

**Faculty of Business and Law
School of Management**

**The Influence of Clinical Placements on the Emotional Intelligence
of Therapy Students**

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**This thesis is presented for the Degree of
Doctor of Philosophy
of
Curtin University**

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Author's Declaration

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number HR68/2012.

A handwritten signature in black ink, appearing to read 'Nigel Gribble', written in a cursive style.

Nigel Gribble 29 January 2019

Abstract

Healthcare professionals, such as occupational therapists, physiotherapists, and speech pathologists, work closely with patients whose emotions are altered, heightened, or diminished. Healthcare professionals must be able to interpret the array of emotions and react appropriately to these emotional states. To succeed, the healthcare professional must draw upon an array of skills, including their emotional intelligence. Emotional intelligence (EI) is, "... 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).

The overall aim of this study was to investigate if, and how, the emotional intelligence of therapy students changed over the final stage of their university program - the time when they complete their final series of full-time, extended clinical placements. The study used a longitudinal, sequential explanatory, mixed methods design that consisted of three distinct phases. The study included two phases of data collection, quantitative followed by qualitative, and a third phase which integrated the two sets of data. Participants were undergraduate occupational therapy, physiotherapy, and speech pathology students (collectively described as 'therapy students') who need to use EI skills in all facets of their clinical placements. Business students were included as a control group because they undertake no clinical or workplace placements as part of their university program. At the commencement of data collection, the therapy students were in their third year of a four-year program, and business students were in the second year of a three-year program.

Phase 1 of the data collection used online questionnaires, at three time-points over the final 16 months of the therapy students' university program. At each time point data was collected about the students' EI scores, clinical placements, and demographic information including details of their clinical placements. Phase 1 coincided with the time when the therapy students undertook the majority of their full-time clinical placements. The Emotional Quotient Inventory (EQ-i^{2.0}) was used to measure the EI scores of students. Phase 1 included therapy (baseline: n=276; final: n=142) and

business (baseline: n=93; final: n=24) students. Phase 2 used semi-structured interviews with therapy students (n=24) to determine the components of clinical placements that therapy students perceived influenced the changes in EI scores during Phase 1. Phase 3 used the qualitative findings from Phase 2 to validate and explain the trends in the quantitative findings of changes in EI derived from the questionnaire in Phase 1.

The results of the study support our hypothesis that the therapy students' *Total Emotional Intelligence* score would increase significantly over the period that coincided with full-time, extended clinical placements. By the end of their university program, the therapy students also showed a significant increase in *self-perception, self-expression, decision-making, stress management, self-regard, self-actualisation, independence, problem-solving, reality testing, and flexibility*, with no significant decrease in any EI skills. The hypothesis that business students, who do no placements, would show no changes in EI scores, was supported. While there may have been a maturational effect, given the research outcomes it is reasonable to infer that clinical placements had a positive influence on some EI skills of therapy students. The content analysis of the interview data suggests that supportive and emotionally in-tune supervisors, combined with students observing EI skills being role modelled from experienced practitioners, assisted the therapy students to improve some EI skills. Another positive influence on students' EI was when they received feedback from their supervisor on specific EI skills. Students also reported that their EI skills tended to improve when supervisors encouraged them to reflect on their use of EI skills. A noteworthy finding was a significant decline in the mean assertiveness score for all therapy students after their initial set of clinical placements. The content analysis of the interview data revealed that many students reported receiving a reality check on the crudity of some of their EI skills, especially their ability to be assertive with experience healthcare professionals.

Our findings and recommendations contribute new knowledge to clinical supervisors, university educators, and employers of new therapy graduates. The study contributes to the understanding of the baseline and changing EI skills of therapy students. Our study adds considerable depth to understanding the strengths and shortcomings of

therapy students' EI skills as they commence their full-time, extended placements. The findings that *Total EI*, as well as most EI skills improved while students participated in clinical settings, should be reassuring to clinical educators and university educators, and validate the critical role that clinical placements have in the transition of the student therapists to practising therapist.

The recommendations present many strategies that clinical supervisors, university educators, and employers of new therapy graduates could implement that should assist therapy students and graduates' EI skills to flourish. Clinical supervisors should understand that the quality of their interactions with the student can have a positive or negative influence on the development of the students' EI skills. Clinical supervisors should role model an array of EI skills to students and endeavour to be emotionally in-tune and engaged with students. Clinical supervisors should encourage students to reflect on their EI skills and give feedback to students on their EI skills. University educators are encouraged to embed modules on EI framework and skills throughout the curriculum. Our study indicates that these modules could commence with a focus on *assertiveness* and *stress management* where students were below Australian population norms before commencing full-time clinical placements. Employers of new graduates are encouraged to provide programs that continue to assist in developing EI skills.

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To my Mum and Dad: Mum – you inspired me to believe in a life of learning. When I was in Grade 1 at primary school, you took the courageous decision to commence your undergraduate degree in psychology at the University of Western Australia. In the evening, when you were studying in your bedroom, I would bring you a cup of tea. I would marvel at your pages of notes. I remember how important it was that all the full-stops were in the correct spots in the references. I have been so lucky to have you, and my wonderful Dad, in my life.

Rick: we started every supervision session with a review of our latest holidays and the next planned holiday. My favourite supervision session was when you held up your iPad to show me Vancouver Bay in all its beauty and wonderment. Thanks for the ideas, your incredibly fast turnaround times, and your honesty. Enjoy your next trip.

Richard: we sometimes discussed statistics, but mostly we chatted about the world, the past, our adventures, family, and beer.

Trish, Fynn, and Jedd: thanks for the holidays especially skiing in Zermatt, the views of Lake Como, breath-taking Little Beach, everything about Rotto, and our fabulous tent. Love you all every day, now, and forever.

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Publications forming part of the thesis

Published journal articles

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Gribble, N., Ladyshevsky, R. K., & Parsons, R. (2018). Changes in the emotional intelligence of occupational therapy students during practice education: A longitudinal study. *British Journal of Occupational Therapy*, 81(7), 413–422. <https://doi.org/10.1177/0308022618763501>

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Conference presentations where findings have been disseminated

- Gribble, N., Ladyshevsky, R. K., & Parsons, R. (2017). Strategies for supervisors that may enhance therapy student's emotional intelligence during clinical placements. In *Seventh International Clinical Skills Conference, May 2017*. Prato, Italy.
- Gribble, N., Ladyshevsky, R. K., & Parsons, R. (2017). The critical components of fieldwork placements that impact the emotional intelligence of therapy students: A mixed methods study. In *Occupational Therapy Australia 27th National Conference and Exhibition*. Perth, Australia, July 2017.
- Gribble, N., Ladyshevsky, R. K., & Parsons, R. (2016). Emotional intelligence: A critical skill for therapy students undertaking clinical placements. In *11th National Allied Health Conference, November 2016*. Melbourne, Australia. Retrieved from <http://nahc.com.au/index.html>
- Gribble, N., Ladyshevsky, R. K., Parsons, R., & Scott-Ladd, B. (2013). The influence of work-integrated learning on the emotional intelligence of therapy students. In *4th International Congress on Emotional Intelligence*. New York, USA, September 2013. Retrieved from <http://www.icei2013.org/>

Awards

- Recipient of the Best Oral Paper at the *Seventh International Clinical Skills Conference*. Prato, Italy in May 2017 titled 'Strategies for supervisors that may enhance therapy student's emotional intelligence during clinical placements'.

Statement of Contributors

PhD Scholar

Nigel Gribble managed the research project from beginning to completion. I was instrumental in forming the design of the methodology, lead the recruitment of participants, data collection, and data analysis for all phases of the study. I was responsible for writing all the published journal articles and the thesis, with editorial input from the supervision team.

Supervisors:

Professor Richard K. Ladyshevsky was the lead PhD supervisor who provided close and ongoing guidance and support from the beginning to end of the study. Professor Ladyshevsky assisted with the development of the study design, provided guidance during recruitment and data collection, reviewed drafts and suggested improvements for all five manuscripts, as well as this thesis.

Dr Richard Parsons contributed as PhD co-supervisor and provided advice on statistical analysis for all five manuscripts. Dr Parsons provided support and guidance through recruitment and data collection, reviewed drafts, and suggested improvements for all five manuscripts, as well as this thesis. Dr Parsons came onto the supervision team after Professor Brenda Scott-Ladd retired from Curtin University

Associate Professor Brenda Scott-Ladd contributed as PhD co-supervisor with the development of the study design until she retired from Curtin University before data collection commenced.

Research Assistants

Dr Kiah Lovell was utilised during the analysis of the interview data. Dr Lovell was involved to ensure the credibility and confirmability of the analysis of the interview data.

Tim Parkin and **Greg Lynne** completed the interview transcriptions.

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Nil funding was received to undertake the study.

Preface

This research study emerged from numerous catalysts...primarily from my time as the Director of Fieldwork in the School of Occupational Therapy and Social Work at Curtin University. In 2003, one of my academic colleagues, Trevor Goddard, lead a small group of six occupational therapy students to Shanghai, China where the students completed an international clinical placement where they worked in a centre for children with autism and other disabilities. In 2004, a similar international placement commenced with occupational therapy students working in West Bengal, India. Both placements were a success with the children benefiting from the additional therapy and one-on-one time, while the Chinese and Indian staff at the sites gained new ideas by collaborating with the students. The Curtin students were seemingly the biggest winners. The majority of students reported that the international experience was the best placement of their university program. The significant challenges of an international placement, where the students had to overcome language and cultural barriers as well as develop a collaborative working relationship with Chinese or Indian staff so that the children benefitted from therapy, outweighed the learning experiences the students experienced in Australian healthcare settings.

Trevor and I worked together over the next five years to expand the program – now called Go Global. International clinical placements were set up for Curtin students in Ukraine, and South Africa. Over this time, physiotherapy, pharmacy, nursing, and speech pathology students joined with the occupational therapy students to make the placements interprofessional. By 2009, 110 students from Curtin's Faculty of Health Sciences were participating in Go Global annually. Each year, I would catch up with the cohorts as they arrived back in Australia. I always felt that something had changed in the students, but I could never pinpoint what the transformation was. I wanted to understand the transformation. I wanted to know what might have changed in therapy students during these international placements ... this was the catalyst for this study.

As I ploughed through the literature, I initially thought that maybe the students' employability increased. I ploughed through the employability literature when I stumbled upon the CareerEDGE Model of Employability by Dacre Pool and Sewell (2007). And there it was...these authors had proposed that EMOTIONAL INTELLIGENCE was a crucial part of employability and emotional intelligence had a significant influence on self-confidence, self-efficacy, and self-esteem. Thus, my PhD was born – I would investigate the changes in emotional intelligence of therapy students as they completed the variety of clinical placements that are required as part of their university program. Rick Ladyshewsky, my PhD supervisor, had been one of my lecturers in my MBA program and I knew he was interested in emotional intelligence, and he had a background in clinical placements when working in the physiotherapy school at Curtin. One email to Rick and our journey began.

Structure of this Thesis

The thesis consists of six chapters, and a series of appendices, which details all aspects of this research study.

Chapter 1, titled *Introduction* presents an overview of the key concepts that underpin the study, gaps in the literature that inspired the study, the research hypotheses and questions that guided the study, and the contribution of the study to existing knowledge.

Chapter Two, titled *Literature Review*, provides an overview of the core constructs and previous research that are central to this research study. This chapter also adds depth to some of the concepts, theory, and research that appear in the literature review sections of the published journal articles.

Chapter Three, titled *Methods*, describes a full description of the longitudinal, sequential explanatory, mixed methods design used for this study. This full description is included in this thesis because a singular journal article that encapsulates the entirety of the mixed methods study and findings was not submitted for publication. As such, this chapter describes the comprehensive methodologies that supported the project.

Chapter Four, titled *Journal Articles*, contains the five manuscripts that have been published in peer-reviewed journals.

Chapter Five, titled *Additional Analysis and Discussion*, has two sections. The first section presents the final phase of the mixed methods study where the findings from the qualitative phase are used to validate the findings from the quantitative phase. A journal article that brings the quantitative and qualitative data together has not been written as yet. The second section presents some additional analysis of data that was not included in the published journal articles.

Chapter Six, titled *Discussion and Recommendations*, describes the conclusions to the research hypotheses and questions. The chapter discusses the findings and provides comprehensive recommendations that are applicable to clinical supervisors, university educators, and employers. This chapter also presents ideas for future research. Many of the ideas in this chapter are also covered in the published works, but this chapter draws the collective ideas and recommendations from the study into a cohesive section.

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List of Abbreviations

- EI** Emotional intelligence
- EQ-I** Emotional Quotient Inventory
- EQ-i^{2.0}** Emotional Quotient Inventory Version 2.0
- M** Mean
- OT** Occupational therapy
- PT** Physiotherapy
- SD** Standard deviation
- SP** Speech pathology
- WIL** Work-integrated learning

Glossary

Clinical supervisor or fieldwork supervisor or supervisor: “Healthcare professionals in the field who supervise students in their placement settings (in situ)” (Stagnitti, Schoo, & Welch, 2010, p. 44). The supervisor oversees the student’s clinical placement, provides role modelling and guidance, and provides regular feedback to the student about their clinical performance. The supervisor also assesses the student’s performance.

Emotional Intelligence: the working definition used throughout this thesis and journal articles defines emotional intelligence 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). This definition was selected as it emerged from the work by Bar-on (1996) and Multi-Health Systems (2011) whose emotional intelligence model is used through the study. As a result of this definition, emotional intelligence is described as a ‘skill’ throughout the thesis.

Full-time, extended clinical placement: was defined for our study as a clinical placement of four days or more per week, and five weeks or more in length

Healthcare professional: "...a person who by education, training, certification, or licensure is qualified to and is engaged in providing healthcare" (Mosby’s Medical Dictionary, 2009a, para. 1).

Interprofessional practice is a "...type of work which involves different health and/or social professions who share a team identity and work closely together in an integrated and interdependent manner to solve problems and deliver services" (Informa UK Limited, 2018).

Therapy students: for this study, undergraduate students enrolled in a university program studying occupational therapy, physiotherapy, or speech pathology disciplines are at times referred to as ‘therapy students’.

Work-integrated learning (WIL): is defined by Patrick et al. (2008, p. iv) as “... an umbrella term for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum”. Adding depth to Patrick et al.’s definition, Billet (2011, p. 2) states WIL is “...the process whereby students come to learn through experiences in educational and practice settings and reconcile and integrate the contributions of those experiences to develop understandings, procedures and dispositions, including the criticality and reflexivity, required for effective professional practise”. The Journal of Work-Integrated Learning (2019, p.1) has adopted the following definition of work-integrated learning, “...an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practise of work as an intentional component of the curriculum”.

Consistency of Terminology

Throughout this thesis all attempts have been made to use consistent terminology for the following:

- *clinical placement* or *placement* was selected in preference to terms such as ‘work-integrated learning’, ‘fieldwork’, ‘fieldwork placement’, ‘practice education’, and other similar terms;
- *clinical supervisor* was selected in preference to ‘fieldwork supervisor’, ‘preceptor’, ‘practice educator’, and other similar terms;
- *patient* was selected in preference to ‘healthcare consumer’ and other similar terms;
- *university program* was selected in preference to ‘university course’ and other similar terms.

In the published journal articles, alternate terms may have been used because these terms are most commonly used in that specific journal. For example, the term ‘fieldwork supervisor’ is commonly used for occupational therapy and speech pathology placements, whereas, ‘clinical supervisor’ is used when discussing clinical placements in the generic context and is commonly used for physiotherapy placements.

Chapter 1 INTRODUCTION

This chapter will provide an overview of the fundamental concepts that underpin the study, current gaps in the literature, the significance of the study, and detail the research questions that guided the study.

1.1 Key concepts underpinning the study

Throughout history, discussion and debate have focussed on the role of human emotions in the workplace and their impact on work performance. Research has reported that the emotional dimension of humans and work are inseparable (Howe, 2008; Zeidner, Matthews, & Roberts, 2010). The research into emotions in the workplace has shifted rapidly from a time when emotion-workplace research was scant, to the present, where there is "...a veritable explosion of interest in the study of affect and emotions in organizations" (Ashkanasy & Humphrey, 2011, p.214). Healthcare professionals, as well as students undertaking clinical placements, work closely with patients whose emotions are aroused, altered, or diminished. Illness, pain, distress, physical frailty, mental health changes, stress, grief, and loss inevitably lead to patients' expressing (or not expressing) an array of emotions that the healthcare professionals must take into account. Healthcare professionals and students must react appropriately to these emotional states and take these emotions into account when responding to patients and when making clinical decisions (Howe, 2008). To succeed, healthcare professionals and students during their clinical placements must draw upon an array of intrapersonal and interpersonal skills, as well as their *emotional intelligence* (EI) skills.

Emotional intelligence is "... 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). Emotional intelligence is now well recognised as an integral part of human cognitive capability with EI now included as a second-stratum factor of intelligence, similar in importance to fluid intelligence, cognitive processing speed, and

visual processing (MacCann, Joseph, Newman, & Roberts, 2014). Bar-on (2006, p. 4) states that:

“...ultimately, being emotionally and socially intelligent means to effectively manage personal, social and environmental change by realistically and flexibly dealing with the immediate situation, solving problems and making decisions. To do this, we need to manage emotions so that they work for us and not against us and we need to be sufficiently optimistic, positive and self-motivated”.

Emotional intelligence is the ability of an individual to understand their own, as well as others emotions, and ultimately to make decisions using this emotional information during everyday life and work (Howe, 2008). As Howe (2008, p.10) states, “...the professions that work with people, particularly people in need and distress, should be populated by individuals in goodly possession of emotional intelligence”. Howe (2008, p. 182) goes on to state that “...emotionally intelligent workers help contain service users and their feelings in a relationship that feels safe, safe enough for them to explore. Workers who do not have these skills or agencies that come across as anxious, defensive, or hostile, alienate service users”. Fostering and maintaining quality therapeutic relationships and being an active team member is strengthened when the healthcare professional can demonstrate the skilled use of their own EI, in combination with an array of other clinical, professional, intrapersonal, and interpersonal skills.

The reality is that healthcare professionals use an array of EI skills on a daily basis. Emotional intelligence skills are used during interactions with patients. These interactions include when the practitioner builds rapport, conducts assessments, selects the therapeutic medium, provides education, and when using counselling skills such as empathy, active listening, and motivational interviewing. When developing rapport and trust, EI skills allow the healthcare practitioner to demonstrate empathy, read emotional cues, be self-aware, read the emotional milieu, and demonstrate emotional self-control (Andonian, 2013; Taylor, Lee, Kielhofner, & Ketkar, 2009). Emotional intelligence skills are

used to make clinical decisions. For example, knowing the optimal time that will suit the patient to conduct an assessment, selecting an appropriate therapeutic medium, how to present information, and when using counselling skills such as empathy, active listening, and motivational interviewing (Howe, 2008; Miller & Rollnick, 2013). Emotional intelligence skills are required during self-reflection to interpret and understand the emotions that may have influenced decision-making. Emotional intelligence skills are also used when working in teams to manage conflict, work efficiently in interprofessional teams, and when making decisions about patient care (Clarke, 2010a). Similarly, healthcare students are required to use their EI skills during their clinical placements which are a required component of their university program.

Studies have shown that higher EI skills predict better physical health, psychological benefits, better social and intimate relationships, and importantly to this study, that EI has an essential role in success in the workplace (Kotsou, Mikolajczak, Heeren, Grégoire, & Leys, 2018; Zeidner et al., 2010). Higher EI skills have been reported to have many benefits for healthcare professionals and students studying healthcare course in universities. Higher EI is positively correlated with critical thinking skills, emotional competency, and reduced stress (McCloughen & Foster, 2017; Michelangelo, 2015). Higher EI has also been shown to positively influence caring behaviours (Morales, 2014), patient satisfaction (Azimi, AsgharNejad Farid, Kharazi Fard, & Khoei, 2010), and teamwork skills (Brown, Etherington, & Williams, 2017). Teams with higher EI have been shown to have a positive impact on team cohesion and their ability to deal with conflicts (Lee & Wong, 2017). For healthcare students, higher EI skills are linked to better performance in clinical placements (Andonian, 2013). On the other hand, students with lower EI skills may present on clinical placements as struggling or as under-confident. For example, students with lower EI may need reassurance and guidance from other healthcare professionals during emotional situations, or they may have difficulty drawing information from emotions in order to solve problems (Multi-Health Systems, 2011).

Employability is high on the agenda of recruiters and employers. Universities have embraced employability as an essential learning outcome for all graduates (Hager & Holland, 2006). Dacre Pool and Sewell (2007, p. 280) define employability as "...having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful". Employability encompasses a myriad of attributes such as personality, attitudes, motivation as well as the individual's vocational ability (Van Der Heijde & Van Der Heijden, 2006). Employers view a graduate's discipline degree as a necessity, but not the only criteria for recruitment (Yorke, 2006). As Gordon-Handler (2009, p. 27) states in her dissertation on the relationship between EI and clinical performance of occupational therapy students, "...the accomplishment of credentialing procedures alone does not guarantee that a person will become an excellent doctor, therapist, nurse, accountant, or CEO...a person who possesses both good intrapersonal and interpersonal competencies is more likely to...show outstanding achievement...". The CareerEDGE Key to Employability Model (Dacre Pool, Qualter, & Sewell, 2014) includes EI as a determinant of employability. Accordingly, EI can be considered an integral part of a university student becoming work-ready, where higher EI will enhance a graduate's employability (Artess, Hooley, & Mellors-Bourne, 2016; Sewell & Dacre Pool, 2010). Thus, university education has the remit to ensure graduates have an array of skills to succeed in the workplace, including EI skills.

University programs for occupational therapy, physiotherapy, and speech pathology students (collectively termed 'therapy students') prepare them to practise autonomously and safely in healthcare settings upon graduation. Clinical placements for therapy students are where theory, assessment, and intervention skills that are taught in the university classroom can be practised in authentic settings with real patients under the guidance of experienced practitioners. Clinical placements have been described as the "...most influential learning experience in a student's journey to becoming a competent health professional" (Siggins Miller Consultants, 2012, p.3). Clinical placements are obligatory in occupational therapy, physiotherapy, and speech pathology programs in Australia (Australian Physiotherapy Council, 2011; Speech Pathology Australia, 2010;

World Federation of Occupational Therapists, 2016). For therapy students, placements take place in a variety of healthcare settings including hospitals, private practices, and not for profit community organisations (McAllister, Paterson, Higgs, & Bithell, 2010; Stagnitti et al., 2010).

A primary goal of clinical placements is to prepare the therapy students for independent practise (Hauer et al., 2015), thus placements are an opportunity for students to develop self-efficacy in an array of clinical skills, as well as interprofessional practice, communication, self-management, intrapersonal, and interpersonal skills, as well as EI skills. Across all areas of practise, therapy students are required to manage emotions, and thus they need to use their EI skills on a daily basis (Howe, 2008). For example, during paediatric placements students work with children who are upset and families who are frustrated; during an orthopaedic placement they work with patients who are in pain and distress; and during mental health placements, patients might be confused or emotionally labile (Stagnitti et al., 2010).

Emotional intelligence has been shown to increase through a variety of means such as participating in training courses, coaching, workplace learning, and via natural emotional maturation (Clarke, 2006; Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2018; Kotsou et al., 2018). Emotional intelligence scores tend to increase through adulthood but level out in the late forties (Bar-On, 1997), while Multi-Health Systems (2011) report that EI continued to increase well into peoples' sixties. This tendency for EI to increase as one grows older inspired our research to investigate the EI skills of therapy students before they commence full-time clinical placements and compare them to the EI Population norms from Australia. Of importance to our study, EI has been shown to increase via workplace learning (Clarke, 2006).

Workplace learning has been defined as "...the type of learning that occurs while performing the job itself, such as mentoring, coaching, team learning, increasing job challenge and incidental learning that arises through doing the job" (Clarke, 2006, p. 448).

Workplace learning occurs when a person is immersed in an authentic workplace. For therapy students, workplace learning occurs when they undertake their clinical placements that are scaffolded through all years of their university program. Billett (2001) argues that the richness of learning that often occurs in the workplace is because workers interact with each other while undertaking various activities, while the degree of learner engagement is critical to the depth of workplace learning. Some authors argue that workplace learning is better at developing EI skills than training or workshops (Brewer & Cadman, 2000; Freshwater & Stickley, 2004).

As a result of the finding that EI can be enhanced via training courses, some authors have advocated for university programs to embed EI throughout the curriculum so students enter the workforce equipped with improved EI skills (Foster, McCloughen, Delgado, Kefalas, & Harkness, 2014; Nelson, Fierke, Sucher, & Janke, 2015). Authors have highlighted that most university healthcare programs include minimal EI content in their curricula (Foster et al., 2014; Nelson et al., 2015). Thus, the most fertile ground where therapy students observe, practise, and learn EI skills, beyond normal maturation, might be during clinical placements. The finding that their EI skills are still maturing throughout their university program could mean that their clinical placements have a substantial impact on their EI skills. This realisation inspired our research to investigate if, and how, EI skills of therapy students change during full-time placements in comparison to students who do no placements.

1.2 Statement of the problem

The emotional dimension of humans and work are inseparable. There is sound evidence that EI influences many aspects of a healthcare professional's clinical practise and effectiveness, as well as potentially affecting patient outcomes. There is evidence that EI skills improve as each person matures emotionally, as well as through training and coaching programs. Importantly, EI can also be improved through workplace learning. One form of workplace learning are the clinical placements that the majority of healthcare

students undertake as part of their university program. The focus of this study is university students' enrolled in Australian occupational therapy, physiotherapy, and speech pathology programs, all of whom need to use their EI skills during all facets of their clinical placements.

