-127	96	16	73-123	95	12	54-131	92	15.2
Problem-solving	53-126	90	14	42-122	91	16	58-122	88	13	50-126	91	14.8
Reality-testing	72-131	99	13	68-128	98	12	61-121	98	13	54-128	97	15
Impulse control	66-128	105	14	57-128	102	16	66-128	103	14	54-128	94	15.8
STRESS MANAGEMENT	56-121	96	13	59-131	96	15	64-118	92	13	60-129	95	15.4
Flexibility	64-124	96	13	58-134	96	17	70-124	94	11	52-128	96	15.5
Stress tolerance	50-120	92	14	50-129	92	17	52-115	87	14	55-129	94	15.3
Optimism	64-102	102	13	70-126	102	13	62-122	99	13	64-126	99	14.3

TABLE 3: EI scores for all therapy students compared to Australian Population EQ-i^{2.0} norms and business students

	All therapy student EI scores		Australian EI Population Norms		Comparison with Australian EI norms				All therapy students compared to business students	
	Mean	SD	Mean	SD	All therapy students		Business students		Diff	p-value*
					Diff	p-value^	Diff	p-value^		
Total EI Score	98.6	12.5	99.4	14.5	-0.8	0.39	-3.2	0.04	2.3	0.15
SELF PERCEPTION	100.4	12.8	99.2	14.2	1.2	0.19	-0.9	0.56	2.1	0.21
Self-regard	96.0	14.1	99.6	14.2	-3.6	<0.001	-2.6	0.11	-1.0	0.55
Self-actualization	104.5	13.1	99.4	14.1	5.1	<0.001	-2.2	0.18	6.0	<0.001
Emotional self-awareness	102.9	12.8	98.8	15.2	4.1	<0.001	4.0	0.01	0.1	0.92
SELF EXPRESSION	94.2	14.3	98.8	14.6	-4.6	<0.001	-3.1	0.04	-1.5	0.47
Emotional expression	101.0	15.6	97.5	15.0	3.5	0.001	3.9	0.01	-0.4	0.92
Assertiveness	95.8	14.6	100.7	14.4	-4.9	<0.001	-3.5	0.02	-1.4	0.56
Independence	89.8	14.7	99.5	15.7	-9.7	<0.001	-7.8	<0.001	-1.9	0.37
INTERPERSONAL	106.8	10.4	100.1	14.7	6.7	<0.001	2.1	0.14	5.2	<0.001
Interpersonal relationships	104.6	11.5	97.9	14.6	6.7	<0.001	3.8	0.01	2.9	0.12
Empathy	107.2	11.0	100.7	15.2	6.5	<0.001	1.1	0.43	5.4	<0.001
Social responsibility	105.1	10.9	100.2	14.6	4.9	<0.001	0.2	0.87	4.7	0.001
DECISION MAKING	96.3	14.1	99.1	15.0	-2.8	0.007	-7.1	<0.001	4.3	0.02
Problem-solving	90.4	14.8	99.1	15.6	-8.7	<0.001	-8.8	<0.001	-0.9	0.56
Reality-testing	98.5	12.9	100.3	14.5	-1.8	0.064	-3.3	0.04	1.5	0.40
Impulse control	103.6	15.0	98.7	14.9	4.9	<0.001	-3.2	0.002	9.7	<0.001
STRESS MANAGEMENT	95.5	14.0	100.8	14.4	-5.3	<0.001	-5.4	0.001	0.1	0.89
Flexibility	95.7	14.0	101.4	14.6	-5.7	<0.001	-5.8	<0.001	0.1	0.96
Stress tolerance	91.5	15.1	100.6	14.4	-9.1	<0.001	-6.9	<0.001	-2.2	0.32
Optimism	101.3	13.1	100.1	14.1	1.2	0.15	-1.0	0.53	2.2	0.22

Diff = difference

^ p-value calculated from the t-test

* p-value calculated from the Wilcoxon 2-sample test

Mean EI scores for all therapy students and business students were compared (separately) against the Australian Population EQ-i^{2.0} norms (population norms) using t-tests (Table 3). Population norms were used, in favor of aged-matched norms, as the population norms are representative of the healthcare practitioners and patients with whom therapy and business students work alongside during clinical placements and after graduation. As the standard deviations for each of the EI scales are similar (approximately ranging 11 to 15), a moderate effect size of 0.5 would correspond to a difference in mean scores of approximately 5-points. With the large sample sizes in this study, it is not surprising that differences in the mean scores smaller than this appear to be statistically significant. In these cases, the significance of any differences may be minor.