Clinical placements are a required component of the university program for therapy students. At the time of our study, there was a paucity of research on the baseline EI skills of undergraduate occupational therapy, physiotherapy, and speech pathology students before they commence extended, full-time clinical placements. There were a few previous longitudinal studies on EI in therapy students, but none used an Australian cohort of students. Few studies were found that tracked the changes in EI skills of therapy students over the final stages of their university program when the students are immersed in full-time placements. No EI studies were identified that included a control group of students who do no clinical placements. A recent systematic review of interventions that target EI recommended that future studies of EI needed to use control groups (Kotsou et al., 2018). No studies reported the range of EI scores (i.e., the percentage of therapy students in the low and high realms of EI skills) for occupational therapy, physiotherapy, or speech pathology students or new graduates. No studies were found that used interviews with university students to investigate any aspect of their EI skills. One interview-based study explored the role that EI plays in the daily practises of healthcare professionals (Akerjordet & Severinsson, 2004).

As such, research that investigates if, and how, EI changes over the final phase of therapy students' university program, as well as an exploration of the students' experiences during clinical placements that affect any changes in EI, was essential.

1.3 Research aims and questions

Mixed methods studies should have quantitative, qualitative, and mixed methods aims (Plano Clark et al., 2015). As such, the following hypotheses and research questions were defined:

Research hypotheses to be investigated during the quantitative phase were:

1. The baseline emotional intelligence scores of therapy students, before they commence full-time extended clinical placements in their third year, will be significantly lower than the Australian population norms.
2. The emotional Intelligence scores of therapy students will significantly improve compared to business students, after their first one or two clinical placements over the final 16-month period of the students' university program.
3. The emotional Intelligence scores of therapy students will significantly improve compared to business students, over the final 16-month period of the students' university program.

Research questions to be investigated during the qualitative phase were:

1. Do therapy students, with significant changes in EI scores, perceive that changes in their emotional intelligence scores were due to their clinical placements or personal factors?
2. What aspects of the clinical placement do therapy students perceive as influencing changes in their emotional intelligence scores?

The final phase of a mixed methods design requires that the two data sets – from the quantitative and qualitative phases – are brought together and integrated. As such, **the research question** to be investigated during this integrative phase was:

1. How do the results from the interviews with therapy students validate and explain the trends and changes in their EI scores over the final 16-month period of the students' university program?

1.4 Overview of the research design

In order to respond to these hypotheses and questions, our study used a longitudinal, sequential explanatory, mixed methods design. The sequential explanatory design follows procedures proposed by Creswell and Plano Clark (2011). Our study included two distinct phases of data collection, quantitative followed by qualitative, and a third phase of integration and exploration of the two sets of data. Firstly, our study tracked EI scores of occupational therapy, physiotherapy, and speech pathology students before, during and after they completed their final clinical placements. The EI scores of business students were collected at the same time points. Business students were selected as the control group because they do no clinical or work placements. The next phase of the study involved interviews with therapy students. The interviews aimed to understand whether therapy students perceived that clinical placements influenced the reported changes in EI scores and also delved into how the experiences during clinical placements influenced the changes in emotional intelligence. The responses to these research hypotheses and questions are reported in the journal articles (Chapter 4) and as part of Chapters 5 and 6 of this thesis.

Figure 1.1 provides a comprehensive summary of each of the three phases of our study. The figure includes the timing of each phase, the procedures used to collect data in each phase, the analysis tools, outcomes of the analysis, and the journal articles and chapters that were published from each set of analyses.

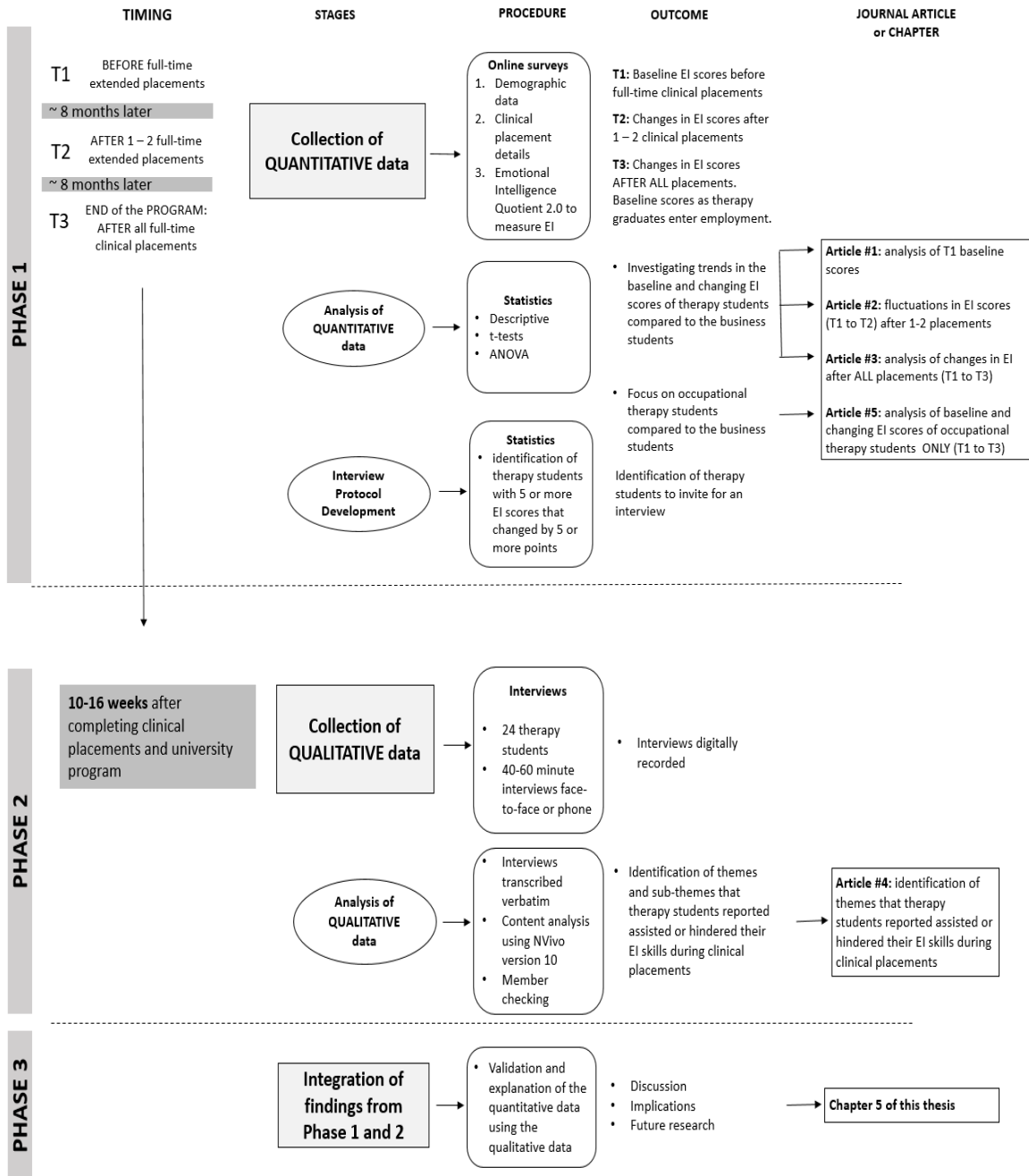


Figure 1.1: Detailed summary of the longitudinal, sequential explanatory, mixed methods design.

1.5 Contribution of the study to existing knowledge

The findings and recommendations from our study will contribute new knowledge about the EI of therapy students to three main stakeholders; university educators, clinical supervisors, and employers of new therapy graduates.

Our study will offer a detailed understanding of the strengths and shortcomings of therapy students' EI skills before they commence their full-time, extended placements in the third year of their university program. As the study is longitudinal in nature, the study will detail the trends of how EI skills change as therapy students undertake their final series of clinical placements over the final phase of their university program. Our study is the first to use interviews to ask students if, and how, clinical placements influence their EI skills. We were unable to locate any previous studies that used a mixed methods design to investigate the impact of their clinical placements on students' EI skills. Our study is the first to use interviews to ask therapy students if, and how, clinical placements influence their EI skills.

The new knowledge and recommendations generated from the study will assist university educators to construct therapy curricula and the learning activities that therapy students and clinical supervisors undertake before, during, and after clinical placements. The findings will allow clinical supervisors, who support and evaluate therapy students during the clinical placements, to understand how they can support the development of students' EI skills. Employers will gain an appreciation of the maturation levels of new graduates' EI skills when they commence work in healthcare settings.

Ultimately, this thesis will provide a series of recommendations, in Chapter 6, that if implemented should assist therapy students to graduate with EI skills that allow them to be more effective healthcare professionals.

Chapter 2 LITERATURE REVIEW

This chapter provides an overview of the core constructs and previous research that are central to this research study. This chapter also adds depth to some of the concepts, theory, and research that appear in the literature review sections of the five published journal articles. Some research is included in this chapter that was published after the journal articles were accepted for publication.

The literature review commences with an overview of the role of emotion and emotional intelligence in the workplace and healthcare settings. An overview of the two primary EI models, ability-based and mixed or trait models is presented. The history, evolution, and skills that form Bar-on's Model of Emotional Intelligence, the conceptual framework selected for this study, is described. The current literature on the EI skills of healthcare professionals with a focus on occupational therapy, physiotherapy, and speech pathology students (therapy students) is explored. The importance of clinical placements in therapy curricula and the links between EI and clinical placement performance are reported. The literature review concludes with a review of how EI develops and can be improved in adults.

It is important to note that there is a trend in these three therapy professions towards graduate entry programs, where students with an undergraduate degree undertake an accelerated two, or two-and-a-half, year program. There is also a move towards an entry-level clinical doctorate being required in some therapy professions in North America (Brown, Crabtree, Mu, & Wells, 2015). The students used in our study were undergraduate students undertaking four-year programs in Australian universities. Thus these graduate entry and clinical-doctorate programs are generally not discussed in this literature review or in the thesis.

2.1 Emotion in the workplace

Emotions are an integral daily part of all jobs and all workplaces, including healthcare settings. Throughout history, the role of human emotions in the workplace and their

impact on work performance have been discussed and debated. Emotions have been defined as “...affective states that have arousing or motivational properties...” (Kozlowski, Hutchinson, Hurley, Rowley, & Sutherland, 2017, p.1). Consensus suggests that emotions involve a complex interaction between cognitive and non-cognitive neurological systems (Ashkanasy & Humphrey, 2011). The research into emotions in the workplace has moved rapidly from a time where emotion-work research was scant, to the present, where there is “...a veritable explosion of interest in the study of affect and emotions in organizations” (Ashkanasy & Humphrey, 2011, p.214). The emotional dimension of humans and work are inseparable. According to the Five-Level Model of Emotion in Organisations, emotions are initially experienced internally by each worker while emotions are sensed between workers. This emotional content is then taken into account when workers communicate. The Five-Level Model goes on to emphasise that emotions are felt and used when workers work together in teams. The top level of the Five-Level Model describes how workers must also be aware of and take the emotional climate of the whole organisation into account (Ashkanasy & Humphrey, 2011).

Emotions are potent drivers that influence decision-making, judgement, learning, problem-solving, and professional identity development in healthcare settings (Helmich et al., 2017; Kozlowski et al., 2017). A review of the literature on emotions in healthcare settings purported that emotions impact patient safety and influence the instances of medical errors (Heyhoe et al., 2016). Healthcare professionals are encouraged to acknowledge how powerful emotions are during clinical decision-making and are recommended a move towards a culture that understands, recognises, and manages emotions (Heyhoe et al., 2016). It has been argued that continuing to separate the impact of emotion on clinical reasoning in healthcare settings is counterproductive (Hutchinson, Hurley, Kozlowski, & Whitehair, 2017).

On a daily basis, healthcare professionals work closely with people whose emotions are aroused or altered. Illness, pain, distress, physical frailty, mental health changes, stress, grief, and loss can lead to patients expressing, and in some cases not expressing, an array of emotions which the healthcare practitioner should be cognizant. Healthcare professionals must react appropriately to each of these

emotional states and take these emotions into account when responding to patients and when making clinical decisions (Howe, 2008). As Barlow and Hall (2007, p.399) noted,

“...practitioners and field students are repeatedly exposed to the brutal conditions of clients’ lives that are often the fallout of oppressive structures in our society. Witnessing painful client circumstances commonly evokes intense emotional responses. An experienced field instructor pointed out that, ‘This is how things are. It’s part of the job. You just get on with it’.” (Barlow & Hall, 2007)

Healthcare professionals, including therapists, are involved in emotional labour on a daily basis. Emotional labour was first described by Hochschild (1983) and has been defined as “...the induction or suppression of feelings to sustain an outward appearance that produces in others a sense of being cared for in a convivial safe place” (Hochschild, 1983, p.7). Emotional labour requires the employee to manage their emotions and emotional expressions to achieve work goals (Zeidner et al., 2010). Hochschild (1983) identified that jobs that involve emotional labour have common characteristics including direct face-to-face or voice contact with the public and that the job requires the worker to produce an emotional state in another person. For example, a healthcare worker undertakes emotional labour to ensure a patient feels they have been heard and understood. To do this, the healthcare worker must draw upon an array of intrapersonal and interpersonal skills, as well as their emotional intelligence skills.

2.2 Emotional intelligence

Emotional intelligence is the ability of an individual to understand their own emotions, as well as other peoples’ emotions, and ultimately to make decisions using this emotional information during everyday life and in the workplace (Howe, 2008).

Emotional intelligence is recognised as a realm of human cognitive capability with EI now included as a second-stratum factor of intelligence, similar in importance to fluid intelligence and visual processing (MacCann et al., 2014). However, meta-analyses of

EI research using the ability models, have suggested that some aspects of EI show only weak correlations to cognitive and fluid intelligence (Olderbak, Semmler, & Doebler, 2018). The results from MacCann et al.'s (2014) study suggests that EI possesses adequate psychometric criteria to be considered a separate and distinct group factor of intelligence. Mayer, Salovey, and Caruso (2004, p.198) view the 'intelligence' in emotional intelligence as:

“...the capacity to carry out abstract thought, as well as the general ability to learn and adapt to the environment...Different types of intelligence are often distinguished according to the kinds of information on which they operate...We conceive of EI, therefore, as operating on emotional information.”

The concept of EI emerged from the study and measurement of intelligence. In 1920, Thorndike proposed that intelligence was related to the ability to learn. Thorndike divided intelligence into three distinct categories: social, abstract, and mechanical. Thorndike described social intelligence as "...the ability to understand and manage men and women and boys and girls, to act wisely in human relations" (Thorndike, 1920, p.228). In the 1980s, Gardner proposed multiple, non-hierarchical types of intelligences that included interpersonal, intrapersonal, verbal, and kinaesthetic intelligences, amongst others. Interpersonal intelligence described the ability to understand others' emotions and managing relationships with other people, while intrapersonal intelligence was used to describe self-awareness (Gardner, 1983). The EI term can be traced back to Wayne Payne who, in 1985 was the first author to use the phrase 'emotional intelligence' (Payne, 1985; Zeidner et al., 2010). The first systematic work on emotional intelligence was conducted by John Mayer and Peter Salovey, with the first published article appearing in the *Imagination, Cognition and Personality* journal (Salovey & Mayer, 1990). As research has progressed, two distinct types of EI models have emerged - ability based models and mixed or trait models.

The ability based model, first proposed by Salovey and Mayer (1990), views EI as an actual ability that allows a person to enhance their thoughts and make decisions that take into account their own emotions, as well as other peoples' emotions. Salovey and Mayer (1990) describe four strands of ability EI: identifying emotions, assimilating

emotions into thought, understanding emotions, and managing the emotions of oneself and others. The ability based models purport that emotions are a critical source of information for individuals that help them make sense of their social environment and assists in the decision-making process (Papadogiannis, Logan, & Sitarenios, 2009; Zeidner et al., 2010). Various measurement tools have been developed, most notably the Mayer-Salovey-Caruso Emotional Intelligence Test known as the MSCEIT. The Mayer-Salovey-Caruso Emotional Intelligence Test requires participants to solve emotional problems such as: "Look at this photo (of a rocky coastline). How much of each feeling is expressed by this picture? Choices: happiness, sadness, fear, anger, disgust; or "What mood/s might be helpful when composing an inspiring military march?" (Maul, 2012; Zeidner et al., 2010).

The mixed or trait models are an expanded conceptualisation of EI that include personality and motivational characteristics. The mixed or trait models have been proposed by Goleman (1996), Bar-on (1997), and Petrides and Furnham (2000). The mixed or trait models encompass an array of affective and emotive skills, as well as motivational and personality traits, that assist the person in making decisions in real life scenarios (Bar-On, 2006; Zeidner et al., 2010). The three authors have described their own models of emotional intelligence. Goleman contends that emotional competencies are not innate talents, but rather learned capabilities that must be developed to achieve outstanding performance. Goleman's model views EI as an array of skills and competencies that influence leadership performance and include: self-awareness, self-regulation, social skills, empathy, and motivation (Goleman, 1996). Petrides and Furnham (2000) describe trait EI as a "...constellation of emotional self-perceptions located at the lower levels of personality hierarchies..." (Petrides, Vernon, Schermer, & Veselka, 2011, p.35). As Bar-on's model has been selected as the conceptual framework for this study, it will be described in more detail below. To measure EI using the mixed models, authors have published various measurement tools, most notably the Emotional Quotient Inventory (and the updated version Emotional Quotient Inventory 2.0) and Emotional Competency Inventory, with both using a self-report questionnaire format (Zeidner et al., 2010).

Emotional intelligence has both detractors and supporters. The mixed models are criticised for being too broad in their conceptualisation, because they encompass personality and motivation factors, while the ability-based models are purported to be too narrow in focus (Zeidner et al., 2010). Authors have suggested that the ability-based measurement tool is flawed because of its reliance on correct responses to emotional problems which might neglect the interpersonal skill of EI which accesses one's personal experience of emotions (Petrides, Furnham, & Mavroveli, 2007). Much has been written about the flaws in measuring EI using self-report tools (e.g., Zeidner et al., 2010) but Van Rooy and Viswesvaran (2007) stated that self-report tools possibly capture "...the rich idiosyncratic emotions experienced by the test taker—emotions that may be accessible only to that person" (p. 261). Waterhouse (2006) is troubled by the conflicting EI constructs and definitions. On the other hand, Cherniss, Extein, Goleman, and Weissberg (2006, p. 239) have defended the differing EI constructs:

"At this early stage of the theory's development, the generation of several versions of EI theory is a sign of vitality in the field, not a weakness. IQ theory has, likewise, had multiple versions—Guilford, Cattell, Wechsler, and Sternberg notable among many others. In fact, after nearly 100 years of research and theory, there still is not a consensus about what IQ is or the best way to measure it. Expecting such a consensus for EI, especially at this stage of the theory's development, seems to be holding it to a different standard."

2.2.1 Bar-on's Model of Emotional Intelligence: the conceptual framework for this study

The conceptual framework selected for this study, the Model of Emotional Intelligence (Figure 2.1), is a mixed model. A mixed model was selected because of the breadth of emotional, as well as personality and motivational skills that are integrated. The Model of Emotional Intelligence comprises self-perception, self-expression, interpersonal, decision-making, and stress management abilities (Bar-On, 1997; Multi-Health Systems, 2011). The array of skills incorporated into the Model of Emotional

Intelligence encompasses many, but certainly not all, of the critical skills healthcare practitioners use when working in teams and when working with patients in emotional distress. Bar-on's Model of Emotional Intelligence was preferred over Goleman's mixed model because Goleman focuses on using EI skills in managerial roles while Bar-On offers a breadth of emotional, as well as personality and motivational skills. Bar-on states that:

“...ultimately, being emotionally and socially intelligent means to effectively manage personal, social and environmental change by realistically and flexibly dealing with the immediate situation, solving problems and making decisions. To do this, we need to manage emotions so that they work for us and not against us and we need to be sufficiently optimistic, positive and self-motivated” (Bar-on, 2006, p. 4).

The Model of Emotional Intelligence was initially conceptualised by Bar-on (1997) and modified by Multi-Health Systems (2011). Bar-on's model was influenced by Charles Darwin's work on the significant role of emotional expression in the survival and adaptation of species (Bar-on, 2010; Bar-On, Handley, & Fund, 2006). Bar-on was also influenced by Thorndike's 1920 description of social intelligence, Appelbaum's conceptualisations of psychological mindedness, as well as Wechsler's 1940s research related to the importance of non-cognitive and conative factors on intelligent behaviour (Bar-On, 2006). Bar-on initially defined EI "...as a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands..." (2006, p. 16). Bar-on's model and definition were reviewed and updated by Multi-Health Systems with the latest version defining EI 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). There has been a movement, from EI being conceived as an array of 'skills and competencies' in the 1996 definition, to the view that EI is a set of 'skills' in the 2011 definition.

The Model of Emotional Intelligence illustrated in Figure 2.1 presents EI as a combination of five Composites (self-perception, self-expression, interpersonal, decision-making, and stress management) each with three Subscales – for a total of 15 Subscale components. Table 2.1 presents the definitions of the Composite and Subscale EI skills that form the Model of Emotional Intelligence.

Happiness is included in the model as a Well-being Indicator because research has reported that happiness is higher in people with higher EI (Multi-Health Systems, 2011). The subsequent results of our study do not include the happiness scores as happiness is an outcome of higher EI, not a contributing factor.

The Emotional Quotient Inventory 2.0, the measurement tool that operationalises the Model of Emotional Intelligence, is described in detail in the Methods chapter of this thesis.

Figure 2.1: Model of Emotional Intelligence showing the EI Composites, Subscales and Well-Being Indicator (Multi-Health Systems, 2011)

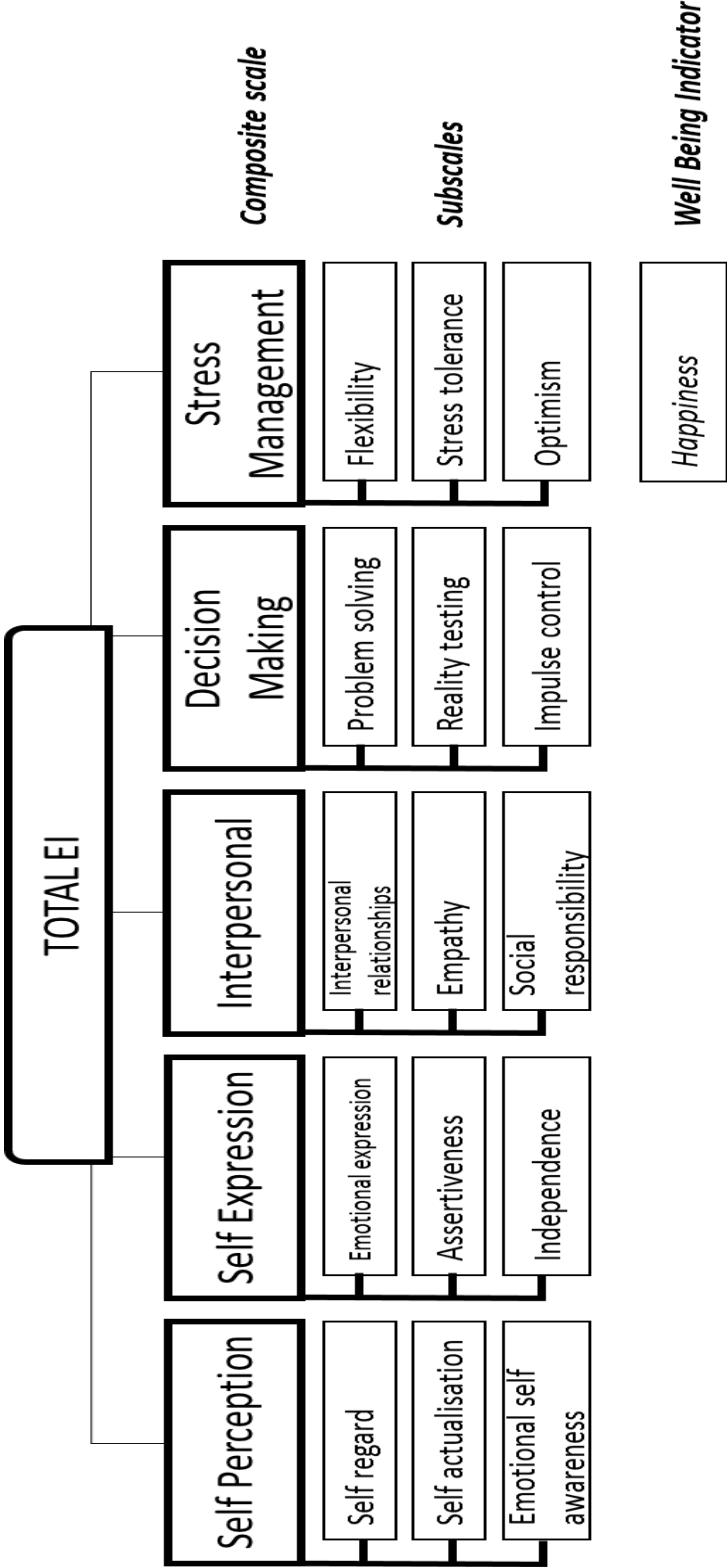


Table 2.1: Definitions of Composite (in capital letters) and Subscale skills of the Model of Emotional Intelligence (Multi-Health Systems, 2011, p.75-78)

SELF-PERCEPTION	"...the ability to assess feelings of inner strength and confidence, persistence in the pursuit of personally relevant and meaningful goals, and an understanding of what, when, why, and how different emotions impact thoughts and actions."
Self-regard	"...is respecting oneself while understanding and accepting one's strengths and weaknesses...often associated with feelings of inner strength and self-confidence."
Self-actualisation	"... is the willingness to persistently try to improve oneself and engage in the pursuit of personally relevant and meaningful objectives that lead to a rich and enjoyable life. Self-actualization is associated with feelings of self-satisfaction".
Emotional self-awareness	"...includes recognizing and understanding one's own emotions. It involves the ability to differentiate between subtleties in these emotions while being aware of their causes and the impact they have on the thoughts and actions of oneself and others."
SELF-EXPRESSION	"...assesses one's propensity to remain self-directed and openly expressive of thoughts and feelings, while communicating these feelings in constructive and socially acceptable ways."
Emotional expression	"...is openly expressing one's feelings verbally and non-verbally. The communication of those feelings in a manner that can be understood and experienced by the recipient."
Assertiveness	"... involves communicating feelings, beliefs, and thoughts openly, and defending personal rights and values in a socially acceptable, non-offensive, and non-destructive manner".
Independence	"...the ability to be self-directed and free from emotional dependency on others. Independent people are self-reliant in planning and making important decisions when faced with emotional situations".
INTERPERSONAL	"...one's ability to develop and maintain relationships based on trust and compassion; articulate an understanding of another's perspective; and act responsibly while showing concern for others, a team or a greater community/organization."
Interpersonal relationships	"...refers to the skill of developing and maintaining mutually satisfying relationships that are characterized by trust and compassion. Mutually satisfying relationships include social interchanges that are potentially meaningful, rewarding, and enjoyable."
Empathy	"...is recognizing, understanding, and appreciating how other people feel. Empathy involves being able to articulate your understanding of another's perspective and behaving in a way that respects others' feelings."
Social responsibility	"...is willingly contributing to society, to one's social groups, and generally to the welfare of others. Social Responsibility involves acting responsibly, having a social consciousness, and showing concern for the greater community."
DECISION-MAKING	"...how well one understands the impact emotions have on decision making, including the ability to resist or delay impulses and remain objective in order to avoid rash behaviors and ineffective attempts at problem-solving."
Problem-solving	"...is the ability to find solutions to problems in situations where emotions are involved. Problem-solving is about using emotional information to enhance the process of recognizing a problem, feeling confident in one's ability to work through it, defining the problem, generating a solution, and implementing the plan".
Reality testing	"...is the capacity to remain objective by seeing things as they really are. This involves recognizing when emotions or personal bias can cause one to be less objective".
Impulse control	"... is the ability to resist or delay an impulse, drive, or temptation to act...Impulse control entails a capacity for recognizing and accepting one's desire to react without becoming a servant to that desire".
STRESS MANAGEMENT	"...addresses how well one can cope with the emotions associated with change and unfamiliar or unpredictable circumstances while remaining hopeful about the future and resilient in the face of setbacks and obstacles."
Flexibility	"...is adapting emotions, thoughts and behaviors to unfamiliar, unpredictable, and dynamic circumstances or ideas."
Stress tolerance	"... involves coping with stressful or difficult situations and believing that one can manage or influence those situations in a positive manner. Stress tolerance... is a strong indicator of one's ability to effectively deal with problems and crises".
Optimism	"...is an indicator of one's positive attitude and outlook on life. It involves remaining hopeful and resilient, despite occasional setbacks".

2.3 Emotional intelligence in healthcare professionals

Healthcare professionals use EI skills in all facets of their daily work when working in healthcare settings. Emotional intelligence skills are used during interactions with patients including when they meet and build rapport, conduct assessments, select therapeutic medium, provide education or change behaviour, and when using counselling skills such as empathy, active listening and motivational interviewing. When developing rapport and trust, EI skills allow the healthcare practitioner to demonstrate empathy, read emotional cues, be self-aware, read the emotional milieu, and demonstrate emotional self-control (Andonian, 2013; Taylor, Lee, Kielhofner, & Ketkar, 2009). Emotional intelligence skills are required during self-reflection to interpret and understand the emotions that may have influenced decision-making. Emotional intelligence skills are also used when working in teams to manage conflict, work efficiently in interprofessional teams, and when making decisions about patient care (Clarke, 2010a; Howe, 2008; Stagnitti et al., 2010; Stein & Book, 2011). Intriguingly, the EI skills of differing professions been shown to vary. Amongst the healthcare professions, when tested using the Emotional Quotient Inventory, social workers presented with high EI scores in independence, stress tolerance, assertiveness, and impulse control; while psychologists had higher scores in independence, reality testing, stress tolerance, and flexibility. For business professions, the highest EI scores in management consultants were assertiveness, emotional self-awareness, reality testing, and self-actualisation; while in human resource personnel the EI skills of self-actualisation, optimism, assertiveness, and stress tolerance were highest (Stein & Book, 2011). The reality is that healthcare professionals use an array of EI skills during almost every human interaction.

Employers view a graduate's discipline degree as necessary, but it is not the only criteria for recruitment (Yorke, 2006, p.8). As Gordon-Handler (2009, p. 27) states, "...the accomplishment of credentialing procedures alone does not guarantee that a person will become an excellent doctor, therapist, nurse, accountant, or CEO...a person who possesses both good intrapersonal and interpersonal competencies is more likely to...show outstanding achievement...". While Emmerling and Goleman

(2005, p.9) agree, stating that, "...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". Research has repeatedly shown that emotional intelligence is a core skill set required by healthcare professionals, above and beyond cognitive intelligence. Fostering and maintaining quality therapeutic relationships and being a capable team member is strengthened when the therapist can demonstrate skilled use of their own emotional intelligence, in combination with an array of other clinical, professional, intrapersonal, and interpersonal skills (Brunton, 2005; Larin et al., 2011; Martins, Ramalho, & Morin, 2010; Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007; Zapf, 2002).

Higher EI skills are purported to have many benefits for healthcare professionals and students. A meta-analysis of 395 studies that included healthcare professionals concluded that EI is positively correlated with critical thinking skills and emotional competency (Michelangelo, 2015). Previous studies involving healthcare professionals show that mature EI competencies are positively correlated with reduced stress (McCloughen & Foster, 2017), enhanced caring behaviours (Morales, 2014), increased patient satisfaction (Azimi et al., 2010), and teamwork skills (Brown et al., 2017). For students, higher EI skills are linked to better performance in clinical placements (Andonian, 2013). Teams with higher EI have been shown to have a positive impact on team cohesion and their ability to deal with conflicts (Lee & Wong, 2017). Similarly, EI has been shown to be imperative for graduates who need skills to be work-ready so they can communicate effectively with colleagues, handle daily stressors, generate and maintain relationships with industry partners, and ultimately be able to make decisions under emotional pressure (Boyatzis & Saatcioglu, 2008; Dacre Pool et al., 2014). Many healthcare graduates aspire to management and leadership roles. Research has demonstrated that leaders with higher EI skills are often more effective in leadership roles (Emmerling & Goleman, 2005; Goleman, Boyatzis, & Mckee, 2013). Results show that higher EI positively predicts performance for people in high emotional labour jobs (e.g., nursing, therapists, customer service) but negatively predicts performance for low emotional labour jobs (e.g., rubbish collection, gardening) (Zeidner et al., 2010).

2.4 Emotional intelligence and employability of university graduates

Tertiary education has the remit to ensure graduates have the skills to succeed in the workplace (Artess et al., 2016; Sewell & Dacre Pool, 2010). Research has detailed many attributes and proficiencies that graduates entering the workforce require including teamwork, conflict management, written, verbal and non-verbal communication, confidence, resilience, flexibility, and stress management skills (Stagnitti et al., 2010; Walker et al., 2013). Recent research has described a set of contemporary proficiencies that graduates in the 21st century require including; a design mind-set, virtual collaboration skills, cross-cultural competency, new media literacy, novel and adaptive thinking, social intelligence, and importantly for this study, emotional intelligence (Davies, Fidler, & Gorbis, 2011; Little, 2006). Many of these desired attributes assist a graduate to foster their 'employability'. Recently, many universities, as well as employers and recruiters, have embraced the concept of *employability* as an important outcome for graduates entering the workforce (Hager & Holland, 2006; Oliver, 2015).

Employability is regarded as a critical factor in contemporary career success. Employability encompasses a myriad of the above-mentioned attributes with a focus on personality, attitudes, and motivation, as well as the individual's vocational ability (Van Der Heijde & Van Der Heijden, 2006). Definitions of employability abound in the literature. Dacre Pool and Sewell (2007, p. 280) define employability as "...having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful". While (Yorke, 2006, p.8) has proposed that employability means that "...students acquire the skills, understandings and personal attributes that make them more likely to secure employment and be successful in their chosen occupations to the benefit of themselves, the workforce, the community and the economy".

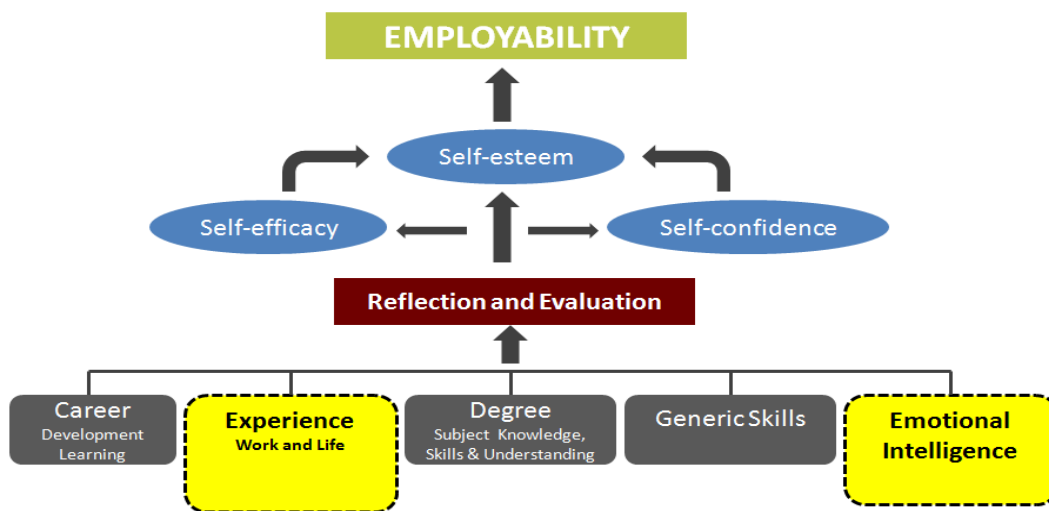


Figure 2.2: The CareerEDGE Key to Employability Model (Sewell & Dacre Pool, 2010, p.90) with emotional intelligence and experience highlighted (in yellow) as these are the key elements being investigated in this study.

The CareerEDGE Key to Employability Model (Dacre Pool et al., 2014) includes EI as a determinant of employability (see Figure 2.2). The CareerEDGE Model has five major components: the university degree; generic skills that can be used in an array of workplaces; career development learning which refers to the graduate understanding how to attain and maintain employment and how to progress their careers; life and work-related experience; and of interest to this study, emotional intelligence.

Accordingly, mature EI skills are integral to university students including those studying healthcare courses, becoming work-ready, as well as being a critical component of graduates enhancing their employability.

2.5 Emotional intelligence in healthcare students

Only a few studies have tracked changes in EI scores in healthcare students from start to end of their university program. Benson, Martin, Ploeg, and Wessel (2012) tracked the EI of nursing students (n=52) over their four-year undergraduate course. At three points during the course, participants completed the Emotional Quotient Inventory – Short (a mixed model). Total EI did not change significantly over the four-year course,

but one EI subscale, Adaptability ($p= 0.03$), showed significant positive change. More recently, a study tracked changes in EI using the Assessing Emotions Scale (a mixed model) in Australian nursing students ($n=111$) over a three-year period (Foster et al., 2017). The findings showed a significant positive change in EI and the ability to utilise emotions also changed significantly over this period.

Previous studies have reported that some students in healthcare programs have high EI skills, while other students demonstrate EI skills considered low, even below population norms. A study by Jensen et al. (2008) of American surgical residents, with a mean age of 29.6 years, identified that overall the subjects' EI scores were higher than the national EI norms. A study of undergraduate nursing students, with a mean age of 26 years, reported that 21% of the cohort ($n=165$) had a Total EI score less than 90, which indicated that their EI needs '*required development or required improvement*' (Reemts, 2015). Only 16% of the same cohort had Total EI scores that were considered in the skilled or expert range. Another study of undergraduate nursing students, again with a mean age of 26 years, showed similar results where 34% ($n=35$) of students had EI scores considered low (Marvos & Hale, 2015). Australian EI normative data, using the Emotional Quotient Inventory 2.0, shows that mean Total EI for 18-29-year-olds is significantly lower than older persons (Multi-Health Systems, 2012). These results align with findings that an individual's EI skills tend to increase throughout adulthood and as a result, some EI skills in students may still be maturing (Bar-On, 1997).

Some studies have tracked the development EI across the professional lifecycle in healthcare professionals. One study measured the EI of 700 radiographers (using a trait-based measurement tool) finding that experienced radiology professionals with six or more years of experience have significantly higher EI than relatively inexperienced radiographers (Lewis, Eccles, Mackay, & Robinson, 2017). Shanta and Gargiulo (2014) reported that nursing students in the early years of their program presented with lower EI scores than senior students.

Healthcare students deal with emotions during clinical placements in a variety of ways. Helmich et al. (2017) reported that medical students who felt confident during complex emotional scenarios demonstrated more creative problem-solving and were

actively involved in dealing with emotional issues. However, the students who perceived the complex emotional scenario to be beyond their control distanced themselves from the patient or tried to hide behind other health professionals in the hope that they would take over and solve the problem. Another study investigated the differences in how dental students cope with stress (Pau, Croucher, Sohanpal, Muirhead, & Seymour, 2004). Students with higher EI scores reportedly used more reflection, social and interpersonal skills, and self-organisation to cope with stressful scenarios. While students with low EI were more likely to engage in behaviours that might be damaging to their health such as smoking, eating more, sleeping less, and drinking alcohol. In summary, students with higher EI tend to cope better with the stressors that are an inherent part of clinical placements and working in healthcare settings.

No studies were found that used interviews with university students to investigate any aspect of their EI skills. One interview-based study explored the role that EI plays in the daily practises of healthcare professionals. Akerjordet and Severinsson (2004) investigated the importance of EI in nurses (n = 7) working with people with mental health conditions. Three main themes emerged. Firstly, relationships with patients are enhanced when the nurse reflects on the emotions the person might be feeling. Secondly, supervision that enhanced reflection was seen as critical in developing the necessary skills to deal with emotional issues that arose with patients. Thirdly, understanding emotions through reflection enabled the nurses to gain a greater sense of motivation and responsibility. This study provides some insight into the pivotal role that reflection might play in the maturation of EI skills in the workplace.

2.6 Occupational therapy, physiotherapy, and speech pathology students

The focus of this study is students enrolled in occupational therapy, physiotherapy, and speech pathology programs. In Australia, there are more than 50,000 practising occupational therapists, physiotherapists, and speech pathologists; and more than 11,600 students enrolled in these three therapy programs in Australian universities (Health Workforce Australia, 2011, 2013). Despite these large numbers, there is a paucity of research on the EI of occupational therapy, physiotherapy, or speech pathology practitioners or students, minimal research emanating from Australia.

All three therapy professions at the heart of this study have competency standards that graduates are expected to have attained, although none of these competency documents explicitly mention EI skills. For example, the occupational therapy profession in Australia has defined the Australian Occupational Therapy Competency Standards (Occupational Therapy Board of Australia, 2018). However, EI skills are a part of some of the competencies. For example, occupational therapists must be competent in “...communicating openly, respectfully and effectively...” which could entail effective interpersonal and assertiveness EI skills. A competency standard for speech pathologists states that graduates should be able to “...develop a working relationship with the client that is based on respect and recognition of the strengths and weaknesses of the individuals involved” – which would involve some EI skills. The Standards for Physiotherapy Practices (Australian Physiotherapy Council, 2011) state that physiotherapists use “...communication that is tailored to the individual needs of a client is fundamental to an effective client-practitioner relationship built on mutual trust and respect.” Despite some evidence linking EI to enhanced patient outcomes and better teamwork, amongst other benefits, it is disappointing that none of these therapy professions in Australia has specified that graduates have attained an entry-level capability of EI skills.

2.6.1 The emotional intelligence of occupational therapy, physiotherapy, and speech pathology students

Only a few studies tracked changes in EI of therapy students using longitudinal studies. A study of American physical therapy students ($n=60$, mean age = 22 years) used Baron's Emotional Quotient Inventory: Short Version (a mixed model measurement tool) at the commencement of their university studies (Larin et al., 2009). Their EI was again measured 12 months later, just before undertaking their first full-time clinical placement. This study reported that physical therapy students at the commencement of their university program had most EI scores in the normal range compared to age-matched norms, with some EI skills higher than are considered normal. There was no significant change in their EI scores over the first 12 months of the program – however, the study did not coincide with any clinical placements. Another study that measured EI changes, over a three-year period of Doctor of Physical Therapy students ($n=260$, mean age = 25 years) using an ability model measurement tool, showed no significant changes in EI over this period (Lewis, 2011). No studies were located that reported the range of EI scores, nor the low or high scores, for occupational therapy, physiotherapy, or speech pathology students.

Some studies had investigated the links between EI and other attributes. A study of nursing, physical therapy, and Bachelor of Health Science students ($n=154$) compared the EI of the three health disciplines, and also determined if EI was associated with effective leadership styles, caring, and moral judgement (Wessel et al., 2008). The total EI ($M=100.6$, $SD = 12.1$) and EI subscale scores were within the normal range. The most substantial difference in EI was between nursing and physical therapy students, with nursing students identified as being lower in EI. The results identified a relationship between EI and leadership, and between EI and general caring. The study did not find a correlation between EI and moral judgement.

Only one paper was identified that discussed EI and speech pathologists. Taylor (2005) linked the five core EI skills of Goleman's EI model to the practise of speech pathologists; namely, self-awareness, self-regulation, motivation, empathy, and social skills. The author argued that if speech pathologists mastered these five core EI skills, they could become more productive, team-oriented employees.

2.7 Emotional intelligence can be improved

There are multiple mechanisms whereby EI skills can mature and improve (Zeidner et al., 2010). Emotional intelligence has been shown to increase with age. Emotional intelligence scores tend to increase through adulthood but level out in the late forties (Bar-On, 1997), while Multi-Health Systems (2011) reported that EI continued to increase well into peoples' sixties. Australian EI normative data using the Emotional Quotient Inventory 2.0 shows that mean Total EI for 18-29-year-olds ($M= 93$, $SD = 14.3$) is significantly lower than older persons who are 50+ years ($M= 101.9$, $SD = 14.2$) (Multi-Health Systems, 2012). Even without deliberate interventions, EI can be increased due to a variety of factors including childhood experiences, environmental exposure, and natural emotional maturation (Zeidner et al., 2010). In 2014, 82% of Australian university students enrolled in undergraduate programs were 26 years or younger (Department of Education and Training, 2014) which may mean that many therapy students have EI skills that are still developing and maturing.

Emotional intelligence can also be enhanced via coaching and training programs focused on specific EI skills. Research has reported that EI is malleable and can be improved in adults (Howe, 2008). Research has shown that EI can be enhanced through participation in EI workshops that focus on specific EI skills (Boyatzis & Saaticioglu, 2008; Dacre Pool & Qualter, 2012; Gholamzadeh et al., 2018; Hodzic et al., 2018; Neumann et al., 2011). Mattingly and Kraiger's (2018) meta-analysis of 58 studies that included an EI training program, with either a pre-post or treatment-control design, concluded that EI is a trainable construct. They noted that males and females benefit equally from EI training. They also reported no significant differences

between ability and mixed EI models. Training approaches include EI skill education, self-questioning strategies, coaching, and role play (Brackett, Mayer, & Warner, 2004; Clarke, 2010b; Codier, Freitas, & Muneno, 2013). An essential factor in a person's ability to improve their EI is receiving accurate feedback from peers, managers, or mentors (Zeidner et al., 2010).

As a result of the finding that EI can be enhanced via training, some authors (Foster et al., 2014; Nelson et al., 2015) have advocated for university allied health and medical programs to embed EI throughout the curriculum, so students enter the workforce equipped with improved EI skills. 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 (Artess et al., 2016; Sewell & Dacre Pool, 2010). Gillespie et al. (2018, p. 1062) in their study on caring in medical practitioners concluded that,

"...curriculum leaders and teachers (need) to emphasise the importance of basic relational skills, alongside all the paraphernalia of contemporary technical medicine...They should repeat relentlessly that neither competence nor caring is, alone, sufficient. Both are necessary, and integrating the two into a genuinely caring medical identity should be every (student) doctor's aspiration".

Of importance to our study, EI can be enhanced via workplace learning. Clinical placements are a form of workplace learning. Workplace learning has been defined as "...the type of learning that occurs while performing the job itself, such as mentoring, coaching, team learning, increasing job challenge, and incidental learning that arises through doing the job" (Clarke, 2006, p.448). Workplace learning occurs when a person is immersed in an authentic workplace, such as clinical placements. Some authors argue that workplace learning is better at developing EI skills than training or

workshops (Brewer & Cadman, 2000; Freshwater & Stickley, 2004). 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". Two studies by Clarke (2006, 2010b) reported that EI skills in healthcare professionals and teams could be developed via workplace learning. The formal healthcare curricula taught on the university campus has limitations compared to learning on the job. For example, learning how to care for people who are palliative and in the last stages of life, is best learnt on the job by working alongside people who are dying (Macleod, 2001). Emotional intelligence skills can be improved via workplace learning when a student observes a colleague with high EI skills, receives on-the-job mentoring, or works in a team environment that uses effective EI skills (Clarke, 2010b). Another study by Clarke (2006) that included a range of healthcare professionals in hospices in the UK found that workplace learning leads to improvements in the ability to manage emotions and the ability to use emotions to facilitate thinking and decision-making.

The reality appears to be that university healthcare programs include minimal EI content in their curricula (Foster et al., 2014; Nelson et al., 2015). Thus the most fertile ground where therapy students learn EI skills, beyond normal maturation, may well be during clinical placements.

2.8 Clinical placements for therapy students

University therapy programs aim to ensure students are ready for the demands of clinical practise in the healthcare settings they will be working in upon graduation. Clinical placements for therapy students are the nexus where theory and practise skills taught in the classroom are practised in authentic settings with real patients under the guidance of experienced practitioners. During clinical placements in all areas of practice, therapy students are required to manage emotions, and thus they need to use their EI skills on a daily basis (Howe, 2008). For example, during paediatric placements students work with children who are upset and families who are frustrated; during an orthopaedic placement they work with patients who are in pain and distress; and during mental health placements, patients might be confused or

emotionally labile (Stagnitti et al., 2010). Healey (2017) investigated the use of emotion during clinical placements by using creative writing groups in which occupational therapy students produced stories and poems about placement experiences. Her findings indicate that managing emotion was an influential part of students' learning during placements.

“The emotion management in which the students engaged was a complex part of the multiple discourses around them as students and as potential professionals, being assessed. They had to manage their emotions on many levels, to appear competent to their Practice Educators as well as demonstrate their ability to manage their emotions in order ultimately to manage those of the patients” (Healey, 2017, p.682).

Clinical placements have been described as the “...most influential learning experience in a student's journey to becoming a competent health professional” (Siggins Miller Consultants, 2012, p.3). A study of 997 Australian university students who had undertaken a work-integrated learning placement, confirmed that placements have an influence on student work-readiness and contribute to employability capabilities (Smith, Ferns, & Russell, 2016). Billett (2011, p. 2) defines work-integrated learning, an umbrella term that encompasses clinical placements, as:

“...the process whereby students come to learn through experiences in educational and practice settings and reconcile and integrate the contributions of those experiences to develop understandings, procedures, and dispositions, including the criticality and reflexivity, required for effective professional practice”.

The benefits of university students undertaking clinical placements in authentic workplaces are well documented. Hummell, Higgs, and Mulholland (2010, p.97) state “...fieldwork education plays a vital and highly influential role in the education and professional socialisation of health science students”. Patrick et al. (2008) conducted interviews with key stakeholders; namely, students, university academics, and employers. Students reported that placement increased engagement, practise skills,

and critical thinking. Placements increased students' motivation to learn and understand the work culture in their chosen field of practice. As one student participant noted, "...no course at uni could offer the experience a workplace can – it's worth the stress" (Patrick et al., 2008, p. 20). Many authors report on the generic, work-based skills that are fostered during placements (Billett, 2011; Health Workforce Australia, 2011; McAllister et al., 2010; Newton, Jolly, Ockerby, & Cross, 2010; Patrick et al., 2008; Verma, Paterson, & Medves, 2006). Generic, work-based skills that are often shaped by placements include communication skills with co-workers and consumers, organisational skills, teamwork, self-management, problem-solving, technology, initiative, and enterprise skills.

Clinical placements enhance the self-efficacy of students (Raelin et al., 2011). Bandura (1994) defines self-efficacy as "...people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave" (p.71). Bandura (1994) proposed that the sources that impact a person's self-efficacy development are mastery experience, vicarious experience, social persuasion, and emotional arousal. Bandura considers mastery experience, where one practises and succeeds in a specific skill, to be the most influential source of self-efficacy. Bandura (1994, p.3) states that "...successes build a robust belief in one's personal efficacy." Vicarious experience requires the person to observe others in action because witnessing other people succeed in performing a skill increases their belief in their capacity to succeed in the same skill. Social persuasion manifests as direct encouragement from another person, while the fourth source of self-efficacy is emotional arousal which encompasses how different people react differently to a similar emotional state (Bandura, 1994). A primary goal of clinical placements is to prepare healthcare students for independent practise (Hauer et al., 2015), thus placements are an opportunity for students to develop self-efficacy in an array of clinical skills, as well as interprofessional practice, communication, self-management, and an array of intrapersonal and interpersonal skills, including EI skills.

2.8.1 Description of clinical placements for therapy students in Australia

Clinical placements are obligatory in all occupational therapy, physiotherapy, and speech pathology programs in Australia, however, the designated requirements vary from course to course (Australian Physiotherapy Council, 2011; Speech Pathology Australia, 2010; World Federation of Occupational Therapists, 2016). For the three therapy professions, there are differences in the number of hours that must be completed or attained. For occupational therapy students, 1000 or more hours of clinical practice hours are required (World Federation of Occupational Therapists, 2016). For speech pathology students, there are no minimum hours because each student must attain entry-level competencies by the end of the program (Speech Pathology Australia, 2010). Physiotherapy programs must have a "...clinical education model that has sufficient breadth, depth, and comprehensive coverage to ensure that the learning outcomes of the program are met" (Australian Physiotherapy Council, 2011, p.36).