For all therapy students, the mean score for independence was in the low range. *Independence* is defined as "... the ability to be self-directed and free from emotional dependency on others... independent people avoid clinging to others to satisfy their emotional needs" (Multi-Health Systems, 2011, p. 75). No EI scores for either student group were in the high range.

The EI scores for therapy students that were significantly lower with a moderate effect size (equating to a difference of 4.9 or more points) than the population norms were *assertiveness*, *independence*, *problem-solving*, *stress management*, *stress tolerance*, and *flexibility*. The EI scores that were significantly higher with a moderate effect size than the population norms were *self-actualization*, *interpersonal relationships*, *empathy*, and *impulse control*. Business students presented with EI scores significantly lower with a moderate effect size than the population norms in *independence*, *decision-making*, *problem-solving*, *stress management*, *flexibility* and *stress tolerance*. Business students reported no scores that were significantly higher with a moderate size effect than the population norms.

Comparisons using a Wilcoxon 2-sample test of the therapy students and business students showed significantly higher EI scores for therapy students, with a moderate effect, size in *self-actualization*, *interpersonal*, *empathy*, *social responsibility*, and *impulse control*.

An analysis of the therapy students range of scores (see Table 1) indicates that some students' self-reported EI scores in the markedly low range (>70). For example, a speech pathology student reported an *independence* score of 41 with a physiotherapy student reported a *problem-solving* score of 42. As a result, analysis of the percentage of students reporting low EI scores was conducted (Figure 2).

More than 40% of all therapy students reported low EI scores for *independence* (49%), *problem-solving* (47%) and *stress tolerance* (41%). These same three EI scores had the lowest percentage of therapy students scoring in the high range. The EI domains with the least number of therapy students below 90 were *interpersonal* (3%), *empathy* (6%), *social responsibility* (6%) and *interpersonal relationships* (9%). The EI scores with the highest percentage of therapy students in the high range were *interpersonal* (37%), *empathy* (41%) and *impulse control* (39%).

DISCUSSION

The third-year therapy students, before they commenced their full-time clinical placements, reported that most EI abilities were in the normal range. Of concern were the low scores reported by occupational and speech pathology students in *independence*, *problem-solving* and *stress-tolerance*, while a concerning percentage of therapy students reported some EI abilities in the markedly low range. Few previous studies have measured EI for therapy students

prior to full-time clinical placements. Larin and Wessel (2015) measured physiotherapy students' EI using the EQ-i before clinical placements, reporting a total EI score of 100.6, similar to our study's finding of 98.6 for all therapy students; with all composite scores within the normal range (no subscale scores are reported). A study by Dugan et al. (2014) is the only paper identified that analyzed low scores in healthcare professionals. Using the EQ-i with otolaryngology residents, they found low scores in *emotional self-awareness, self-actualization, interpersonal skills, flexibility and problem-solving* skills before they commenced an EI training course.

The business students were within the normal range for all EI skills. An array of studies have reported the EI scores of a variety of business students at various times through their university studies (Joyner & Mann, 2011; Rathore, 2015; Thadhani, 2016) with scores reported to be within the normal limits, however no previous research has compared Australia business students to the Australian EI norms. Educators and employers of business graduates may be concerned that business students were significantly lower than the population norms in *independence, decision-making, problem-solving, stress management, flexibility and stress tolerance*.

Reassuringly for clinical supervisors and university academics, our cohort of occupational therapy, physiotherapy, and speech pathology students reported scores that were significantly higher than the Australian EI population norms in *self-actualization, interpersonal relationships, empathy, and impulse control* – skills that are inherently important in the healthcare professions. Thus, in these EI domains, most therapy students perceive their abilities to emulate the patients and co-workers they will be working alongside during clinical placements. Leaderman's (2016) study compared the EI scores of occupational therapy and physiotherapy students to the age-matched norms, finding that both cohorts scored higher than the norms. However, our study was unique in that we compared therapy students to the general population because the general population norms more closely match the allied health practitioners, staff, and patients that students' work alongside during clinical placements. The higher *self-actualization* scores in our study may be related to therapy students enrolling in a university program that aligns with their personal values, confirmed they are in an appropriate profession. The higher *empathy and interpersonal relationship* scores reported in our study may be the result of students self-selecting into a healthcare program where communication, therapeutic relationships, and caring are at the core of the professions (Nierengarten, 2012; Stagnitti et al., 2010). Students also reported higher *impulse control* scores which are critical skills in clinical placements where thinking before one acts or speaks is critical to making optimal clinical reasoning decisions and being an effective therapist, and perhaps even more critical when working with patients in emotional distress (Morehouse, 2007). It may also be possible that these higher EI skills have been transformed as a result of the student completing the first two or three years of coursework and participation in previous short, part-time clinical placements.

For therapy students, the EI scores that were significantly lower than the Australian norms were *assertiveness, independence, problem-solving, stress management, stress tolerance, and flexibility*. Students with low *assertiveness* may present as passive or withdrawn, be unable to articulate their needs and have difficulty communicating instructions appropriately to patients and staff. During clinical placements, these students may present with problems