Clinical placements for therapy students take place in a variety of healthcare settings including hospitals, private practices, and community organisations, as well as rural and international locations (McAllister, Paterson, Higgs, & Bithell, 2010; Stagnitti et al., 2010). During the clinical placements, therapy students are progressively exposed to a variety of patients and healthcare settings where they work with problems of increasing complexity. Placements generally occur in all years of undergraduate therapy programs and tend to vary in length starting with short, primarily observation based placements early in the program. Placements progress to full-time and can range from a few weeks to a few months in length depending on the university's requirements. These longer full-time placements, which are the focus of this study, tend to occur towards the end of the university program. In Australia, undergraduate programs in occupational therapy, physiotherapy, and speech pathology are all four years in length. As a result, the longer, full-time placements generally occur near the end of the third year and then throughout the fourth year of the program.

During placements, therapy students typically have an on-site clinical supervisor. The clinical supervisor is a role that has many titles including fieldwork educator, fieldwork supervisor, practice educator, practice placement supervisor, preceptor, and many other terms. A clinical supervisor is an appropriately qualified professional who guides students' education and training during placements (Stagnitti et al., 2010). Clinical placements in the initial part of the university program allow students to observe an experienced therapist. As the program progresses, placements demand that students, in partnership with their supervisors, work towards becoming autonomous, independent practitioners, who seek guidance as needed. The ultimate goal is for the student to become a productive member of the multidisciplinary team (Billett, 2011). Supervision involves "...an interactive dialogue between at least two people, one of whom is a supervisor. This dialogue shapes a process of review, reflection, critique, and replenishment for professional practitioners" (Davys & Beddoe, 2010. p.21). Supervision of healthcare student placements has been described as providing oversight of:

"...professional procedures and/or processes performed by a student or a group of students within a clinical placement for the purpose of guiding, providing feedback on, and assessing personal, professional, and educational development in the context of each student's experience of providing safe, appropriate and high-quality patient care" (Health Workforce Australia, 2011, p.4).

The clinical supervisor's role may encompass educational, support, and managerial functions. The clinical supervisor is responsible for ensuring safe, appropriate and high-quality patient care" (Health Workforce Australia, 2011, p.4). The clinical supervisor plans the placement, role models skills to the student, observes, and provides feedback, as well as assessing each student's performance (Stagnitti et al., 2010). A review of 500 pieces of literature and documents identified the following characteristics of a quality clinical placement: a culture of quality, effective supervision, direct participation in patient care, effective communication and collaboration between students and placement site, and adequate resources (Siggins Miller Consultants, 2012).

2.8.2 Work-integrated learning for business students

Our study called for a control group of similarly aged students who do not do clinical placements. A control group of healthcare students would have been preferred, but due to clinical placements being a required part of healthcare curricula, a control group of business students was used because it is still possible to find business students who do no clinical or work-integrated placements as part of their university program.

Clinical placements for healthcare students have been a required part of university curricula for many decades. On the other hand, work-integrated learning placements for business students are not generally a required part of the curriculum, although these types of experiences are becoming more common as government and industry demand more work-ready graduates (Elijido-Ten & Kloot, 2015; Rook, 2017). The challenges that universities face when implementing work-integrated learning placements for business students include lack of funding, workload and time intensiveness to find and support students, and difficulties in building and maintaining a relationship with industry stakeholders (Rook, 2017). No studies were identified that investigated the EI of business students during work-integrated learning placements.

2.9 Emotional intelligence and therapy students' performance in clinical placements

During clinical placements, the majority of therapy students flourish and are graded as having passed the placement. Student success in clinical placements has been shown to emerge from attributes including professional and intrapersonal skills such as organisational skills, confidence, motivation, professional behaviours, and showing initiative (Rodger, Fitzgerald, Davila, Millar, & Allison, 2011). Clinical skills such as observation skills, problem-solving, clinical reasoning, ability to perform evaluations, and the ability to apply theory to practise are required for success. Success also emerges when students are required to use their EI skills such as when they demonstrate effective interpersonal skills, provide client-centred treatment, use active listening, and cope and act upon constructive feedback from clinical supervisors (Taubman, 2016).

There is some evidence that higher EI is positively correlated with therapy students' performance during clinical placements. A study of occupational therapy students ($n=199$) who had completed at least six weeks of clinical placements asked students to complete the Mayer-Salovey-Caruso Emotional Intelligence Test (an ability model) and a measure of perceived clinical self-efficacy. The clinical supervisor graded each student's clinical performance using the Fieldwork Performance Evaluation for the Occupational Therapy Student. Results indicated a statistically significant correlation ($r = .18, p < .025$) between the overall EI score and the Fieldwork Performance Evaluation sub-score that deals with communication. Students having higher EI were scored higher on clinical performance by their clinical supervisors, than those with lower EI (Andonian, 2013). Another study utilised graduate students ($n=45$) enrolled in an occupational therapy program in New York and their supervisors to investigate whether EI, measured using the Emotional Competence Inventory (a mixed model), influences clinical performance, measured using the American Occupational Therapy Fieldwork Performance Evaluation (Gordon-Handler, 2009). The students had just completed their final 12-week placement. The study found a positive correlation between supervisors' ratings of the EI of the students and fieldwork performance. No

relationship was found between students' self-ratings of their EI and fieldwork performance or the supervisor ratings of the students' EI. Various studies have shown similar links with higher EI scores and higher clinical performance scores in other healthcare students including anaesthesiology residents (Talarico et al., 2013) and nursing (Beauvais, Brady, O'Shea, & Griffin, 2011). A study that tracked the changing EI scores, using the Emotional Quotient Inventory, of students who participated in study abroad programs showed statistically significant differences in the students' EI pre-test and post-test scores. However, the study only included a small number of participants (n=18) (Simmons, 2014). Specifically, students' Total EI, self-perception, self-expression, self-regard, and flexibility skills improved significantly. These students were interviewed on their return where they reported that the international experience developed a stronger understanding and acceptance of self, as well as feeling more self-reliant.

However, not all therapy students have positive placement experiences with some students struggling to perform competently or even being graded as failing their placement (Parker, Saklofske, Wood, Eastabrook, & Taylor, 2005). In their investigation of fail rates amongst occupational therapy students, Korman and Gribble (2016) found that 97% of students pass their clinical placements. A recent study reported that 10 to 15% of medical students have difficulty during placements (Boileau, St-Onge, & Audétat, 2017). Research has confirmed academic success in coursework units is not a predictor of success during clinical placements (Krusen, 2015). Boileau et al. (2017) proposed that medical students have difficulties during placements because of cognitive and non-cognitive issues. These cognitive problems include insufficient knowledge and poor clinical reasoning, while the non-cognitive issues included attitude problems, ignorance of professional responsibilities, different values and beliefs, poor insight and self-regulation, poor social skills, insufficient motivation, and conflicts in the workplace. James and Musselman (2005) investigated occupational therapy students who had failed a placement reporting that failing students often panicked which resulted in subsequent difficulties processing information and making clinical decisions. Failing students needed more support and more prompting from their supervisors to get on with their daily work compared to passing students. Krusen (2015) suggested that insufficient coping mechanisms and poor problem-solving were

factors that lead to occupational therapy students failing placements. Some of these attributes leading to failure appear to fall under the umbrella of emotional intelligence.

Clinical placements can be emotionally challenging especially when receiving feedback or when failing a placement. Students' emotional reactions when told they had failed "...varied from disappointment, defensiveness, disengagement, and/or retaliation. Two interviewees indicated that students cried when notified that their performance was unsatisfactory..." (James & Musselman, 2005, p.73). Algiraigri (2014) highlights that the feedback process can be emotionally depleting on the student, for example, when negative or unconstructive feedback is received from a supervisor. James and Musselman (2005) interviewed occupational therapy students, who had failed a placement, and their supervisors. McGregor's (2007) study of failing nursing students discussed the paralysing fear that emerged when students were informed they had made mistakes resulting in subsequent difficulties when making decisions. McGregor (2007, p.509) also discussed the toll on the clinical supervisor, stating "...nurse educators need to be fully present with students who are at risk of failing clinical courses in ways that foster personal and professional growth, rather than distance themselves. This is not easy work".

2.10 Conclusion

Based on this review of the literature, further research that addresses some of the gaps in the literature is essential.

Firstly, clinical placements are a compulsory, challenging, and for most students, rewarding part of the transition from student to practising therapist. Despite Clarke's (2010) research showing that workplace learning, or the clinical placements, are a fertile ground where EI skills can be developed, little is known about occupational therapy, physiotherapy, and speech pathology students' EI skills as they undertake their final clinical placements. Thus, there is an imperative to conduct more longitudinal research that reports the baseline and changing EI skills of Australian

therapy students. Secondly, no studies were found that interviewed university students about their EI skills. Thus, it is important that interviews are used to report the students' perspectives on the impact of clinical placements on their EI skills. Finally, no studies were found that used a mixed methods design to investigate the EI skills in healthcare professionals.

The next chapter describes the methods that were used in our study.

Chapter 3 METHODS

This chapter presents a full description of the mixed methods design used for this study. This detailed information is included in this chapter because comprehensive details of the methods have not been published in any of the journal articles in Chapter 4, because a single article that encapsulates the entirety of the quantitative and qualitative findings was not submitted for publication.

This study investigated how the emotional intelligence of a cohort of therapy students' changes over the final phase of their university program when the students are undertaking their final full-time clinical placements. The study then used interviews with therapy students to determine if, and how, the experiences during clinical placements influenced any changes in EI. In this chapter, the lead researcher refers to Nigel Gribble.

3.1 Study design

This study used a longitudinal, sequential explanatory, mixed methods design following procedures proposed by Creswell and Plano Clark (2011). Our study maintained a positivist epistemology throughout, as the final phase of the study used the qualitative findings to validate and explain the trends in the quantitative data, rather than to create new theoretical models.

The study drew from the worldview of pragmatism. Pragmatism is typically associated with mixed methods research (Creswell & Plano Clark, 2007). The focus of pragmatism research is on the "...question asked rather than the methods, and multiple methods of data collection inform the problems under study" (Creswell & Plano Clark, 2007, p.22). Pragmatism allows researchers to test hypotheses from numerous perspectives. Accordingly, this study used a positivist epistemology for the quantitative phase, as the researchers recognise that all phenomena can be reduced to empirical indicators representing one version of the truth (Teddlie & Tashakkori, 2009). For the qualitative phase, the study drew from transcendental realism with the belief "...that social phenomenon exist not only in the mind but also in the objective world..." (Miles & Huberman, 1994, p. 4). The researcher agrees that social phenomena (for our study,

the immersion of a therapy student into clinical placements) may have a significant influence over human behaviour (for our study, the therapy students' EI) because people construe social phenomena in familiar ways (Miles & Huberman, 1994). Thus, to understand the potential influence of clinical placements on EI, it is necessary to describe the experiences that students had in common during placements.

Mixed methods research has been defined as:

"... the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration (Johnson, Onwuegbuzie, & Turner, 2007, p.123).

Quantitative methods have some limitations. For example, when quantitative data is used by itself, the voices, thoughts, or the perceptions of the participants cannot be directly heard, and the context on which participants base their responses cannot be understood. Qualitative research also has weaknesses including the personal biases that the researcher brings when interpreting data and difficulty generalising findings to a larger group (Creswell & Plano Clark, 2011). Mixed methods allow the strengths of one approach to diminish the weaknesses of the other approach (Ivankova & Stick, 2007).

3.1.1 Sequential explanatory design

This study used a sequential explanatory design – a mixed methods design type proposed by Creswell and Plano Clark (2011). The sequential explanatory design involves two distinct phases of data collection and a third phase of integration and exploration of the two sets of data. A sequential explanatory design commences with the collection and subsequent analysis of quantitative data. Then, the qualitative data is collected and analysed to explain the quantitative results obtained in the first phase (Ivankova & Stick, 2007). The rationale for using this approach is that the “...quantitative data and their subsequent analysis provide a general understanding of

the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants' views in more depth." (Ivankova, Creswell, & Stick, 2006, p.5). Advantages of a sequential explanatory design include the straightforwardness of the design and the opportunity to explore the quantitative results in more depth by drawing on the qualitative results. The limitations of a sequential explanatory design include the extended time required to collect and the comprehensive analysis required to integrate both types of data (Ivankova et al., 2006). Figure 3.1 depicts a sequential explanatory design in its simplest form.

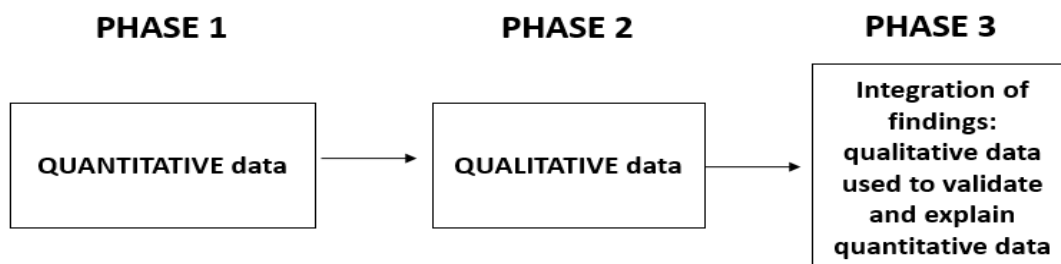


Figure 3.1: An overview of a sequential explanatory mixed methods design (adapted from Creswell and Plano Clark, 2011).

The sequential explanatory design was selected for our study as it allows the qualitative findings to give insights into the mechanisms that occur during clinical placements that the therapy students perceived to be influential in their baseline and the changes in EI scores over the final 16-month period of the students' university program. When using mixed methods Creswell and Plano Clark (2011) state that these three characteristics should be incorporated:

- use quantitative and qualitative approaches in a single study or multiple phases of the same study;
- collect and analyse rigorous and persuasive quantitative and qualitative data;
- mix, integrate, or link the two sets of data concurrently and allow one dataset to build on the other; or embed one data set into the other.

Our study adhered to these three characteristics in the following ways. Our study included quantitative and qualitative data collection in Phase 1 and Phase 2 respectively. We collected and analysed quantitative and qualitative data that are

related, and in the final phase, we integrated the data sets where we used the qualitative data to validate the quantitative findings.

3.1.2 Longitudinal design

Longitudinal research is defined “...as research emphasising the study of change and containing at minimum three repeated observations on at least one of the substantive constructs of interest” (Ployhart & Vandenberg, 2009, p. 97). The longitudinal design is useful in charting and analysing growth and development over time and for establishing causal relationships (Ployhart & Vandenberg, 2009). In our study, data were collected at three time points (before, during, and after the therapy students’ clinical placements) across the final 16-months of the students’ university program. The longitudinal design allowed for an initial set of EI scores to be collected which gave insight into the students’ baseline EI scores before therapy students commenced full-time placements. The subsequent second and third sets of data collection gave insights into the changing relationship between the dependent variable (EI scores) and the independent variables (the clinical placements) over the final stages of the students’ university program. The business students were the control group as they completed no clinical or work-based placements as a requirement of their university program.

3.1.3 Summary of the research design

Figure 3.2 provides a comprehensive summary of each of the three phases and includes the timing of each phase, the procedures used to collect data in each phase, the analysis tools, outcomes of the analysis, and the journal articles and chapters that were published from each set of analyses.

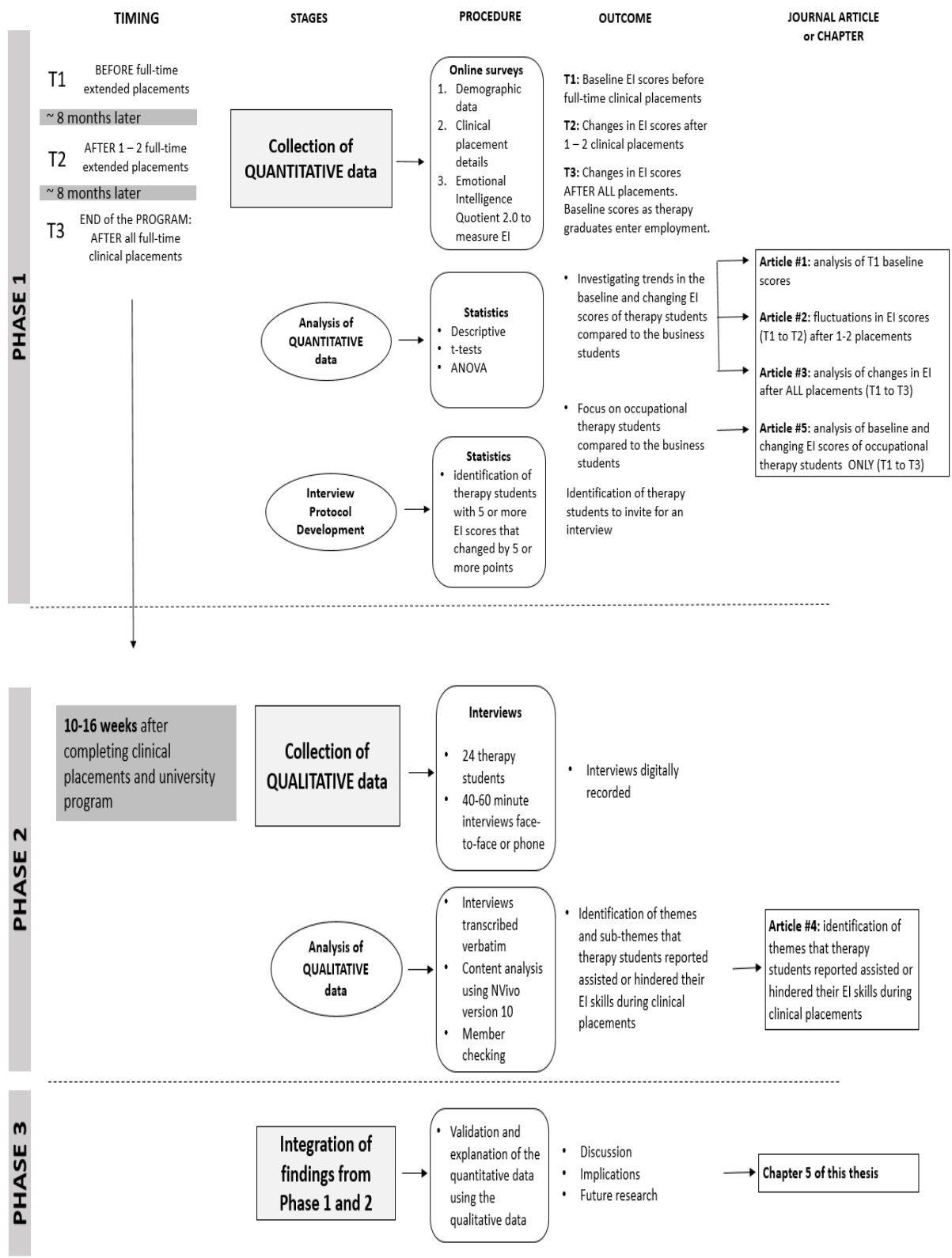


Figure 3.2: Detailed summary of the longitudinal, sequential explanatory, mixed methods design.

3.2 Ethical considerations

Approval to undertake the study was obtained from the Human Research Ethics Committee of Curtin University, ethics approval number HR68-2012 (Appendix A). Two ethics amendments were requested and approved. The amendments related to the timing of the questionnaires and incentives for participation. Written approval was attained to include students from the University of South Australia, Notre Dame University, and the University of Queensland. The lead researcher contacted the relevant person from each university via telephone and then via email. The email included the study proposal, Curtin Human Research Ethics Committee approval letter, participant information, and consent forms.

For the University of South Australia, Associate Professor Susan Hiller (Associate Head of School: Research) approved the inclusion of all therapy students. Susan Gilbert-Hunt, from the University of South Australia, emailed the relevant students requesting participation in the online questionnaire.

For the University of Queensland, Dr Louise Gustafsson (Head and Undergraduate Program Coordinator in Occupational Therapy) approved the inclusion of occupational therapy students via email. Debbie Fleming, from the University of Queensland, emailed the relevant OT students.

For Notre Dame University Professor Peter Hamer (Dean of School of Physiotherapy) approved the inclusion of physiotherapy therapy students via email. Professor Peter Hamer, from the University of Queensland, emailed the relevant physiotherapy students.

For Curtin University, Professor Angus Buchanan approved the inclusion of occupational therapy students; Professor Keith Hill approved the inclusion of physiotherapy students; and Professor Adrian North approved the inclusion of speech pathology students. Nigel Gribble emailed the speech pathology, physiotherapy, and business students. Dave Parsons emailed the occupational therapy physiotherapy students.

In accordance with the National Statement on Ethical Conduct in Human Research (The National Health and Medical Research Council, 2015), adequate information was provided to participants with regards to their consent and confidentiality. For each phase of data collection, students were given a Participant Information Sheet (Appendix B1 – B4). The Participant Information Sheet was written using plain English and informed potential participants of the research aims, the nature of their involvement, time commitment, contact details of the research team for questions, and that confidentiality would be maintained throughout the study. Participants were made aware that they could refuse to answer any question or may withdraw from the study at any time without any penalty, sanction or disadvantage. Consent was attained on the online survey website before answering the questions (Appendix C1). Consent to participate in the interviews was attained prior to the interviews in written form (Appendix C2). Audio recordings of the interviews were completed with the consent of participants).

During the quantitative data collection (Phase 1), students were still enrolled at their university. As such, they were informed that their participation (or choosing not to participate) would not influence their university studies or grades.

During the qualitative phase (Phase 2), interviews were conducted. Ensuring interviewees were protected from harm and their confidentiality protected was paramount. In sharing their stories and experiences from their clinical placements, interviewees chose to trust the researcher with sensitive information, and in doing so, put themselves in a vulnerable position. To safeguard this information, all identifying information, including student and supervisor names, healthcare sites, and suburbs, were removed from the transcripts before analysis commenced.

The lead researcher conducted all the interviews. At the time of the interviews, the lead researcher who conducted the interviews was the Director of Fieldwork in the School of Occupational Therapy at Curtin University – where some of the occupational therapy participants were recruited. The lead researcher had taught coursework courses and organised the clinical placements for some of the occupational therapy interviewees. As such, the recruitment of interviewees was deliberately designed to

occur after the students had completed their university studies and had their final results confirming their graduation and course completion. Thus, the lead researcher was not in a position of power at the time of the interviews.

3.3 Data storage

As per Curtin University's Research Data and Primary Materials Policy, raw and analysed data, interview recordings, and interview transcriptions were stored electronically in a dedicated research folder (called N:drive at Curtin University) that is password protected. Personal information, such as signed consent forms, were stored securely in a locked cupboard in the School of Occupational Therapy and Social Work at Curtin University. Hard copies of interview transcripts and notes were stored in a securely locked filing cabinet. Only the research team had access to the questionnaire data and interview transcripts. The research data will be kept for a minimum of seven years after the date of publication (Curtin University, 2017).

3.4 PHASE 1: quantitative data collection

The quantitative phase of the study investigated how EI changes over the final phase of occupational therapy, physiotherapy, and speech pathology students' university program when the students are undertaking their final full-time clinical placements. A control group of undergraduate business students, who were of the same relative age, was used as they undertake minimal or no workplace placements as an enforced component of their program.

Data for the quantitative phase was collected at three distinct time points – T1, T2, and T3.

3.4.1 Timeframes for the quantitative data collection at T1, T2, and T3

At T1, T2, and T3, therapy and business students completed online questionnaires.

The initial set of data collection – known as T1 - occurred in September/October of the third year of the therapy students' program. The business students were in the second year of their university program.

The second set of data – known as T2 - was collected approximately eight months later in April/May of the fourth year of the therapy students program. Between T1 and T2, therapy students were scheduled to complete one or more full-time, extended clinical placements of five weeks or longer. The business students were in the third year of their university program.

The final set of data – known as T3 - was collected approximately eight months later in November/December from the therapy students when they were in their fourth after the therapy students had completed all mandatory clinical placements near the end of their university program. The business students were in the third year and near the end of their university program.

Figure 3.3 presents a summary of the quantitative phase of data collection at T1, T2, and T3.

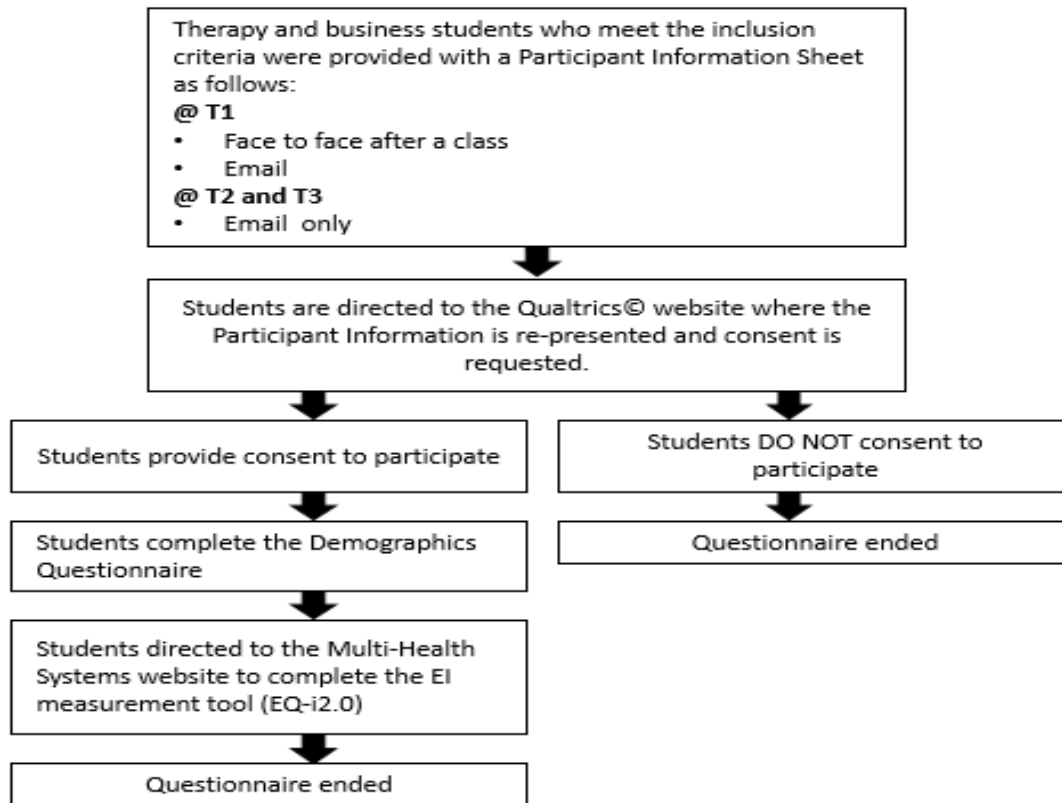


Figure 3.3: Summary of how students provided consent and completed the demographic and EI questionnaires at T1, T2, and T3.

3.4.2 Participant selection

Participants for Phase 1 were recruited from a convenience sample of undergraduate students enrolled at four Australian universities in occupational therapy, physiotherapy, and speech pathology; and business programs. A convenience sample is defined as a “...a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to a researcher” (Tabachnick & Fidell, 2001, p. 45).

The occupational therapy, physiotherapy, and speech pathology professions were selected as they tend to work closely together to deliver therapy services in a range of

healthcare settings. Students from the more medically oriented professions such as nursing, medical or radiology students, or the social policy professions such as social work were not included. In Australia, all three selected therapy professions must complete a four-year undergraduate university program. No post-graduate students were included as these students tend to be older with more life experience, are often enrolled in accelerated Masters programs, and likely to have higher EI scores given the tendency for EI to increase with age (Bar-On, 1997; Multi-Health Systems, 2011).

To maintain homogeneity, undergraduate therapy and business students were selected as they tend to be of similar age and progress through their university programs at similar rates. Because the longitudinal study would take place over the final 16-months of the university program: occupational therapy, physiotherapy, and speech pathology were in the third year of the program; while business students were in the second year of their program.

To control for the personal life events that might affect EI of the therapy students, a control group of students who do no clinical placements was included. Control groups are essential in studies that aim to evaluate an intervention as they minimise the effect of all variables except the independent variable, in our case the clinical placement (Kotsou et al., 2018). Undergraduate business students were selected as the control group as they generally undertake minimal or no workplace placements as an enforced component of their program, although work-integrated learning in business programs is becoming more popular (Elijido-Ten & Kloot, 2015). Undergraduate business programs in Australia are generally three years in length.

In order to recruit a comparable number of students from therapy and business, therapy students were recruited from multiple Australian universities. There were approximately 750 business students in the second-year commerce, economics, and human resource management programs at Curtin University. Thus, a similar number of therapy students were sought. As a result, therapy students were recruited from Curtin University, University of South Australia, University of Queensland, and Notre Dame University; where approximately 650 therapy students were enrolled in the third year of their four-year therapy program.

The inclusion criteria for therapy students at the initial data collection point was:

- Students were enrolled in the third year of the following undergraduate courses in either of the four participating universities:
 - Bachelor of Science (Occupational Therapy);
 - Bachelor of Science (Physiotherapy);
 - Bachelor of Science (Speech Pathology).
- Students were scheduled to participate in three or more full-time clinical placements, each of which was four or more weeks in length, in the third and fourth years of their university programs. Placements could be in any healthcare setting. Placements could be in an Australia metropolitan or rural location, or an international location.
- For our study, a full-time, extended clinical placement was defined as four days or more per week, and five weeks or more in length.

The inclusion criteria for business students at the initial data collection point was:

- students were enrolled in the second year of the following undergraduate courses at Curtin University:
 - Bachelor of Commerce majoring in commerce, economics, or human resource management.
- Students were scheduled to participate in no clinical or workplace placements as an obligatory part of the university program.

Participation in an extended EI based training program has been shown in multiple studies to improve EI scores (Clarke, 2005, 2009; Crombie, Lombard, & Noakes, 2011; Nelis et al., 2011, and many more). Thus, students were asked at T1, T2, and T3 about any previous EI training. Those students who had undertaken an EI training program of more than one day within the previous five years were excluded from the data analysis.

3.4.3 Recruitment

Before recruitment commenced, approval to contact the targeted student cohorts from each university was obtained from the relevant head of the school or department, as discussed previously.

At T1, program coordinators or clinical placement coordinators from each university were contacted by phone by the researcher to clarify the recruitment process.

Program coordinators or clinical placement coordinators initially met face-to-face with the targeted students. During this face-to-face session, students were given a paper-based Participant Information Sheet (see Appendix B1) and requested to complete the online questionnaires on their own computer devices. They were also informed they could complete the online questionnaires in their own time at home.

Over the next four weeks, program coordinators or clinical placement coordinators sent four reminder emails requesting students to complete the online questionnaires.

At T2 and T3, Nigel Gribble emailed the students who had completed the T1 online questionnaires; while Dave Parsons contacted the occupational therapy students from Curtin University. Participants were emailed information about how to participate, and they completed the online questionnaire in their own time. At T2 and T3, the online questionnaires were available for approximately five weeks. At T2 and T3, students received four reminder emails that requested their continued participation in the study.

As recommended by Deutskens, De Ruyter, Wetzels, and Oosterveld (2004) a monetary incentive via a lottery was offered for each of the three sets of data collection. Deutskens et al. (2004) revealed that monetary incentives could increase participation rates for online questionnaires, especially shorter questionnaires. Curtin University's Human Research and Ethics Committee approved the lottery. The lottery adhered to guidelines stipulated in the National Statement of Ethical Conduct in Human Research (2015).

3.4.4 Measurement tools

Phase 1 data were collected online via two separate questionnaires. Online questionnaires were selected over paper-based formats because the online questionnaires allowed data to be collected from multiple participants in an efficient, low-cost format (Tabachnick & Fidell, 2001). The online questionnaires allowed participants to complete the measurement tools in their own time and at their own pace, which ensured they did not feel rushed when completing the EI measurement tool.

The email and paper-based documents used for recruitment initially directed students to a Qualtrics© website where they were again shown the Participant Information Sheet. Students were then given the opportunity to either consent to participate or decline to participate in the study (see Appendix C1).

3.4.5 Collection of demographic and clinical placement data

At T1, the first part of the questionnaire gathered demographic and clinical placement data (Demographics Questionnaire) that included; age, gender, course and year of study, details of any EI training completed, and length of clinical placements completed up to that point in time. At T2 and T3, questions were the same as T1, with additional questions about the type and length of clinical placements being included. Appendix D1 and D2 contain the questionnaires used at T1, T2, and T3.

To ensure the Demographics Questionnaire was user-friendly the tool was pilot-tested. Fifteen people, including fellow staff members of the principal researcher and final year Curtin therapy students (who were not potential participants) tested the questionnaire. Feedback was gathered on the readability, comprehension, and format. This process resulted in minor changes to wording and format.

3.4.6 Collection of emotional intelligence data

Once the Demographics Questionnaire was completed, the Qualtrics© website directed the students to the Multi-Health Systems website (<https://tap.mhs.com/EQi20.aspx>) where they then completed the Emotional Quotient Inventory 2.0 (EQ-i^{2.0}) online which measures emotional intelligence. Multi-Health Systems owns the EQ-i^{2.0} and allows access to the full questionnaire and scoring via its website. Multi-Health Systems charged US\$6 per EQ-i^{2.0} administration at T1, T2, and T3 which gave the researcher the raw data that was downloadable into an Excel spreadsheet. When the EQ-i^{2.0} is used for coaching and mentoring purposes Multi-Health Systems charges approximately US\$70 per administration which includes a comprehensive 20+ page report.

3.4.6.1 Measurement of emotional intelligence using the Emotional Quotient Inventory 2.0

The Model of Emotional Intelligence was selected for this study as it encompasses a range of skills considered critical for therapists who work with patients in emotionally vulnerable situations (Larin & Wessel, 2015; Stein & Book, 2011). To measure EI, Bar-on (1997) created the Emotional Quotient Inventory (EQ-i). In 2011, Multi-Health Systems revised the model and measurement tool, renaming the tool the EQ-i^{2.0}. The revised version preserved the integrity of Bar-On's original EQ-i but revised and renamed the Composites and Subscales. The revised version ensured that each item on the questionnaire only appears on one subscale and that subscales did not contain multiple constructs. In addition, double negatives were eliminated from the items, language was updated and clarified, the norm sample was updated and diversified, and the interpersonal and intrapersonal scales were renamed to avoid confusion (Multi-Health Systems, 2011).

The EQ-i^{2.0} is a 133 item self-report tool. Each question is answered using a five-point scale (Multi-Health Systems, 2011) which is noted below.

- 1 = Very Seldom or Not True of Me;
- 2 = Seldom True of Me;
- 3 = Sometimes True of Me;
- 4 = Often True of Me;
- 5 = Very Often True of Me or True of Me.

The 133 questions are sequenced in an order that presents the least threatening items initially to increase rapport with participants, with the remaining items being randomly scattered throughout the remainder of the questionnaire. Sample questions from the EQ-i^{2.0} are in Appendix E. For copyright reasons, the full set of EQ-i^{2.0} questions cannot be published (Multi-Health Systems, 2011). The online EQ-i^{2.0} takes 20 or more minutes to complete.

The EQ-i^{2.0} was completed online and was scored by Multi-Health Systems with results provided to the researcher via a downloadable Excel spreadsheet format at T1, T2, and T3. The EQ-i^{2.0} calculated 22 scores for each participant: a Total EI score, five Composite scores, 15 Subscale scores, and the Happiness score. The EQ-i^{2.0} 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 (Multi-Health Systems, 2011). The highest score that is possible on each Composite and Subscale is 135 with the lowest score being zero (Multi-Health Systems, 2012). Happiness is included in the Model of Emotional Intelligence as a well-being indicator because research has reported that happiness is higher in people with higher EI. The subsequent results of our study do not include the happiness scores, as happiness is an outcome of higher EI, not a contributing factor (Multi-Health Systems, 2011).

The instrument is able to detect test sabotaging including a Positive and Negative Impression Index, and an Inconsistency Index (Multi-Health Systems, 2011). Individuals who answer self-report tools may choose to answer questions with a positive or negative intention (Zeidner et al., 2010). The Positive and Negative Impression Indices

that were integrated within the EQ-i^{2.0} were validated using a standard between-subjects simulation study during the normative phase of the tool's development. Inconsistent answers in self-report tools occur when a participant rates similar questions in dissimilar or opposite ways. The EQ-i^{2.0} has an in-built Inconsistency Index which detects inconsistent responses from participants (Multi-Health Systems, 2011).

The normative data for the EQ-i^{2.0} was created by using data originally collected from 10,000 North Americans participants with the final normative sample including 4000 participants (Multi-Health Systems, 2011). Gender and age norms were created based on the normative sample. The participants were then assigned to five age ranges (i.e., 18-29, 30-39, 40-49, 50-59, and 60+ years) with equal numbers of females and males in each age range. Skewness and kurtosis of each range were close to zero with skewness ranging from -0.93 to 0.15 and kurtosis from -0.17 to 0.77. Mean Total EI score for subjects in the 18 to 29-year-old range (i.e., the age range for the majority of students in our study) was 97.0 (SD=14.9). The means for the five Composite scores of 18 to 29-year-old range are: self-expression (M =96.5, SD = 14.9), self-perception (M =98.6, SD = 14.9), interpersonal skills (M=98.3, SD = 14.8), stress management (M =97.2, SD = 14.9), and decision-making (M =96.2, SD = 14.8). Analysing the normative sample for gender differences showed no significant difference in the EI scores between males and females. Small to medium size effects were found in some of the Subscales (e.g., females scored higher on the Empathy Subscale than males [$d = -0.49$]) (Multi-Health Systems, 2011). Small differences in age effects were found in the normative sample. Some EI scores increased with age (e.g., Total EI, self-regard, interpersonal, interpersonal relationships, empathy, stress management) while other scales increased and then stabilised in the 40 to 49 year age range (self-expression, independence, problem-solving, flexibility, stress tolerance). Differences were identified in subjects with a high school or less education (Total EI score = 98.1; SD = 15.5) compared to those with post-secondary education (Total EI score = 103.2; SD = 14.8).

The Australian normative data for the EQ-i^{2.0} was used during the data analysis of our study. Australian normative data for the EQ-i^{2.0} was published by Multi-Health Systems in 2012. The EQ-i^{2.0} was used in 2011 to gather normative data for the Australian

population norm sample (N = 1,250). The Australian population norm sample was collected across the same five age ranges as the original North American normative sample with each group being evenly proportioned by gender within each age interval. The sample included participants from across Australia and a variety of education levels. Eighty-two percent were employed, 3.8% were unemployed, 12.1% were retired, and 2.2% indicated "other." The mean Total EI scores for males (M= 99.7, SD = 14.2) was slightly lower than females (M= 100.3, SD = 14.2). Of interest to this study was the mean Total EI for the younger age group, 18 to 29-year-old (M= 93, SD = 14.3) which was significantly lower than the older group, 50+ (M= 101.9, SD = 14.2).

Internal consistency of the EQ-i^{2.0} was measured using Cronbach's alpha (Multi-Health Systems, 2011). The Cronbach's alpha for Total EI was 0.97. The Cronbach's alpha for the five Composite scales ranged from 0.88 to 0.93. The 15 Subscales ranged from 0.77 to 0.93 with only *assertiveness* and *impulse control* being the only two items with a Cronbach's alpha below 0.8, but this is still considered in the acceptable range (Multi-Health Systems, 2011). Appendix F presents the internal consistency values from the normative phase of the development for the EQ-i^{2.0}.

Test-retest reliability for Total EI was high ($r = 0.92$) for subjects with two to four weeks between tests, and lower ($r = 0.81$) when tested eight weeks apart. To track changes in EI, the EQ-i^{2.0} manual (Multi-Health Systems, 2011) recommends that participants retake the questionnaire at time-points at least 12 weeks apart.

3.4.7 Data analysis

The statistical analysis of the Phase 1 data is described in the published journal articles (Chapter 4). Analysis of the data occurred using the Null Hypotheses that were created from the research questions in Section 1.3. The statistical analysis of the T1 data is explained in Paper 1 titled 'Differences in the emotional intelligence between undergraduate therapy and business students and the population norms' published in the Asia-Pacific Journal of Co-operative Education (Gribble, Ladyshevsky, & Parsons, 2017a). The statistical analysis of the T2 data and the changes from T1 to T2 is

explained in Paper 2 titled 'Fluctuations in the emotional intelligence of therapy students during clinical placements: Implications for educators, supervisors, and students' published in Journal of Interprofessional Care (Gribble, Ladyshevsky, & Parsons, 2017b). The statistical analysis of the T3 data and the longitudinal changes from T1 to T3 are explained in Paper 3 titled 'The impact of clinical placements on the emotional intelligence of occupational therapy, physiotherapy, speech pathology, and business students: a longitudinal study'. The content analysis of the interviews is described in Paper 4 and in comprehensive detail in section 3.5.4 in this thesis. The statistical analysis of the T1 to T3 data for only the occupational therapy students are explained in Paper 5 titled 'Changes in the emotional intelligence of occupational therapy students during full-time fieldwork placements: a longitudinal study' published in the British Journal of Occupational Therapy (Gribble, Ladyshevsky, & Parsons, 2018). It was decided to extract the occupational therapy student data and publish in a profession-specific journal as this was the largest sub-group of students. Separate articles using the speech pathology and physiotherapy student data are being considered but are not a requirement of this thesis.

Footnote: As this research was a longitudinal study, papers were generated as data was received from the respondents at T1, T2, and T3. This created some sample size variations in Paper 1, 2, and 3. For example, students who registered to participate in the study at T1 were invited to participate again at T2 and again at T3. However, more students elected to participate at T3 (n= 142) than T2 (n = 109) possibly due to the fact that students had finished their university program at T3 and had more time on their hands. Also, there is a variation in T1 sample size reported in Paper 1, 2, and 3 which occurred because of the data cleansing that occurred before the data analysis for Paper 2 and again before Paper 3. This data cleansing resulted in some students being excluded for Paper 2 (i.e., because of missing data), while others were included for Paper 3 (because we could link their Student ID numbers at T1 and T3). The analyses that were conducted on each of the manuscripts and thesis overall used the sample size numbers at these distinct points of the study. The statistical procedures delineated in this thesis and manuscripts were applied accordingly to the data set at these distinct points. The conclusions of the paper and the thesis remain the same.

3.5 PHASE 2: qualitative data collection

Phase 2 of the study used semi-structured interviews. Semi-structured interviews allowed the researcher to attempt to understand the world from the interviewees' point of view in order to comprehend the meaning of their experiences (Kvale & Brinkmann, 2009). "Listening and acting on the students' voice is a unique way to bring students into the community of practice—and to engage with them as future participants and shapers of that professional community" (Barradell, Peseta, & Barrie, 2017, p.3). In our case, the interviews were used to understand if, and how, the therapy student perceived their clinical placements influenced their reported increases or decreases in EI scores in four or five EI Composites and Subscales.

3.5.1 Participant selection for interviews

Interviewees for Phase 2, were recruited using purposive sampling. The inclusion criteria for subjects to be invited to an interview were:

- Only therapy students were invited.
- Therapy students must have:
 - completed their university studies, and
 - met the inclusion criteria for Phase 1, and
 - completed all three questionnaires at T1, T2, and T3, and
 - participated in three or more full-time clinical placements of five or more weeks. The placements could be in an Australian metropolitan, rural or an international location, and
 - had a positive or negative change in four or more EI scores (i.e., Composite and/or Subscale scores; not including Total EI score) of eight (8) points or more; calculated by subtracting the T1 score from the T3 score.

Students were excluded from the interviews for the following reasons:

- Business students were excluded because they had not completed any clinical or workplace placements;

- Therapy students who had completed an EI training program of more than one day within the previous five years;
- The EQ-i^{2.0} calculates an Inconsistency Index, Positive Impression and Negative Impression score with therapy students who exceeded the suggested parameters being excluded.

3.5.2 Recruitment of interviewees

Participants (n=71) who met the inclusion criteria for Phase 2 were emailed by the researcher, with three follow-up emails. Because of the time needed to analyse the Phase 1 data and the Christmas and summer holiday period in Australia, the final interviews were completed in February to April in the year following graduation, which occurred in December, some 10 to 16 weeks after the final questionnaire was completed in Phase 1. Ultimately, 24 participants agreed to be interviewed. Reasons for the relatively low response rate (34%) may have been that participants had completed their university program and had disengaged from the university email system or no longer wanted to participate in the research.

After the interview, participants were given AUD\$30 to cover costs such as time, travelling, parking at the university, and phone calls. The reimbursement was approved by Curtin University's Human Research and Ethics Committee and adhered to guidelines stipulated in the National Statement of Ethical Conduct in Human Research (2015).

3.5.3 Interviews

The principal researcher conducted all 24 interviews at a mutually convenient time and location. Interviews were conducted by the researcher either face-to-face (n=18) or over the phone (n=6). Interviews ranged from 25 to 60 minutes. Interviews were recorded on two digital recorders.

The purpose of each interview was to validate that each student perceived that the changes in their personal EI scores between T1 and T3 was accurate and also to determine if the student perceived that the changes in EI scores between T1 and T3 were due to their clinical placements, or personal life events, or a combination of the placements and personal life events. If students perceived that clinical placements were a crucial factor in the changing EI scores, then the interviewee asked students to describe any experiences that occurred during placements that they perceived impacted the change in their EI scores.

Each semi-structured interview followed the following steps:

1. The researcher introduced himself to the interviewee.
2. The interviewee was provided with the Participant Information Sheet (Appendix B4), which described Phase 2 of the study.
3. The researcher then provided verbal information on how the interview data would be used. The researcher assured the interviewee that their confidentiality would be protected by removing all identifying information from their transcripts, including their names, names of supervisors, names of sites, names of other students.
4. Participants were encouraged to ask any questions before signing the Consent Form (Appendix C2).
5. Interviewees were provided with a brief definition of EI and an overview of the Composites and Subscales that encompass the Model of Emotional Intelligence.
6. Interviewees were then given a copy of their EI scores (see a deidentified EI scoresheet sample in Appendix G). Before each interview, the researcher had identified four to six EI scores for each interviewee that had changed (increased or decreased by eight (8) or more points) between T1 and T3.
 - **NB:** For participants interviewed over the phone, Participant Information Sheet, EI information, and changes in EI scores were sent via email before the interview. The interviewer sighted a signed Consent Form before the interviews commenced.

7. For the first EI Composite or Subscale score that had changed:
 - a. The interviewer explained that the selected EI score (e.g., empathy) had increased or decreased.
 - b. The interviewer then gave the interviewee a written definition of the Composite or Subscale skill from the Emotional Quotient Inventory 2.0 User Manual (Multi-Health Systems, 2011). The interviewee read the definition.
 - c. The interviewee was then asked, “Do you perceive that your (EI Composite or Subscale, e.g., empathy) has increased (or decreased) over the last 16 months?”
 - d. If the interviewee agreed that the change was authentic, the researcher asked, “Do you think the change (in EI Composite or Subscale, e.g., empathy) was due to your clinical placements, personal factors or a combination of the clinical placements and personal factors?”
 - If the interviewee disagreed that the change was authentic, then the next EI score that had changed was discussed.
 - e. If the interviewee responded that the change in EI score was due to clinical placements, they were asked, “Describe what occurred during your clinical placements that may have influenced this change?”
 - If the interviewee reported that the change was due to personal factors or a combination of the clinical placements and personal factors, then the next EI score that had changed was discussed.
 - f. Probing questions were then asked to explore the perceived reasons for the change in EI score, such as “Expand on that” or “Tell me more” or “Did anything else occur during placements that influenced this change in EI score?”
8. For each subsequent EI score that changed, Steps 7a to 7e were repeated.
9. After the interview, participants were given AUD\$30 to cover costs that could have include parking, travel, phone expenses associated with the time taken to attend the interview.

During the interview, the researcher made field notes during and following each interview. Field notes have been purported to be a way of “...describing experiences

and observations the researcher has made while participating in an intense and involved manner” (Barradell et al., 2017, p. 6). The notes included the following information: EI scores discussed; whether the interviewee agreed the change in EI score felt authentic; if they reported that clinical placements or personal factors influenced the change in EI score; and the facets of placements that interviewees’ perceived influenced the change in EI score.

3.5.4 Interview analysis

Interview recordings were transcribed verbatim by a professional transcription service and entered into the QSR International’s NVivo 10 Software package for analysis (NVivo, 2012).

Content analysis of the interviews followed an inductive category development approach as described by Hsieh and Shannon (2005). The researcher checked the transcripts against the recording for accuracy. Using NVivo10, each transcription was read to gain a sense of the whole before deriving codes. Open coding occurred by grouping similar codes into sub-themes and labelling them. Finally, the sub-themes were congregated to create the main themes.

A summative approach was then used by counting the frequency of themes and quotations used to create each theme and sub-theme from the interview transcriptions. According to Plano Clark et al. (2015), a longitudinal, sequential explanatory, mixed methods study uses qualitative data collected at the final data collection point to examine participants’ recollections of what was measured quantitatively. Thus, the number of students reporting each theme indicated the strength of each theme (these results are reported in Table 1 of Paper 4).

To ensure the rigour of qualitative methods and the content analysis of the interview transcriptions our study used the trustworthiness criteria: dependability, credibility, transferability, and confirmability (Guba & Lincoln, 1982; Shenton, 2004).

Credibility asks the researcher the question, “How congruent are the findings with reality?” (Shenton, 2004, p.64). Shenton (2004) describes an array of criteria that researchers can use to build credibility. Of these criteria, our study utilised the following: use of research methods that are well established in qualitative investigation, familiarity with the culture of participating organisations, tactics to help ensure honesty in informants, triangulation, and member checking. The use of semi-structured interviews is a proven technique in qualitative methods (Kvale & Brinkmann, 2009). The lead researcher who conducted all 24 interviews had 12 years’ experience as the Director of Fieldwork with occupational therapy students and thus had extensive experience of the context of clinical placements for students. As such, the lead researcher might hold some pre-conceived ideas about how placements might influence EI skills. To minimise this potential bias, triangulation was a critical inclusion when undertaking the content analysis. Triangulation firstly used an occupational therapist (Kiah Evans), who is an experienced researcher and has many years of experience supervising therapy students, to review the tentative categorisations. Ms Evans was randomly assigned 25% of the interview transcriptions. Ms Evans and the researcher met on three occasions to fine-tune the categorisations. Member checking followed whereby six (25%) of the original interviewees were asked to review the categorisations. Two questions were posed: “Do you recognise the categorisations from your clinical placements?” and; “Do you find the descriptions illustrative of the categorisations?” All interviewees accepted the categorisations with no changes.

Transferability “...is concerned with the extent to which the findings of one study can be applied to other situations” (Shenton, 2004, p. 69). The 24 interviewees discussed their experiences from their multiple clinical placements that took place in many different healthcare settings over a similar period. The peak accreditation bodies in Australia for three therapy professions set criteria about the types and lengths of clinical placements that the university programs must adhere. All 24 interviewees undertook full-time placements that were five weeks or longer. Their placements had occurred in an array of sites including hospitals, private practice, schools, not for profit organisations, as well as in metropolitan, rural, and international locations. All students were allocated a supervisor (or supervisors) who facilitated the placement and

provided role modelling, feedback, and assessed their overall performance. Students worked with patients and in healthcare teams where they needed to show competence in an array of practical, interpersonal, and clinical reasoning skills. A more detailed description of the placements of the interviewees is provided in the journal article titled 'Strategies for interprofessional facilitators and clinical supervisors that may enhance the emotional intelligence of therapy students' published in *Journal of Interprofessional Care* (Gribble, Ladyshevsky, & Parsons, 2017c). Thus, the placements that the 24 interviewees completed were relatively similar to the placements that all speech pathology, occupational therapy, and physiotherapy students complete across Australia meaning that the content analysis of the interviews is transferable to other therapy students who have completed placements in Australia.