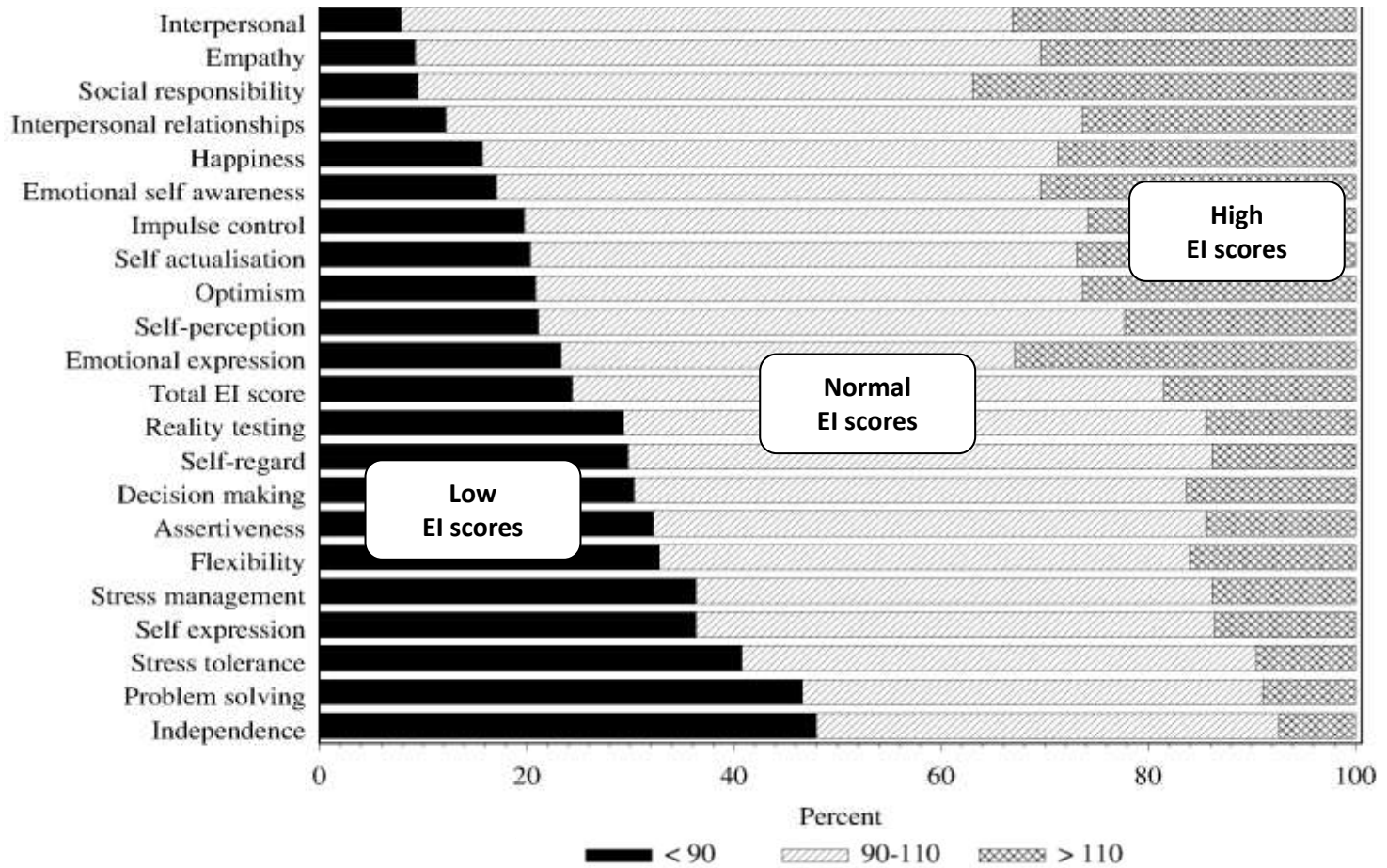


FIGURE 2: Percentage of all therapy students with EI scores considered low (<90), normal (90-110) and high (>110)

expressing themselves verbally, via facial expressions or with body language, and present with low self-confidence when confronted by patients in emotional distress. Students low in *problem-solving* and independence skills may present as anxious and overwhelmed when making decisions during emotionally charged situations, while those low in flexibility may demonstrate rigid thinking, struggle with change and the related emotions. Students low in *stress tolerance* may allow emotions to interfere with decision-making and show higher levels of tension, anxiety and reduced concentration (Multi-Health Systems, 2011). As a result, students who are low in these EI domains may demand more support from clinical supervisors, especially in emotionally charged scenarios such as patients in pain or distress, families dealing with grief and loss or negotiating during team conflicts. These students may present to the supervisor as lacking autonomy and confidence, behaviors that are important for competent practice, and it is feasible that these types of students may be evaluated as under-performing or failing the clinical placement.

The findings that some EI scores are lower than Australian norms may add to the understanding of why some therapy students fail clinical placements, although further research would be recommended to test these interpretations. Supporting these interpretations are Gutman, McCreedy, and Heisler (1998) who reported that occupational therapy students failed clinical placements because of dependence on external measures which could include supervisors, peers, and other staff. Bird and Aukas (1998) identified that failing occupational therapy students were socially withdrawn, had difficulty working with complex patients, projected their problems onto others; similar constructs that could be the result of low EI abilities.

Of concern, was that more than 40% of therapy students reported scores considered low or markedly low in *independence*, *problem-solving* and *stress tolerance* abilities. This finding is alarming considering that Stein and Book (2011) detailed the most significant EI abilities for nurses and social workers were independence and stress tolerance. Low *independence* scores may result in therapy students needing regular reassurance and support from others, seeking frequent direction on how to deal with emotional scenarios, and relying heavily on others when making decisions. Low *problem-solving* abilities may result in students being unable to interpret emotional scenarios and they may become overwhelmed when having to make decisions in these situations. Students with low *stress-tolerance* may allow emotions to interfere with coping and be less tolerant of the multiple stressful scenarios they face daily during clinical placements (Multi-Health Systems, 2011). As a result of the low to markedly low EI scores, these therapy students may rely heavily on their supervisors and other colleagues for support and guidance when faced with emotional situations. Clinical supervisors would be required to provide more support to these students compared to students with higher stress tolerance, problem-solving and independence capabilities. It is possible that the lower scores are because of the minimal exposure to patients in pain and distress early in the therapy program, personality issues such as neuroticism (Herpertz, Schütz, & Nezlak, 2016) or the student worrying about making career-ending clinical mistakes (Duffy, 2003) and thus, relying on the clinical supervisor for support. A study by Harper and Jones-Schenk (2012) profiled successful nurses (not students) and reported that 31% of the cohort had high total EI scores with 19% of the sample reporting low total EI. However, no analysis of these lower scoring participants was provided. In a study involving nursing students, Reemts (2015) reported 21% (n = 165) of participants had a total EI score less than 90, indicating that their EI needs 'development' or 'improvement'. In this same study, 16% reported EI scores that were considered in the 'skilled' or 'expert' range (scores