Dependability "...employs techniques to show that, if the work were repeated, in the same context, with the same methods and with the same participants, similar results would be obtained" (Shenton, 2004, p. 71). This chapter provides comprehensive, step-by-step procedures of how the interviewees were selected, the semi-structured interviews, and the content analysis which should be able to guide future researchers who might want to replicate the methods.

Confirmability asks the researcher to take steps to "...ensure as far as possible that the work's findings are the result of the experiences and ideas of the informants, rather than the characteristics and preferences of the researcher" (Shenton, 2004, p. 72). The lead interviewer's extensive experience working with students undertaking clinical placements was advantageous to understanding the context and assisted in asking delving questions. However, the same experience could also bias the findings of the content analysis because of preconceived idea on how placements influence and impact students. As such, the triangulation and member checking discussed above were essential steps to minimise this potential bias. Miles and Huberman (1994) propose that a key to confirmability is the extent to which the researcher is open about their personal predispositions. Thus, being honest about the subjectivity that a researcher brings to qualitative research is essential. The following presents the lead researcher's predispositions (presented in the first person).

At the time of the interviews, I was the Director of Fieldwork in the School of Occupational Therapy at Curtin University – where some of the occupational therapy participants were recruited. I had taught coursework courses and organised the clinical placements for some of the occupational therapy interviewees. As such, the recruitment of interviewees was deliberately designed to occur after the students had completed their university studies and had their final results confirming their program completion. Thus, I was not in a position of power at the time of the interviews. It was hoped that the change in the relationship and the 10 to 16 weeks that had passed after finishing their university studies, allowed the students to answer the interview questions honestly and genuinely. With the students I knew, I ensured they were clear that I was in the role as researcher and I remained neutral and objective. I also needed to be aware that interviewees may have an acquiescence bias where an interviewee may tend to agree or be positive about whatever the interviewer asks (Gomm, 2009). To diminish these potential biases, when interviewing the students I followed the semi-structured interview and prompts closely. As suggested by Kvale and Brinkmann (2009), before and during the interviews, I needed to be cognizant and reflective of the differences between my lifeworld and those of the interviewees. I have worked as an occupational therapist and educator of occupational therapy students for 20 years, while the interviewees were at the beginning of their career as a therapist. For many interviewees, their recently completed placements might have been the first time they had worked full-time, worked in a healthcare team, or had to deal with people in emotionally vulnerable situations. I needed to realise that I might have a confirmation bias where a researcher forms a belief and uses interviewees' words to confirm that belief. Confirmation bias can also influence analysis, with researchers tending to remember quotes and ideas that support their interpretation (Gomm, 2009). I needed to be aware that I had been the Director of Fieldwork for the occupational therapy fieldwork program for 12 years and had spent much time on site with supervisors and students. I needed to be aware that in creating and developing the methods used in this study, I had read a large quantity of literature and previous research that may have influenced my interpretation of the interview data. For example, I was aware of

the significant influence that the supervisory environment can have on a student's clinical performance. Thus, I presumed that a supervisor might have an impact on a student's EI skills. I was also aware that reflection is a critical component of a student developing their clinical reasoning and practical skills. Thus, I had presumed that it was feasible that reflection on EI skills may also influence a student's EI skills. As such, I needed to put this information aside during the interviews and data analysis.

3.6 PHASE 3: integration of the findings from Phase 1 and 2

The final phase of a sequential explanatory mixed methods design integrated the findings from the quantitative and qualitative phases (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). Phase 3 used the qualitative findings from Phase 2 to validate and explain the trends in the quantitative findings of EI attained from the questionnaire in Phase 1. The rationale for using this approach is that the “...quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants’ views in more depth” (Ivankova, Creswell, & Stick, 2006, p.5). Integration of the quantitative and qualitative phases can occur through either a narrative, data transformation, or joint display technique (Fetters, Curry, & Creswell, 2013). The findings were integrated using a narrative technique with a weaving approach. “When integrating through narrative, researchers describe the qualitative and quantitative findings in a single or series of reports...The weaving approach involves writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis” (Fetters, Curry, & Creswell, 2013, p.2142). The results of the integration are presented in Chapter 5 of this thesis.

3.7 Conclusion

This chapter described the quantitative and qualitative phases of this study and the rationale for the choice of the methods and measurement tools. The first three chapters of this thesis have placed the research study within the context of the existing literature regarding EI, clinical placements, and the influence that placements might have on EI skills of therapy students.

The next chapter presents the five journal articles that have been published.

Chapter 4 JOURNAL ARTICLES

4.1 Overview of the journal articles

This chapter contains original copies of the five manuscripts that have been published. Permission has been granted from the editor of each journal to reproduce the journal article in this thesis.

Paper 1, titled 'Differences in the emotional intelligence between undergraduate therapy and business students and the population norms', analyses and discusses the T1 baseline data of the therapy and business students – before the therapy students commenced their full-time, extended clinical placements.

Paper 2, titled 'Fluctuations in the emotional intelligence of therapy students during clinical placements: Implications for educators, supervisors, and students', analyses and discusses the T2 data of the therapy and business students and the changes in EI from T1 to T2 – the time period when the therapy students completed their initial set of clinical placements.

Paper 3, titled 'The impact of clinical placements on the emotional intelligence of occupational therapy, physiotherapy, speech pathology, and business students: a longitudinal study' analysed the T3 data and the changes in EI from T1 to T3 of the therapy and business students.

Paper 4, titled 'Strategies for interprofessional facilitators and clinical supervisors that may enhance the emotional intelligence of therapy students', presents the content analysis of the interviews and provides recommendations for supervisors, university educators, and employers of therapy graduates.

Paper 5, titled 'Changes in the emotional intelligence of occupational therapy students during full-time fieldwork placements: a longitudinal study', analyses and discusses the T1 and T3 data and changes in EI from T1 to T3 for only the occupational therapy students compared to the business students.

Paper 1:

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

Gribble, N., Ladyshevsky, R. K., & Parsons, R. (2017). Differences in the emotional intelligence between undergraduate therapy and business students and the population norms. *Asia-Pacific Journal of Cooperative Education*, 18(3), 225–242. Retrieved from https://www.ijwil.org/files/APJCE_18_3_225_242.pdf

This is an Accepted Manuscript of an article published in the *Asia-Pacific Journal of Cooperative Education*, available online: https://www.ijwil.org/files/APJCE_18_3_225_242.pdf

NB: the *Asia-Pacific Journal of Cooperative Education* changed its names to *International Journal of Work-Integrated Learning* in January 2018.

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 underdeveloped 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 & Saatchioglou, 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 (Artess, 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 & Saatcioglu, 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

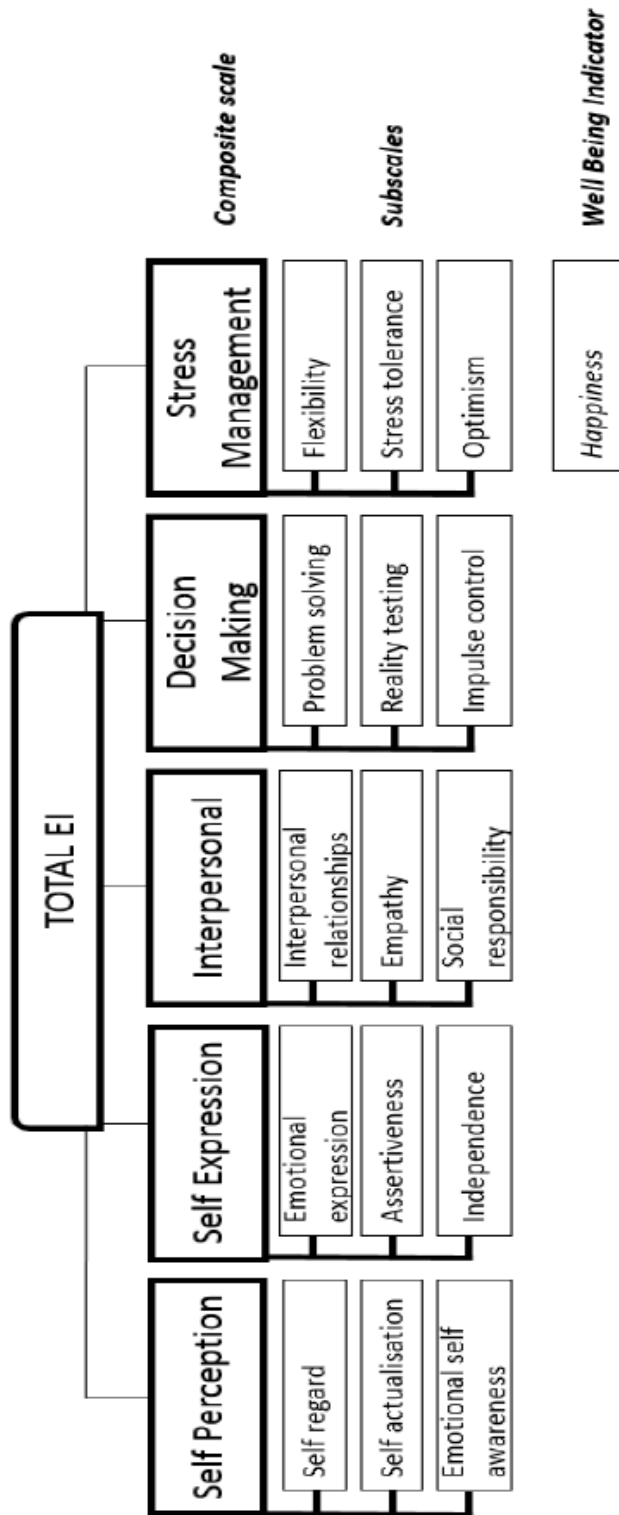


FIGURE 1: Model of Emotional-Social Intelligence showing the composite, subscales and well-being indicator (adapted from Multi-Health Systems, 2011)

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 scales 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	108	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	45-127	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		All therapy students		Comparison with Australian EI norms Business students		All therapy students compared to business students	
	Mean	SD	Mean	SD	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

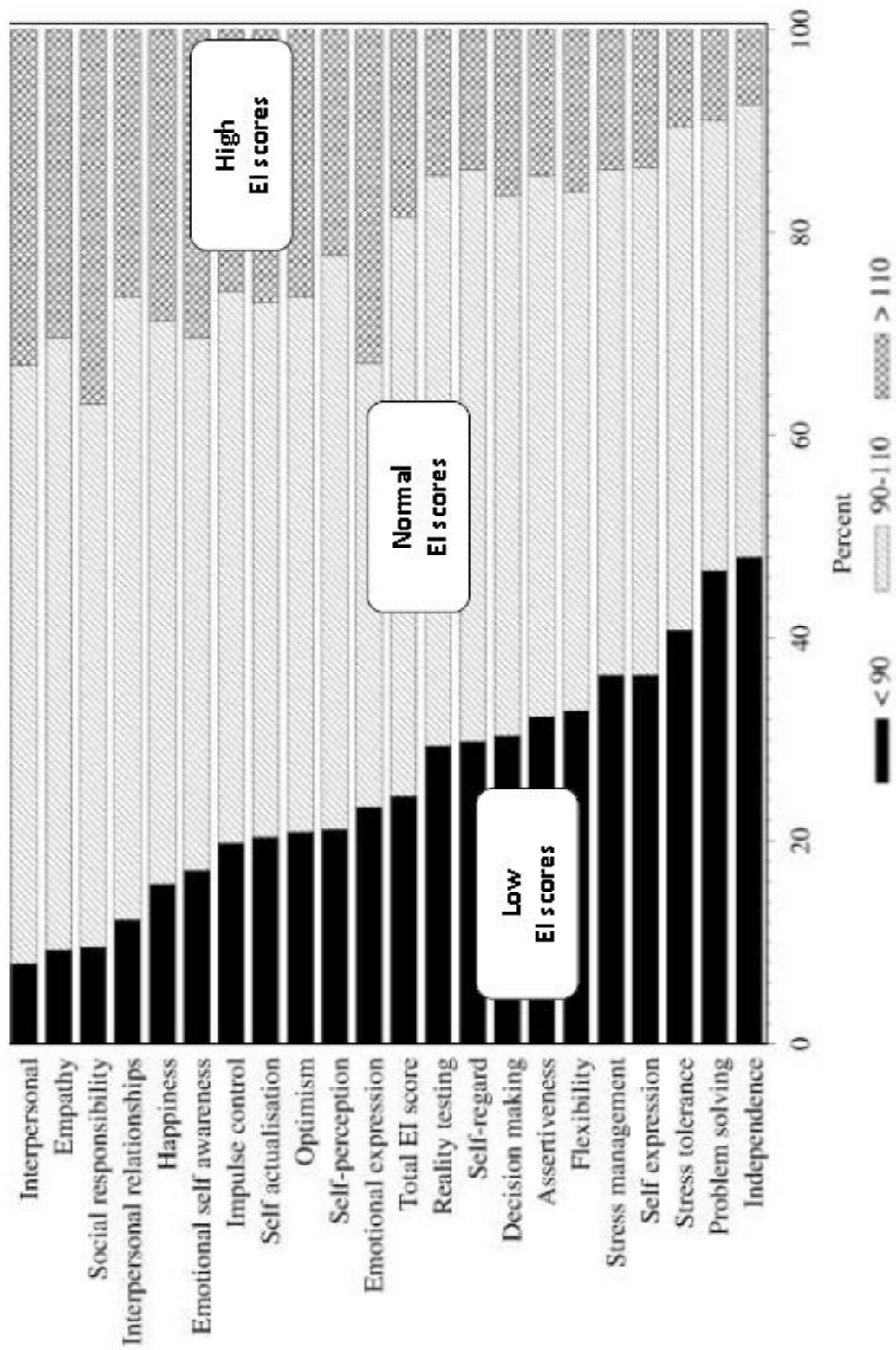


FIGURE 2: Percentage of all therapy students with EI scores considered low (≤ 90), normal (90-110) and high (> 110)

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, & Nezelek, 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 & Saatcioglu, 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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Paper 2:

Fluctuations in the emotional intelligence of therapy students during clinical placements: Implication for educators, supervisors, and students

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ORIGINAL ARTICLE

Fluctuations in the emotional intelligence of therapy students during clinical placements: Implication for educators, supervisors, and students

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ABSTRACT

This study investigated the changes in emotional intelligence (EI) of occupational therapy, physiotherapy, and speech pathology students (therapy students). Clinical placements have multiple benefits including the development of interprofessional skills, enhancing practice skills and interpersonal skills. Higher EI competencies have been shown to have a positive impact on patient outcomes, teamwork skills, dealing with stress, and patient satisfaction. Data for this study were collected at two time points: before third-year therapy students commenced extended clinical placements (T1 with 261 students) and approximately 7 months later after students had completed one or more clinical placements (T2 with 109 students). EI was measured using the Emotional Quotient Inventory 2.0 (EQ-i^{2.0}). Only one EI score, assertiveness, demonstrated a significant decline. No EI score showed a significant increase. A third or more of the students showed increases of five points or more in self-actualisation, emotional expression, independence, reality testing and optimism. However, of concern were the five EI scores where therapy students' EI scores decreased by more than five points: assertiveness (where 38% of students declined), problem solving (37%), impulse control (35%), self-actualisation (35%), and stress tolerance (33%). With EI scores declining for some students during clinical placements, there are implications for clinical supervisors and interprofessional facilitators as clinical performance may decline concurrently. There is a range of potential reasons that clinical placements could negatively influence the EI competencies of a therapy student, including poor clinical supervision, conflict between a student, and supervisor and failing a clinical placement. The research suggests that interprofessional facilitators and university educators might consider students undertaking EI tests before clinical placements.

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Clinical placements; clinical supervisors; emotional intelligence; interprofessional facilitators; therapy students

Introduction

This study investigated the impact of clinical placements on the emotional intelligence (EI) of therapy students in the final year of their University programme. Clinical placements for occupational therapy, physiotherapy, and speech pathology students (therapy students) are a critical component in transitioning from student to being a professionally competent therapist. Holmes et al. (2010) argue that occupational therapists need adequate knowledge, clinical reasoning skills, professional behaviours, and specific values to become clinically competent. Further, these facets of practice can only be fully developed in clinical placements. Clinical placements have a multitude of positive benefits for therapy students including the development of a range of personal and professional attributes. However, minimal research has been undertaken on the influence of clinical placements on therapy students EI and the implications for clinical supervisors and interprofessional placement facilitators.

Background

Clinical placements are mandatory for occupational therapy, physiotherapy and speech pathology students (Australian Physiotherapy Council, 2011; Speech Pathology Australia,

2010; World Federation of Occupational Therapists, 2002). Clinical placements during occupational therapy, physiotherapy and speech pathology programmes account for nearly one-third of the total hours in the university programme with many placements for these therapy students being undertaken in an interprofessional learning environment (Brewer & Stewart-Wynne, 2013). Clinical placements for therapy students generally occur in all years of the course, with full-time, longer placements occurring in the final stages of the programme. The array of positive benefits in undertaking clinical placements are well documented (Billett, 2011; Cooper, Orrell, & Bowden, 2010). A large study of the impact of work integrated learning placements (WIL) involving 1499 Australian university students concluded that, "...WIL placements do have an impact on student work-readiness and contribute to employability capabilities..." compared to students who do no workplace placements (Smith, Ferns, & Russell, 2014, p. 6). Clinical placements have been shown to provide therapy students with opportunities to become autonomous, independent therapists (Thomas, Penman, & Williamson, 2005). Hummell, Higgs, and Mulholland (2010, p. 97) state "...fieldwork education plays a vital and highly influential role in the education and professional socialisation of health science students." Foley's (2007) study showed that

during clinical placements, occupational therapy students learn to administer assessments, plan and facilitate interventions, develop their clinical reasoning, and foster their professional behaviours. Derald, Olson, Janzen, and Warren (2002) investigated the influence of clinical placements on practice confidence in 70 occupational therapy students. Results indicated that confidence increased significantly during all placements, regardless of length or position of the placement in the course. No significance was identified for mediating aspects such as age, gender, education, background, nor placement type. One might postulate that these same conclusions for the occupational therapy students would apply to physiotherapy and speech pathology. Ultimately, clinical placements evaluate each student's competence to practice in their chosen profession (McAllister, Lincoln, Ferguson, & McAllister, 2010; Rodger et al., 2013).

Students who underperform during clinical placements can have emotional reactions. James and Musselman (2005) investigated occupational therapy students who had failed a placement reporting that failing students often panicked which resulted in subsequent difficulties processing information and making clinical decisions. Student's emotional reactions to failing "...varied from disappointment, defensiveness, disengagement, and/or retaliation. Two interviewees indicated that students cried when notified that their performance was unsatisfactory..." (James & Musselman, 2005, p. 73). McGregor's (2007) study of failing nursing students discussed the paralysing fear that emerged when students were informed they had made mistakes resulting in subsequent difficulties when making decisions. McGregor (2007, p. 509) also discussed the toll on the clinical supervisor, stating "... nurse educators need to be fully present with students who are at risk of failing clinical courses in ways that foster personal and professional growth, rather than distance themselves. This is not easy work."

The therapist assigned the role of clinical supervisor has been shown to have a substantial impact on the student's perception of the clinical placement (Grenier, 2015). In one study, students reported the highest quality placements involved a supervisor who provided a welcoming environment, a structured placement, quality role modelling and open and honest feedback regarding the student's performance (Rodger, Fitzgerald, Davila, Millar, & Allison, 2011). On the other hand, O'Connor (2001) argues that the prevalence of poor clinical supervision is widespread. Giddings, Vodde, and Cleveland (2004) agreed reporting that 45% of social work students experienced conflict with a supervisor that was considered stressful by the student. The problems reported by students included supervisors who provided minimal or no feedback, supervisors who only provided positive feedback and placements with minimal structure. Clinical placements have also been reported to increase student fatigue and stress (Morrell & Ridgway, 2014), take the student on an emotional rollercoaster (Dancza et al., 2013) and create personality clashes between student and supervisor (Secomb, 2008). Therefore, it can be reasoned that students who did not experience the above-mentioned positive supervisory style may have negative emotional reactions during their clinical placements.

Increasingly, EI is a desired quality in workers around the globe including healthcare professionals (Howe, 2008). 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). When working with patients and in healthcare teams, therapists need to recognise, understand, and convey emotions as well as make critical clinical decisions that incorporate the complex emotional milieu (Howe, 2008; Lehmann, 2008). Therapists with high EI tend to create and maintain quality therapeutic relationships with their patients (Linsley & Carroll, 2012). As Linsley and Carroll (2012, p. 54) state, "... (emotional intelligence) plays an important part in supporting and guiding both the client and practitioners through the phases of the therapeutic relationship." Researchers have presented evidence that higher EI scores can result in a positive impact on client/patient satisfaction levels, enhanced caring behaviours, better resilience and coping skills, higher rates of job satisfaction, reduced burnout, and improved team performance (Andonian, 2010; Zeidner, Matthews, & Roberts, 2010). Therefore, EI is a set of competencies that occupational therapy, physiotherapy, and speech pathology students, as well as healthcare teams, should be aiming to enhance.

The major EI frameworks are ability-based models (Mayer, Salovey, Caruso, & Sitarenios, 2001), mixed models (Bar-On, 2006), and trait-based (Petrides & Furnham, 2001). The ability model purports that emotions are a critical source of information for individuals that help them make sense of their social environment and assists in the decision-making process. Mixed models propose that EI is a wider range of skills incorporating personality and motivational traits that enable a person to use emotions effectively in day-to-day life. Trait EI can be considered an overarching personality attribute assisting with the person's confidence in emotional scenarios.

For this study, a mixed model, Bar-on/Multi-Health System's Model of Emotion Social Intelligence (Bar-On, 1997; Multi Health Systems, 2011) was preferred as the researchers believe this model underpins many of the abilities and skills required by therapists and in students working in interprofessional settings. Bar-On (2006) believes EI assists a person to understand themselves, express their emotions to others, build stronger interpersonal relationships and cope with challenges on a daily basis, skills that practicing therapists require to work effectively with patients and the healthcare team. The Model of Emotional Social Intelligence model comprises five Composite scales. Each composite scale is divided into three Subscales. A Well-being Indicator is also included which has been termed Happiness. Total EI indicates that an individual's EI is a combination of all the Composite and Subscale components. Figure 1 shows the structure of the Model of Emotion Social Intelligence including the Composite, Subscales, and Well-being Indicator.

Researchers argue about the impact that EI skills have on students' performance during clinical placements. Abe states (2011, p. 818), "...positive emotions and emotional intelligence may also contribute to successful experiential learning by fostering reflection which has been identified as 'one of the

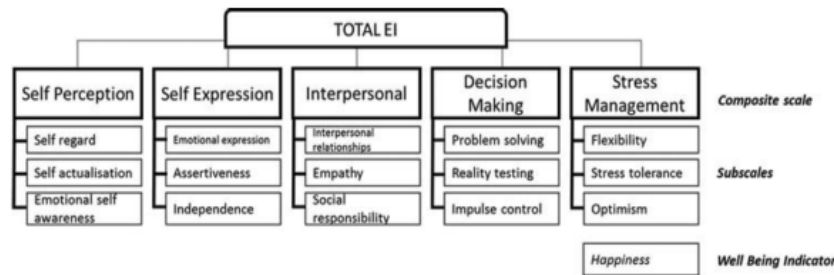


Figure 1. Model of Emotional Social Intelligence showing the composite, subscales, and well-being indicator (Multi Health Systems, 2011).

core process variables' involved in successful experiential learning." Abe's (2011) study evaluated 65 mental health specialisation students who completed a 150-h placement. Weekly journals were analysed searching for positive emotions, EI was measured using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and supervisors assessed the student's clinical performance. The authors concluded that positive emotions and higher EI scores contribute to successful clinical placements. Gordon-Handler's (2009) study reported a positive correlation between occupational therapy student's EI scores and the evaluation of the student's clinical performance. Contrary to the above studies, Lewis (2010) examined the relationship between the clinical performance and EI of 56 graduate physical therapy students where EI was not a significant predictor of clinical performance. In summary, EI competencies have a varying impact on the clinical performance of therapy students.

Only a few studies have used a longitudinal design to track changes in EI scores of students who undertake clinical placements. Borges, Kirkham, Deardorff, and Moore's (2012) research included 105 medical students who completed a 12-week clinical placement. The researchers found that team EI increased over the 12-week placement with significant changes in the following EI scores: awareness of own emotions ($p = 0.02$), recognising emotions in others ($p = 0.03$), and ability to manage others' emotions ($p = 0.01$). Conversely, Larin et al. (2011) reported that clinical placements have only minimal impact on EI. Physical therapy and nursing students from Canadian universities completed EI measures at the beginning of their course and again on completion of their first full-time clinical placement—no mention is made of how far into the course this repeated test occurred. Opposite to the researchers expected outcome, the ANOVA demonstrated no significant change in EI scores between the pre and posttest indicating that perhaps clinical placements have minimal impact on EI of students. Larin et al. (2011, p. 100) state that the "...timing of the measurements may have contributed to the lack of change ... but it may be that changes only occur after longer periods in the programs." In summary, more longitudinal research is required to track changes in EI of therapy students with an emphasis on the impact clinical placements have on EI.

Clinical placements are a mandatory component of therapy courses around the world. Clinical placements are intended to allow students to practice in safe, supervised environments as they develop the skills and professionalism of an autonomous

practitioner capable of being an effective interprofessional team member. However, clinical placements are inevitably stressful, whereby the student is placed in a challenging, new environment where they are expected to perform under pressure working with patients and healthcare teams in emotionally vulnerable situations. The majority of student clinical placement experiences are positive, however, some clinical placements have a negative influence. Thus, the authors concluded that full-time clinical placements might have a negative as well as a positive impact on the EI of therapy students. The purpose of this study was to investigate the changes in EI scores of therapy students in the final stages of their undergraduate programme.