above 110). Another study using nursing students showed similar results (Marvos & Hale, 2015) whereby 34% (n = 35) of student participants scored below 90.

The findings of our study add weight to the argument purported by some authors that EI should be integrated more robustly into higher education, including therapy curricula (Kruml & Yockey, 2010; Stoller et al., 2013; Verma, Paterson, & Medves, 2006) and business curricula (Abraham, 2006; Bellizzi, 2008). Stoller et al. (2013, p. 1) stated that EI competencies should be taught “. . . iteratively throughout training, with different emphasis and increasing sophistication to meet evolving needs” Occupational therapy, physiotherapy, speech pathology, and business curricula could include modules where students are exposed to an array of emotional intelligence concepts, skills, and simulations. Various studies have shown that EI in university students can be improved by participating in workshops focused on the array of EI abilities and that enhanced EI skills are maintained for an extended period of time (Boyatzis & Saatioglu, 2008; Chang, 2006; Fletcher, Leadbetter, Curran, & O’Sullivan, 2009). Evidence shows that all subscale EI skills can be improved through training courses, mentoring, reflection and journaling, and coaching (Stein and Book 2011). In preparing students to commence full-time clinical placements, university academics could include EI as a core topic. Students could complete an EI questionnaire to gain insights into their EI strengths and weaknesses. For therapy students about to commence full-time placements, preparation workshops could include modules about the emotional milieu that surrounds patients and healthcare teams during placements, a description of EI, and strategies on how to deal with the emotional scenarios during placement that may assist students in making decisions when under emotional duress. Billett, Cain, and Le (2016) identified that students prefer to debrief about clinical placements after they have completed their practicums in sessions guided by an expert in the field. As such, debriefing sessions after clinical placements could also include modules where students reflect on their EI abilities, discuss emotion-charged scenarios they had dealt with and brainstorm various methods of coping in the scenario if it occurred again.

Limitations and Future Research

The EQ-i^{2.0} is a self-report tool and as such does not directly measure participant’s EI abilities. This study only utilized undergraduate students, however, with postgraduate therapy programs being the norm in North America, and more therapy programs in Australia introducing postgraduate entry, research into the baseline EI scores of postgraduate therapy students would be beneficial. Although the response rate for therapy students was good, the response rate for business students was 12% possibly as a result of potential participants not understanding the purpose of the study as the participate information referred to clinical placements. Only 15% of our sample was male, whereas the Australian EI norms included 50% percent males. Future research could investigate how students with low EI scores perform during clinical placements and any additional support these students require from supervisors. Research could also track changes in students with low and markedly low EI as they participate in their final, extended clinical placements.

CONCLUSION

Positively, our study found that many therapy students are commencing full-time, extended clinical placements with many EI abilities at levels where they should be able to cope with the array of emotional challenges from patients and healthcare teams. Similarly, business students EI abilities are within the normal range in the second year of their studies.

However, the prevalence of therapy students about to commence full-time clinical placements who report low and markedly low EI skills should be of concern to university educators and clinical supervisors. A reason for lower EI scores may be that the majority of students in Australian university therapy programs are in their early twenties and, thus, have some EI competencies that are far from fully matured. Hence the major recommendation of our study for therapy courses is to scaffold EI concepts through the formative years of the curriculum, as well as when preparing them for full-time extended placements. The result may be that students are more prepared for the emotional challenges that awaits them during their clinical placements.

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