Methods

Data collection

Data for this study were collected at two time points: T1 and T2. Data collection at T1 occurred in September/October of the 3rd year of the therapy student's programme, and T2 was completed 7 or 8 months later in April/May of the 4th year of the therapy students programme. Participants completed one or more full-time, extended clinical placements of 5 weeks or longer between T1 and T2. For the present study, a full-time, extended clinical placement (clinical placement or placement) was defined as 4 days or more per week, and 5 weeks or more in length. Ethics approval for the research project was attained from the Curtin University Human Research Ethics Committee.

Participants

For T1, participants were recruited from a convenience sample of approximately 650 3rd-year undergraduate students from four Australian universities enrolled in occupational therapy, physiotherapy, and speech pathology. All students were due to commence full-time, extended clinical placements in the next 4 months. All students had previously participated in shorter clinical placements in the initial years of their university programme. Recruitment was undertaken by unit coordinators and clinical placement coordinators from each university. Participants were contacted in three ways: (i) students were emailed information about how to participate and they completed the online survey in their own time; (ii) recruitment staff attended classes and requested students complete the online survey on their own computer devices

during the class; (iii) recruitment staff attended classes and distributed paper-based information on how to participate in the study, and students completed the online surveys in their own time. As suggested by Deutskens, Ruyter, De, Wetzels, and Oosterveld (2004), a monetary incentive in the form of a lottery was offered to increase online response rates. Participants were emailed reminders to complete the online survey.

For T2, all participants who completed the T1 survey were emailed by a research assistant with a monetary incentive in the form of a lottery offered once again. Participants were emailed reminders to complete the online survey.

Online survey

The online survey at T1 and T2 was completed in two parts.

Initially, participants answered questions online using Qualtrics © software accessed via an internet browser. Participants were provided with information about the research study and consent was attained. The survey asked for participant's age, gender, course and year of study, details of previous EI training, the number of clinical placements completed, and preferred email address (for future contact). At T2, questions were the same as T1 with additional information regarding the length and type of clinical placements collected.

Second, students completed the EQ-i^{2.0} online via the Multi-Health Systems website (<https://tap.mhs.com/EQi20.aspx>).

This study used the EQ-i^{2.0} to measure EI (Bar-On, 1997, 2006; Multi Health Systems, 2011). Bar-On (1997) released the EQ-i as one of the first tools claiming to measure EI. In 2011, Multi-Health System revised the EQ-i tool and renamed it 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. Each question is answered using a 5-point scale from "Never/Rarely" through to "Always/Almost Always." The online test takes between 10 and 30 min to complete (Multi Health Systems, 2011). The EQ-i^{2.0} calculates 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 (Multi Health Systems, 2011), the standard scores are attained by converting the raw answers for all EI domains to scores where the mean is 100 with a standard deviation of 15. During analysis of EI, scores for all EI domains above 110 are considered high, scores between 90 and 110 are considered normal and scores below 90 are considered low. These groupings were arrived at during the normative phase when developing the EQ-i^{2.0} instrument. Standard scores were broken into quartiles, the lower 25% scored below 90, the middle 50% scored 90–110, and the highest 25% scored above 110 (Multi Health Systems, 2011). The highest scores possible on each domain is 135 with the lowest score possible being zero (Multi-Health Systems, 2012). Internal consistency of the EQ-i^{2.0} demonstrated Cronbach's alpha scores of 0.97 for Total EI. Composite scales ranged from 0.88 to 0.93 while there was a range from 0.77 to 0.93 for the 15 Subscales. Test-retest reliability for Total EI was high ($r = 0.92$) for subjects with 2–4 weeks between tests and lower ($r = 0.81$) when tested 8 weeks apart (Multi Health Systems, 2011). In order to track changes in EI, the EQ-i^{2.0}

manual recommends that retesting occur at least 12 weeks apart. The time between baseline scores being gathered at T1 and retesting at T2 was 7–8 months. Australian normative data for the EQ-i^{2.0} was used in this study (Multi Health Systems, 2012).

EQ-i^{2.0} scores were matched to the demographic data using the student's university identification number. The distribution of the change in EI scores from T1 to T2 was checked for Normality using the Shapiro–Wilk test. For scores which appeared to be Normally distributed, a paired *t*-test was conducted to assess the statistical significance of the change. Where the scores were found to be significantly non-Normally distributed, the Wilcoxon Signed rank test (non-parametric) was used instead. Data were analysed using the SAS Version 9.2 (SAS Institute Inc., 2008) software, and, following convention, a *p*-value < 0.05 was taken to indicate a statistically significant change in EI scores.

Results

Participants

A total of 261 3rd-year therapy students participated at T1, a response rate of 40% of the approximately 650 students enrolled in therapy programmes at the four participating universities, while 109 students participated at T2, a 42% retention rate. The reasons for T1 participants not continuing at T2 were not sought; however, the reasons could include that at T1, participants were approached during class time while T2 was conducted entirely by email. Students in the final year of the therapy course spend the majority of their time undertaking full-time placements; thus, their focus may have been on clinical placements rather than the completion of research surveys. The EQ-i^{2.0} calculates an inconsistency index, positive impression and negative impression score. Participants exceeding the suggested parameters were excluded from the data analysis.

The mean age at T2 for the participants was 21.5 years (SD = 3.7) with 96% of participants being 26 years or younger. Students were recruited from four Australian universities with University A providing 191 students, 31 from University B, 27 from University C and, 12 from University D. Only 4.5% ($n = 12$) of students had undertaken 4 h or less of courses related specifically to learning about EI. No students reported undertaking more than 4 h of EI training.

Participant numbers, retention rates, and details about the clinical placement from T1 to T2 are described in Table 1. Students completed between one and four clinical placements ($M = 2.19$, $SD = 0.95$) between T1 and T2 ranging in length from 5 to 10 weeks ($M = 55$ days, $SD = 25$ days). Occupational therapy student placements ranged from 6 to 10 weeks in length, physiotherapy placements were 4–6 weeks and speech pathology students completed placements for 8–12 weeks in length. The therapy placements for all professions were 4 or 5 days per week with 94% of placements being 5 days per week. Data were not gathered on whether student's passed or failed each clinical placement as the researchers were concerned that participation rates may decline if students were asked to disclose if they failed a placement. Korman and

Table 1. Participants, retention rate, and clinical placements completed between T1 and T2.

	All therapy students		Occupational Therapy		Physiotherapy		Speech Pathology	
	T1	T2	T1	T2	T1	T2	T1	T2
Participants (<i>n</i>)	261	109	134	49	77	45	50	15
Retention rate T1 to T2 (%)	51		44		66		48	
Clinical placement days from T1 to T2	55 days (SD = 25)		55 days (SD = 28)		60 days (SD = 23)		46 days (SD = 20)	
Number of clinical placements	2.19 (SD = 0.95)		1.75 (SD = 0.7)		2.7 (SD = 0.9)		1.94 (SD = 0.8)	

Gribble (2016) found that 2.99% of Australian final year occupational therapy students failed a clinical placement in 2015, so it can be assumed that a small proportion of this study's participants may have failed a clinical placement.

Therapy students undertook placements in a variety of settings based on guidelines stipulated by the profession's accreditation body. Physiotherapy students undertake required placements that cover patients with orthopaedic, neurology, and cardio-respiratory conditions. Occupational therapy students are required to undertake clinical placements that include patients from across the lifespan with a range of occupational performance problems. Speech pathology students undertake placements that include patients from across the lifespan. Clinical placements for the therapy students took place in a range of settings, including hospital, private practices, schools, not-for-profit agencies, and aged care residential facilities. Placements were also in rural and international locations.

Given the nature of the clinical placement settings, the majority of students would have completed a clinical placement in a multidisciplinary or interprofessional team. Eleven per cent of the students indicated they completed a placement designated specifically as interprofessional. For example, University A operates multiple placements in local primary schools and aged care residential facilities designated as interprofessional. In these sites, the university employs a full-time interprofessional facilitator on-site to oversee interprofessional student cohorts. Students were supervised with a range of models including one supervisor overseeing one student, multiple students with one supervisor, one student being supervised by multiple supervisors, and self-directed placements with minimal direct supervision.

Table 2 presents the EI scores at T1 and T2 as well as the change in EI scores which were calculated by subtracting the T1 (baseline) scores from the T2 scores for all Composite, Subscales and Total EI scores.

The change in EI scores was analysed using a paired *t*-test, or Wilcoxon Signed rank test (for the independence and stress tolerance scores, which appeared to be non-Normally distributed). The only EI score with a significant change was assertiveness which declined ($t = -2.12$; $p = 0.036$). The mean change in all EI scores from T1 to T2 ranged from -2.12 points (assertiveness) to 1.58 points (reality testing). Reality testing showed the highest positive change ($t = 1.52$; $p = 0.13$). No significant differences in EI scores were identified between students from the different universities nor were there any differences in scores for students who completed only one clinical placement compared to those who completed three or four placements between T1 and T2.

Although the change in 21 of the 22 EI scores was not significant, individual students reported large increases and decreases in specific EI Composite and Subscale scores. For example, one student reported their assertiveness decreased by 31 points, while assertiveness increased by 28 points in another student. Stress tolerance decreased by 30 points in one student and increased by 25 points in another (see Table 2 for the range of rises and falls for all EI scores). As a result of these EI score fluctuations, an analysis of students where EI scores increased or decreased by more than five points was undertaken. A change of five points was selected because the study of Larin, Wessel, and Williams (2009) identified significant changes in EI scores (using the EQ-i Short) where the change in EI score was 3.5 points or more. Being conservative, the present study decided to analyse those students with a positive or negative change of five points or more. Figure 2 presents the percentage of therapy students whose EI scores decreased or increased by 5 points or more between T1 and T2, as well as those students who had only minimal changes (less than 5 points increase or decrease) or no change in EI scores.

The EI scores where a third or more of the therapy students' scores decreased by more than five points between T1 and T2 were: assertiveness (where 38% of students' decreased by five points or more), problem solving (37%), impulse control (35%), self-actualisation (35%), stress tolerance (33%). The EI scores where a third or more of therapy students' scores increased by five points or more: self-actualisation (40%), emotional expression (39%), independence (38%), reality testing (39%), and optimism (35%). The EI scores with the highest percentage of students with only minimal or no change (i.e., change was not more than or less than five points) between T1 and T2 were happiness (45%), decision-making (45%), social responsibility (44%), and the total EI score (45%). Self-actualisation had the lowest percentage of students who reported minimal or no change (24%).

Table 3 presents the definitions of the EI Subscales where an increase or decrease of five points or more was identified.

Discussion

The purpose of this study was to determine how the EI scores for final year therapy students changed as a result of undertaking full-time, extended clinical placements of 5 weeks or longer. This study found that assertiveness was the only EI score to show a significant change with the other 21 EI scores showing no significant change. This finding aligns with Larin et al. (2011) who reported little change in EI competencies

Table 2. Change in EI scores for all therapy students from T1 to T2.

	T1 (n = 261)		T2 (n = 109)		Change in Score T1-T2 n = 109 except for Stress tolerance where n = 108			
	Mean	SD	Mean	SD	Mean change	SD of change	Range of change	^x p value
Total EI score	98.6	12	99.6	12	0.09	8	-19 to +20	0.90
Self perception*	100.4	13	101.2	12	0.42	9	-23 to +17	0.61
Self-regard	96	14	97	14	0.87	9	-20 to +30	0.31
Self-actualisation	103.2	13	104.1	14	0.39	11	-27 to +27	0.70
Emotional self-awareness	102.9	13	102.9	11	-0.47	10	-28 to +21	0.63
Self expression	94.2	14	93.5	14	-0.42	9	-19 to +26	0.63
Emotional expression	101	16	100.4	14	0.06	11	-31 to +28	0.96
Assertiveness	95.8	14	92	16	-2.12	10	-29 to +33	0.036
Independence	89.9	15	91.9	14	0.76	10	-28 to +22	0.26 ^z
Interpersonal	106.9	10	106.7	11	0.35	8	-17 to +20	0.65
Interpersonal relationships	104.8	12	104.2	11	0.02	8	-22 to +20	0.98
Empathy	107.4	11	107.1	10	0.56	9	-21 to +29	0.52
Social responsibility	105.3	11	105.5	11	0.16	10	-26 to +29	0.87
Decision making	96.5	14	99.2	13	0.20	9	-23 to +21	0.81
Problem solving	90.4	15	92.7	15	0.06	10	-28 to +25	0.95
Reality testing	98.6	13	99.7	12	1.58	11	-28 to +28	0.13
Impulse control	103.6	15	106.3	13	-1.03	10	-25 to +25	0.26
Stress management	95.5	14	96.9	14	-0.17	8	-19 to +22	0.82
Flexibility	95.6	14	97.7	14	0.85	9	-18 to +27	0.31
Stress tolerance	91.6	15	92.3	15	-1.40	11	-30 to +25	0.28 ^z
Optimism	101.4	13	102.1	13	0.23	9	-20 to +24	0.80
Happiness	102.9	13	103	13	-0.23	8	-26 to +26	0.78

SD = Standard deviation.

*The EI factors in bold are the Composite EI scores.

^xp value represents the significance of the change in EI score from T1 to T2.

^yChanges in scores are calculated as T2 minus T1, i.e., T1 was the baseline score.

^zp value calculated using the Wilcoxon Signed Rank test.

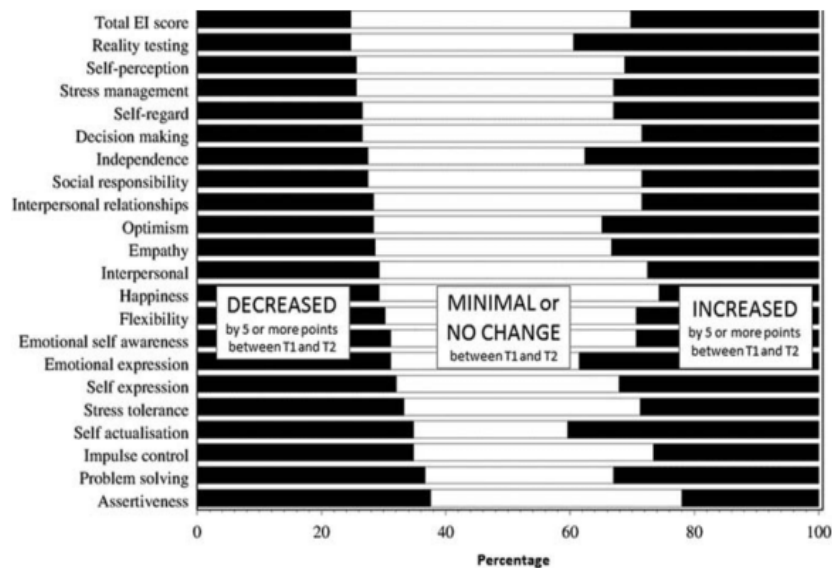


Figure 2. Percentage of therapy students whose EI scores increased, decreased, or showed no or minimal changes. EI scores from T1 to T2.

between the start of the academic programme and the completion of their first clinical placement for nursing and physiotherapy students; however, the present study tracked EI scores towards the end of the university programme. The reasons for the students reporting declining assertiveness scores were not gathered and future research could analyse the factors that influence changes in EI scores. Previous research has indicated that students experience negative supervision styles, poor-quality feedback and poorly structured clinical placements (Giddings et al., 2004) which could

impact students' willingness to demonstrate their assertiveness skills and undermine their confidence.

The findings identified five EI scores where a third or more of all therapy students decreased by five points or more over the study period, namely, assertiveness, problem-solving, self-actualisation, impulse control, and stress tolerance. Over the same period, a third of students perceived EI scores increased by five points or more in the domains of self-actualisation, emotional expression, independence, reality testing, and optimism. The finding that a large proportion of therapy students perceived EI scores

Table 3. Definitions of EI Subscales where a third or more of therapy students' scores decreased or increased by five points or more between T1 and T2 (Multi Health Systems, 2011, pp. 75–78).

Decreased	
Assertiveness	"... involves communicating feelings, beliefs, and thoughts openly, and defending personal rights and values in a socially acceptable, non-offensive, and non-destructive manner."
Problem solving	"... is the ability to find solutions to problems in situations where emotions are involved. Problem solving is about using emotional information to enhance the process of recognizing a problem, feeling confident in one's ability to work through it, defining the problem, generating a solution, and implementing the plan."
Impulse control	"... is the ability to resist or delay an impulse, drive, or temptation to act... Impulse control entails a capacity for recognizing and accepting one's desire to react without becoming a servant to that desire."
Self-actualisation	"... is the willingness to persistently try to improve oneself and engage in the pursuit of personally relevant and meaningful objectives that lead to a rich and enjoyable life."
Stress tolerance	"... involves coping with stressful or difficult situations and believing that one can manage or influence those situations in a positive manner Stress tolerance ... is a strong indicator of one's ability to effectively deal with problems and crises."
Increased	
Emotional expression	"... is openly expressing one's feelings verbally and non-verbally. The communication of those feelings in a manner that can be understood and experienced by the recipient."
Independence	"... the ability to be self-directed and free from emotional dependency on others. Independent people are self-reliant in planning and making important decisions."
Reality testing	"... is the capacity to remain objective by seeing things as they really are. This involves recognizing when emotions or personal bias can cause one to be less objective."
Optimism	"... is an indicator of one's positive attitude and outlook on life. It involves remaining hopeful and resilient, despite occasional setbacks."

are increasing is encouraging. However, the declining EI scores during clinical placements are noteworthy. No previous research has been identified that reports a decline in the EI scores of university students during clinical placements. As Zegwaard (2015, p. 90) states, "... it must not be ignored that participating in WIL can also generate negative impacts, nor can it be ignored that WIL research does occasionally generate negative or undesirable findings." Rowe (2015) argues that the positive impact of clinical placements can seem so obvious that researchers often neglect to delve into the adverse outcomes. Given that all students in this study completed a mean of 55 days of extended clinical placements between T1 and T2, it could be argued that some of the changes in EI scores might be related to the clinical placement. However, the lack of a control group of students who completed no clinical placements means that no direct link between clinical placements and the increases or decreases in EI scores can be confirmed. The problem for researchers is that clinical placements in therapy programmes are mandatory; thus, it is impossible to build a control group of homogenous therapy students who do no clinical placements. Therefore, the decline in EI scores may be related to environmental factors outside of the clinical placement such as the home, family, relationships, and health (Zeidner et al., 2010). Further research using control groups is required to pinpoint the impact that clinical placements have in changing perceived EI scores.

There is a range of potential reasons that clinical placements could negatively influence the perceived EI abilities of therapy students. Poor-quality supervision from the clinician

overseeing the placement has been highlighted by some previous studies noted below. Grenier's (2015) study identified the following attributes of clinical supervisors that negatively impacted a student's learning: poor communication skills, disengagement, high levels of control, being closed-minded and intimidation. Students exposed to a supervisor demonstrating one of more these attributes could perceive a decrease in their EI skills. These negative supervisor attributes could undermine a student's confidence and self-efficacy in a range of EI abilities. Giddings et al. (2004) reported that 45% of social work students had experienced conflict with the supervisor during a clinical placement resulting in a stress reaction. Conflict with supervisors might generate a decline in perceived EI skills such as assertiveness and self-expression subsequently impacting the student's stress tolerance. The quality and regularity of feedback from supervisors could also influence EI scores (de Beer & Mårtensson, 2015; Grenier, 2015; Ho & Whitehill, 2009). Students who fail a clinical placement are likely to experience a decline in perceived EI scores such as self-regard and self-actualisation, due to their suitability to their chosen career being challenged by their poor performance.

With EI scores declining for some students during clinical placements, there are implications for clinical supervisors and interprofessional facilitators as clinical performance may decline concurrently. The following section describes the impact that declining EI scores (see Table 3) could have on a student's clinical performance. If assertiveness skills are declining, then a student may become passive and withdrawn, lack decisiveness when communicating with patients or the interprofessional team, and present with difficulties in articulating their needs (Stein & Book, 2011). Declining problem-solving skills may result in a student becoming anxious and distracted in emotional scenarios, feeling overwhelmed with the responsibility required in making clinical decisions and ultimately have difficulty selecting the best solution for the patient or scenario (Multi Health Systems, 2011). If self-actualisation is decreasing, then students may present as lacking the motivation to succeed during placement, set lower goals and be passive during interprofessional encounters (Multi Health Systems, 2011; Stein & Book, 2011). If stress tolerance is declining, then students may find that emotion gets in the way of coping with stress and they may experience increases in tension and anxiety with reduced concentration when faced with emotional scenarios (Stein & Book, 2011). Students who have declining impulse control may become impatient and tend to act without thinking resulting in unpredictable responses to emotional scenarios (Howe, 2008). As a result of these declining EI competencies, supervisors and interprofessional facilitators may notice students require more guidance, progress at a slower rate, and demand more of the supervisor's time. Ultimately, these students may be graded as underperforming or even failing the clinical placement.

On a positive note, the EI scores that increased by five points or more in a third of therapy students were self-actualisation, emotional expression, independence, reality testing, optimism, self-regard, problem solving, and stress management. Increases in EI scores may tend to result in a therapy student showing enhanced caring behaviours, having improved patient

satisfaction scores, performing well in interprofessional interactions, and ultimately doing well during clinical placement. For example, students demonstrating improving emotional expression will be comfortable in expressing their emotions to their supervisors and in the interprofessional team (Multi Health Systems, 2011). If a student's self-regard scores are increasing, they will be improving their own understanding of their strengths, have a well-developed sense of professional identity, and will be driven to achieve their potential during the clinical placement (Multi Health Systems, 2011). Students who had increasing reality testing scores may present as being grounded and tuned into the scenarios they encounter on a daily basis and able to set realistic goals (Multi Health Systems, 2011). Ultimately, students with increasing EI may tend to perform well in the clinical placement and be less of a burden on the clinical supervisor and interprofessional facilitator.

University educators in therapy programmes need to be aware that placements might have a negative impact on EI competencies of students. University educators are encouraged to include EI in student preparation sessions before full-time clinical placements commence. University educators could consider administering EI tests to students before they commence clinical placements and perhaps during challenging places as a strategy to support students facing difficulties. The EQ-i2.0 used in this study is expensive so free EI tests could be used, such as the Schutte Self-Report Emotional Intelligence Test (SSEIT) (Schutte et al., 1998). The SSEIT is a 33-item self-report measure of EI developed that tests the following three aspects: appraisal and expression of emotion, regulation of emotion, and utilisation of emotion. The SSEIT shows an internal consistency of 0.87 using Cronbach's alpha and a 2-week test-retest reliability of 0.78 (Schutte et al., 1998).

Administering EI tests will generate a baseline EI score for each student and increase the student's insight into their own EI abilities. Once students are aware of their EI strengths and weaknesses, university educators could arm students with strategies on how to improve specific EI competencies in preparation for clinical placements. Many authors, such as Stein and Book (2011), have suggested a range of strategies that can be implemented to increase specific EI abilities. Debriefing sessions could be scheduled with students after the completion of each clinical placement so that students have the opportunity to discuss both positive and negative experiences during their placements and to reflect on their EI competencies. This recommendation is consistent with Mackenzie's (2002) finding that debriefing after clinical placements for occupational therapy students allowed students to reflect on the positive and negative experiences and to develop strategies that could be implemented in future clinical placements.

Clinical supervisors, including interprofessional placement facilitators, need to be aware that clinical placements can have a negative impact on some student's perceived EI abilities. Clinical supervisors could be encouraged to monitor students who may be experiencing a decline in EI competencies and initiate discussions with the student about their perceived EI abilities. As James and Musselman (2005) reported, failing students may become disengaged from the placement, begin to panic and

withdraw in stressful scenarios and demonstrate difficulties working independently—all attributes that could be considered to fall under the EI umbrella. University educators are encouraged to include EI in clinical supervisor preparation sessions. When faced with a student who is underperforming, clinical supervisors require a range of strategies that the student could trial, and this toolkit should include ideas on enhancing EI competencies.

A limitation of the research design is the use of the EQ-i^{2.0}, which is a self-report tool and not a test of the student's actual EI ability (Zeidner et al., 2010). As a result, the results have only been reported in terms of the student's perceived EI rather than their actual EI ability. Further studies could use EI tools that purport to measure EI ability (e.g., the MSCEIT). Future studies could also use the EQi 360, a tool that matches EI scores from the respondent with selected peers or managers. For example, student's clinical supervisors or peers could complete the EI tool. Various authors (e.g., Zeidner et al., 2010) have questioned the ability of people to use self-report tools to accurately estimate their personal EI with a tendency for participants to overrate their emotional abilities. Other authors have purported that self-report tests may lead to fake responses, particularly when the motivation to over report abilities exists, e.g., when applying for a job (Grubb & McDaniel, 2007). The research could have gathered information from students on the perceived quality of clinical placement supervision. This could have been used to identify the types of learning environment conditions that impacted on observed changes in EI. This study did not collect data on whether each student passed or failed their placements and future studies could include pass/fail grades or clinical scores as a variable that may be influential in EI scores.

Concluding comments

Findings from this study suggest that perceived EI fluctuates in occupational therapy, physiotherapy, and speech pathology students over the 7- or 8-month period when students undertake full-time, extended clinical placements in the final year of their university programme. Although the underlining reason for the fluctuating scores cannot be determined, clinical placements are possibly an influence on student's perceived EI abilities. Of concern, was the prevalence of therapy students with declining EI scores. This study is unique as no previous research has identified the extent of therapy students with EI scores that are perceived to be declining. Clinical supervisors and interprofessional facilitators need to be aware that student's perceived EI scores may be changing with the structure of the placement or the clinical supervision style potentially influencing the student's EI—both positively and negatively. Further research is recommended into the aspects of the clinical placement and supervision that influence EI scores, whether declining EI is a significant influence on a student's clinical performance and whether changing EI impacts the level of support that interprofessional and clinical supervisors are required to provide.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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Paper 3:

The impact of clinical placements on the emotional intelligence of occupational therapy, physiotherapy, speech pathology, and business students: A longitudinal study

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RESEARCH ARTICLE

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The impact of clinical placements on the emotional intelligence of occupational therapy, physiotherapy, speech pathology, and business students: a longitudinal study

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Abstract

Background: Emotional intelligence (EI) is a critical skill for healthcare practitioners. Minimal longitudinal research has tracked the changes in EI of therapy students over their final full-time clinical placements.

Methods: The Emotional Quotient Inventory (EQ-i^{2.0}) measured the EI of 283 therapy students and 93 business students (control group who do no clinical placements) at three time points over a 16-month period, the same period that the therapy students participated in clinical placements.

Results: Analysis of the therapy students showed significant increases over the 16 months of the study in Total EI score, as well as nine other EI skills. However, large percentages of students reported declining scores in emotional expression, assertiveness, self-expression, and stress tolerance, with some students reporting low EI scores before commencing full-time extended clinical placements.

Conclusions: The study contributes to new knowledge about the changing EI skills of therapy students as they complete their full-time, extended placements. Emotional intelligence in student therapists should be actively fostered during coursework, clinical placements and when first entering the workforce. University educators are encouraged to include EI content through the therapy curricula. Employers are encouraged to provide peer coaching, mentoring and workshops focused on EI skills to recent graduates.

Keywords: Clinical placements, Emotional intelligence, Therapy students, Supervision

Background

Emotional intelligence (EI) is of fundamental importance to many aspects of human functioning with MacCann, Joseph, Newman, and Roberts [1] arguing that EI should be included as a second-stratum factor of intelligence and considered as important as visual processing and fluid intelligence. Emotional intelligence is the "...abstract, invisible processes that people appear to use in their relationships with themselves, and as part of their relating effectively, meaningfully or helpfully with others" ([2], p.

iv). Morrison [3] proposes that EI skills are required when healthcare practitioners develop rapport with patients and families, make decisions during assessment and treatment, collaborate with the healthcare team, and cope with workplace stress. Evidence has demonstrated that healthcare teams with higher EI skills have enhanced therapeutic outcomes with patients [4]. Emotional intelligence has been shown to have a significant effect on patient-centred care [5], patient satisfaction [6], job satisfaction [7], staff retention [8], and team skills [9]. Medical students with higher EI scores performed better than students with lower EI in their final professional examination with the authors reporting that EI development may enhance medical students' academic performance [10]. Two studies [11, 12]

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reported that Total EI scores of occupational therapy students positively correlated with their performance during clinical placements. Many healthcare and business graduates aspire to management and leadership roles with research reporting that leaders with higher EI skills are often more effectual [13].

Emotional intelligence tends to increase as each individual matures emotionally. Many studies have tracked the emotional-social development through childhood. Zeidner et al. [13] proposed a range of biological, social and environmental factors including personal experiences, peers, affective interactions, teachers and school and the media, that work synergistically in the development of EI skills. Fewer studies have followed the trajectory of EI development in adults. Bar-On's [14] study showed that EI increases from the late teenage years, through adulthood but plateaus in the late forties. Multi-Health Systems [2] also showed EI increased from the teenage years and well into the sixties. Research has shown that EI can be increased through participation in training programs [15–17] as well as via workplace learning [18]. Workplace learning occurs when a worker or student performs the actual job in an authentic workplace. Mechanisms that lead to workplace learning include role-modelling from expert colleagues, mentoring, coaching, and team collaboration. Workplace learning has been shown to develop a range of complex skills deemed necessary for the twenty-first-century workplace, especially problem-solving, creativity, and teamwork [18]. As a result of the finding that EI can be enhanced via training, some authors [19, 20] have advocated for university allied health and medical programs to embed EI throughout the curriculum, so students enter the workforce equipped with improved EI abilities. The reality appears to be that university healthcare programs include minimal EI content in their curricula [19, 20]. Thus, the most fertile ground where healthcare students learn EI skills may be during clinical placements.

Various studies have demonstrated that the EI skills of healthcare students' can improve during their university course. Foster et al. [19] reported that nursing students' ($n = 111$) Total EI increased significantly over their three-year program. Benson et al.'s [21] longitudinal study examined changes in EI of 52 nursing students over their entire university program. Although this study reported that Total EI scores did not change significantly, specific EI skills did change significantly. Lewis [22] followed 87 physiotherapy students over 3 years and found that their EI scores did not change significantly; however, those students who failed their licensure exam tended to have lower EI scores. Similarly, Larin et al. [23] found no significant change in EI scores amongst 73 nursing and 60 physiotherapy students from the commencement of their program to after their first clinical placement. While the literature presents some conflicting

results in the changes of EI scores of healthcare students, none of the studies used a control group of relatively homogenous university students against which to compare any changes in EI over time. Thus, the studies are unable to conclude that the changes (or lack of change) in EI scores were a result of university studies or because of personal life events external to the university studies. Nor did these studies focus their measurements over the final period of the university program where the majority of clinical placements typically occur. As such, we decided to longitudinally track EI scores of occupational therapy, physiotherapy, and speech pathology students before, during and after they completed their final clinical placements, and compare results for these students with those for business students, who do no clinical or work placements. The research hypothesis was: the Total EI, as well as the Composite and Subscale EI scores of therapy students (who completed clinical placements), will improve significantly more than the business students (who do no clinical or work placements), with business students' EI scores expected to show no significant change.

Methods

This paper reports the findings of the quantitative phase of a larger study which used a longitudinal, retrospective mixed methods design as proposed by Plano Clark et al. [24]. An analysis of the therapy students' baseline scores before the commencement of clinical placements [25], their changes in the EI skills from T1 to T2 [26], and the qualitative findings [27] have been previously published.

Participants

Participants were recruited from a convenience sample of undergraduate students enrolled at four Australian universities.

To be eligible to participate in the study, students needed to be enrolled in the third-year of their four-year undergraduate university occupational therapy, physiotherapy, or speech pathology program at one of the four selected universities. The three therapy professions were selected as they work with similar patients across a range of healthcare settings. Undergraduate business students were selected as the control group as they generally undertake minimal or no placements in healthcare settings as an enforced component of their program, although work integrated learning in business programs is becoming more popular [28]. To be eligible, business students needed to be enrolled in the second-year of their three-year commerce, economics, or human resource management program.

Data collection

Data were collected at three time points. The first set of data collection (T1) occurred before the therapy students

commenced their full-time, extended clinical placements. The second set of data collection (T2) was completed the following year after the therapy students had completed one or more clinical placements (7 to 8 months after T1). The final set of data (T3) was collected after the therapy students had completed all mandatory placements (7 to 8 months after T2). The T1, T2 and T3 demographic data were collected via an online survey tool and students were then directed to the Multi-Health Systems website to complete the EI questionnaire. Therapy and business students completed the online questionnaires at the same times. The online questionnaires were available for a period of 5 weeks. At T2 and T3, students received four emails that requested their continued participation in the study.

When selecting a framework on which to base this study, two theoretical perspectives of EI were considered; ability-based and mixed models, each of which has their own measurement tools [29]. Ability models propose that EI is an individual's ability to perceive emotions, generate emotions to assist thought, understand and interpret one's and others emotions, and to be able to regulate emotions [30]. Mixed models purport that, compared to the ability models, EI draws on a broader range of skills including personality and motivational traits that enable a person to use emotions effectively in day-to-day life [14, 31]. For this study, a mixed model, Bar-on/Multi-Health System's Model of Emotion Intelligence [2, 14] was preferred as the researchers believe this model underpins many of the abilities and skills required by therapists and in students working in healthcare settings. The Model of Emotional Intelligence includes skills such as self-regard, assertiveness, flexibility, and stress tolerance; skills that therapists require to work effectively with patients in vulnerable situations. Happiness is included in the model as a Well-Being Indicator because research has reported that happiness is higher in people with higher EI. The subsequent results

of our study do not include the happiness scores as happiness is an outcome of higher EI, not a contributing factor [2] Fig. 1.

To measure EI, Bar-On [14] created the Emotional Quotient Inventory (EQ-i). In 2011, Multi-Health Systems revised the measurement tool, now titled Emotional Quotient Inventory 2.0 (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 but their perceptions of their emotional intelligence. The EQ-i^{2.0} asks participants questions related to the five Composites and 15 Subscales of the Model of Emotional Intelligence. Questions include: "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". Each question is answered on a five-point scale from 'Never/Rarely' through to 'Always/Almost Always'. The online test takes 20 min or more to complete. The EQ-i^{2.0} calculates 22 standard scores for each participant: a Total EI score, five Composite scores, 15 Subscale scores, and the Well-Being Indicator score. The EQ-i^{2.0} scoring manual [2] states that the standard scores are attained by converting raw answers for all EI Subscale and Composite scores to scores whose population mean is 100 with a standard deviation of 15.

During analysis of EI, scores above 110 are considered high, scores between 90 and 110 are considered normal, and scores below 90 are considered low. These demarcations were arrived at during the normative phase. The highest score possible on each Subscale and Composite is 135 and the lowest is 55. Test-retest reliability for Total EI has been reported to be high ($r = 0.92$) for subjects with 2 to 4 weeks between tests and lower ($r = 0.81$) when tested 8 weeks apart [2].

In order to track changes in EI, the EQ-i^{2.0} manual recommends that retesting occur at least 3 months apart. Australian normative data for the EQ-i^{2.0} was used in this study [32].

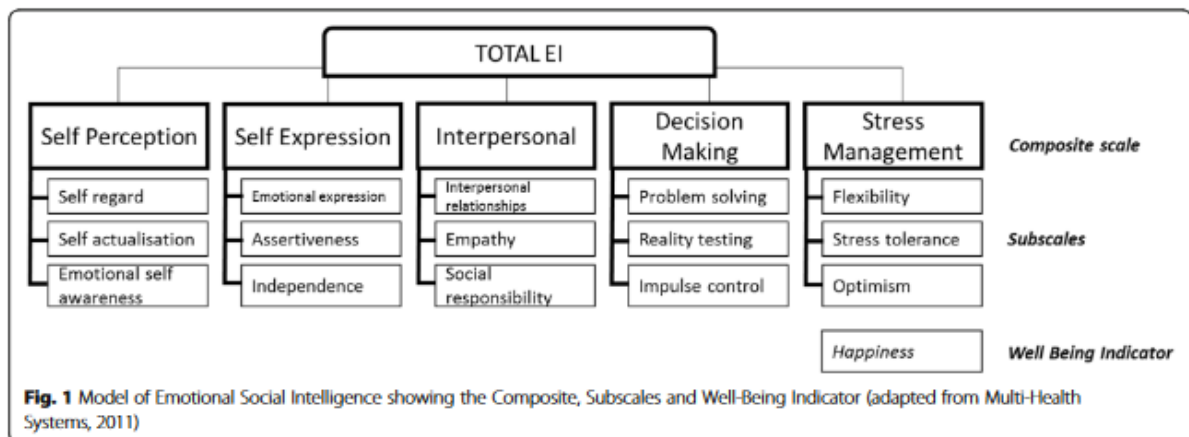


Fig. 1 Model of Emotional Social Intelligence showing the Composite, Subscales and Well-Being Indicator (adapted from Multi-Health Systems, 2011)

Data analysis

Statistical analyses were performed with the SAS version 9.2 software [33] and a p -value < 0.05 was taken to indicate a statistically significant association in all tests. Comparisons of EI scores (Total, Subscales and Composites) between the three therapy groups at baseline (T1) was conducted with either ANOVA or Kruskal-Wallis tests, depending on the Normality of the baseline distributions (tested with the Shapiro-Wilk statistic). The changes in all subscale and composite scores from T1 to T3 were calculated for each participant. As the changes in scores were found to be close to Normally distributed, a t -test was used to identify whether there was a significant change in mean total EI score from T1 to T3 for each student group (testing whether the change for each group was statistically different from zero). Instead of performing a number of separate t -tests on the Subscale and Composite scores, one analysis was performed on the five Composites and another on the 15 Subscales. These were carried out by treating the measurement on each Subscale and Composite as a repeated measurement for each participant, with the type of measure (particular Subscale and Composite) as an independent fixed factor. Because of the repeated measurements on each participant, the participant identifier was treated as a random effect in the model. The results from this model were considered more stable than conducting many separate t -tests, as the estimated standard deviation against which all the tests are performed would be obtained from consideration of all the Subscale and Composite scores together. With the participant identifier named as the random effect, any correlation between scores obtained from the same participant could be taken in to account. By including an interaction between the score type and the student type, p -values were obtained to identify whether there had been any significant change from T1 to T3 (interaction term significantly different from zero) for each particular student type and score type (Subscale and Composite) combination. A similar model was used to compare changes in the therapy students as a single group against the changes observed in the business students (pairwise differences between selected interaction terms in the model).

The scores for each participant were classified as increased, no change, or decreased from T1 to T3,

depending on whether the change had exceeded a five-point threshold or not. This margin of five-points was selected because the study by Larin et al.'s [34] was able to detect an effect size of 0.36 for the total EI score, corresponding to a change of approximately five-points.

Results

At T1, 650 third-year therapy students and 750 s-year business students were enrolled in the eligible courses at the four universities. All were invited via email and face-to-face recruitment sessions to take part in the study. A total of 283 therapy and 93 business students completed all parts of the online questionnaires and were included in the data analysis at T1. By the third and final questionnaires, the retention rate was 50% ($n = 142$) for therapy and 26% ($n = 24$) for business students. The higher than expected drop-out rate was due to the collection of T3 data being after students completed their university programmes and thus they were less likely to view and respond to emails requesting their ongoing participation in the research study. Consequently, with the business students, the study may have lacked the power to detect changes from T1 to T3 which increases the chance of a Type II error. The EQ-i^{2.0} calculates an Inconsistency Index, Positive Impression and Negative Impression score, with 11 participants exceeding the parameters at one or more of the three data collection points and excluded from the data analysis.

Table 1 details the clinical placements completed by the students over the 16-month period. The business students completed no workplace placements. Therapy students completed a mean of 124 days of placements in a range of settings, including hospital, private practices, schools, and residential aged care facilities, in rural, and international locations. The majority (94%) of placements for therapy students were 5 days per week.

Table 2 presents each student cohorts' T1 scores and the mean change from T1 to T3 in total EI scores as well as Composite and Subscale scores with bolded p -values indicating that a significant positive change occurred from T1 to T3. At T1, before therapy students commenced their first full-time, extended placements, the occupational therapy students' mean independence

Table 1 Participants demographics and clinical placements at T1 and T3

	All therapy students		Occupational Therapy		Physiotherapy		Speech Pathology		Business	
	T1	T3	T1	T3	T1	T3	T1	T3	T1	T3
Participants	283	142	139	52	91	53	53	37	93	24
Females and males @T1	85%/15%		89%/11%		72%/28%		96%/4%		76%/24%	
Age @ T1	21.4 years SD = 3.4		21 years SD = 2.7		21.9 years SD = 3.7		21.4 years SD = 3.5		21.4 years SD = 4.7	
Number of clinical placements	4.02 SD = 1.4		3.24 SD = 0.9		4.5 SD = 1.5		3.9 SD = 1.2		0	
Clinical placement days	124 SD = 33		117 SD = 28		125 SD = 37		124 SD = 37		0	

Table 2 EI scores for all participants at T1, change in EI scores between T1 and T3

	Occupational Therapy			Physiotherapy			Speech Pathology			Business		
	T1 score (SD)	Change from T1-3	^x p-value	T1 score	Change from T1-3	^x p-value	T1 score	Change from T1-3	^x p-value	T1 score	Change from T1-3	^x p-value
Total EI Score	99 (12)	3.2	0.034	99 (15)	2.5	0.121	97 (12)	2.2	0.286	96 (14)	-1.7	0.445
SELF PERCEPTION	101 (3)	3.8	0.016	100 (14)	2.6	0.136	99 (12)	1.5	0.483	98 (14)	-1.3	0.579
Self-regard	97 (14)	2.5	0.146	97 (16)	2.4	0.209	93 (14)	1.4	0.542	97 (15)	-1.4	0.593
Self-actualization	104 (14)	3.5	0.038	103 (15)	4.5	0.017	102 (12)	1.9	0.420	97 (15)	-0.2	0.937
Emotional self-awareness	103 (13)	1.6	0.032	101 (14)	-1.3	0.500	105 (12)	0.5	0.830	103 (15)	-1.6	0.543
SELF EXPRESSION	94 (14)	2.4	0.128	95 (15)	1.8	0.286	93 (14)	1.6	0.447	96 (14)	-2.4	0.316
Emotional expression	102 (15)	1.6	0.353	99 (16)	-1.3	0.498	102 (14)	3.12	0.179	101 (15)	-1.4	0.596
Assertiveness	95 (15)	-1.5	0.367	97 (15)	2.2	0.248	105 (15)	-0.4	0.858	97 (14)	-0.9	0.734
Independence	89 (14)	4.4	0.010	92 (15)	3.8	0.044	88 (16)	0.7	0.774	92 (15)	-3.1	0.224
INTERPERSONAL	107 (10)	1.8	0.255	106 (12)	0.3	0.863	106 (10)	2.1	0.330	102 (13)	-1.5	0.536
Interpersonal relationships	105 (12)	-0.04	0.979	104 (12)	2.0	0.279	104 (12)	0.3	0.914	102 (14)	-1.1	0.666
Empathy	107 (11)	2.8	0.162	106 (12)	-0.9	0.634	109 (10)	1.8	0.441	102 (13)	-1.9	0.468
Social responsibility	106 (11)	2.2	0.191	105 (12)	-0.1	0.954	101 (10)	4.1	0.079	100 (12)	-0.4	0.875
DECISION MAKING	97 (14)	3.6	0.023	100 (14)	3.6	0.039	99 (12)	2.4	0.258	98 (14)	-0.4	0.881
Problem solving	90 (14)	2.5	0.136	92 (16)	4.9	0.009	88 (15)	2.8	0.223	91 (15)	1.2	0.652
Reality testing	99 (13)	5.2	0.002	98 (14)	1.7	0.378	98 (13)	2.1	0.370	97 (15)	-2.7	0.289
Impulse control	105 (14)	1.1	0.505	102 (16)	1.7	0.371	103 (14)	0.8	0.720	94 (16)	0.8	0.754
STRESS MANAGEMENT	96 (13)	2.2	0.163	97 (16)	2.4	0.158	92 (13)	1.8	0.391	95 (15)	-1.1	0.638
Flexibility	96 (13)	2.3	0.178	97 (16)	1.5	0.420	94 (11)	2.5	0.275	96 (15)	-0.8	0.769
Stress tolerance	92 (14)	0.8	0.655	92 (17)	2.8	0.130	87 (14)	1.2	0.616	94 (15)	-0.6	0.798
Optimism	102 (13)	2.3	0.178	102 (14)	1.6	0.379	99 (13)	1.1	0.628	99 (14)	-1.9	0.456
Happiness	104 (12)	2.1	0.214	102 (15)	1.4	0.444	101 (13)	-0.5	0.844	100 (15)	-0.8	0.754

^xp-value represents the significance of the change in EI score from T1 to T3. Changes in scores are calculated as T3 minus T1. Bolded p-values indicate a significant positive change occurred from T1 to T3.

score was low (< 90), while speech pathology students reported mean scores that are considered low for independence, problem-solving and stress tolerance.

At T1, the Shapiro-Wilk test showed that 18 of the 22 scales were significantly non-Normally distributed, therefore comparisons between student groups at baseline was performed with non-parametric tests. Within the three therapy programs, there was only a significant difference in social responsibility (Kruskal-Wallis test Chi-square = 6.86, $F = 2$; $p = 0.03$), where the occupational therapy students appeared to score higher than

the speech pathology students while all other scales showed no significant differences (all p -values > 0.2). The p -values shown in Table 2 were obtained from the ANOVA (total EI score) or random effects regression models (Subscale and Composite scores). As they were similar with respect to most scores, occupational therapy, speech, and physiotherapy students were combined into a single 'therapy' group for the purpose of comparison with business students.

By T3, mean EI scores for each student cohort were within the normal range (between 90 and 110).

Occupational therapy students reported seven EI skills that improved significantly over the 16-month period: Total EI score, self-perception, self-actualisation, emotional self-awareness, independence, decision-making, and reality testing. Physiotherapy students showed significant improvement in self-actualisation, independence, decision-making and problem-solving. Speech pathology showed no significant changes in any EI skills. Business students reported no significant changes in any of the EI Subscale and Composite scores.

Table 3 presents the results of the ANOVA and two random effects regression models showing changes in the EI of all therapy and business students over the 16-month period, as well as a comparison of both groups. All therapy students showed significant increases in Total EI from T1 to T3, as well as the Composites of self-perception, self-expression, decision-making, and stress management. The therapy students Subscale scores showed significant increases in self-regard, self-actualization, independence,

problem-solving, reality testing, and flexibility, with no EI scores declining.

Figure 2 shows the percentage of all therapy students whose EI scores increased or decreased (by five points or more) or remained the same over the 16-month period. The EI skills where a large percentage of students increased their scores were decision-making (48%), self-regard (48%), self-perception (47%) and independence (44%). Scores decreased in a large percentage of therapy students in emotional-expression (38%), assertiveness (37%), stress tolerance (32%), and self-expression (32%).

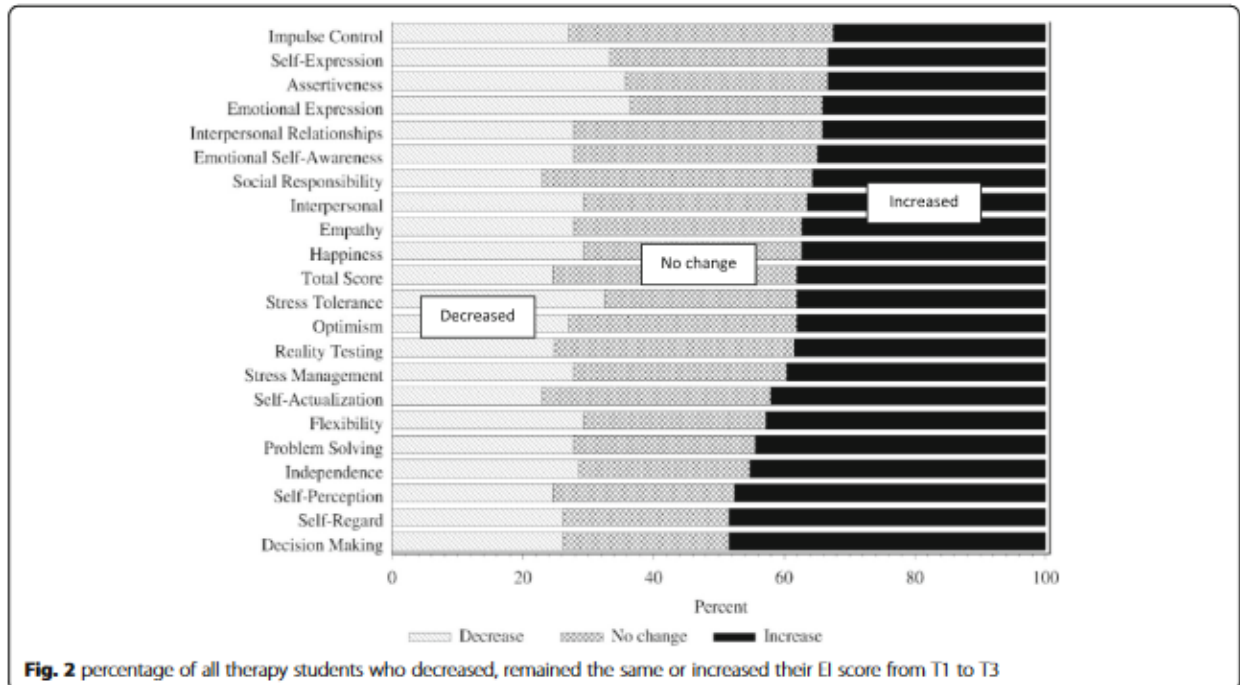
Discussion

The study contributes to the understanding of the changing EI skills of therapy students. The findings support our hypothesis that therapy students' Total EI would increase significantly over the period that coincided with full-time, extended clinical placements. Our study adds considerable depth to understanding the strengths and

Table 3 changes in the EI from T1 to T3 within an between all therapy and business

	Mean change		p-value ^x (between therapy and business)	p-value ^x (change from T1)	
	All therapy (n = 126)	Business (n = 20)		All therapy	Business
Model 1: Change from T1 to T3 in the Total EI score					
Total EI Score	2.7	-1.7	0.015	0.005	0.441
Model 2: Change from T1 to T3 in EI composite scores					
Self perception	2.8	-1.3	0.104	0.005	0.576
Self-expression	2.0	-2.4	0.085	0.046	0.312
Interpersonal	1.3	-1.5	0.273	0.188	0.533
Decision making	3.3	-0.4	0.150	0.001	0.880
Stress management	2.2	-1.1	0.195	0.031	0.636
Model 3: Change from T1 to T3 in EI subscales scores					
Self regard	2.2	-1.4	0.195	0.047	0.582
Self-actualisation	3.5	-0.2	0.183	0.002	0.937
Emotional self-awareness	1.2	-1.6	0.318	0.270	0.542
Emotional expression	0.9	-1.4	0.410	0.397	0.595
Assertiveness	0.0	-0.9	0.756	0.993	0.738
Independence	3.3	-3.1	0.021	0.003	0.222
Interpersonal relationships	0.7	-1.1	0.505	0.499	0.665
Empathy	1.1	-1.9	0.286	0.317	0.466
Social responsibility	1.8	-0.4	0.421	0.097	0.875
Problem solving	3.4	1.2	0.410	0.002	0.651
Reality testing	3.3	-2.7	0.032	0.003	0.288
Impulse control	1.3	0.8	0.870	0.256	0.753
Flexibility	2.1	-0.8	0.308	0.060	0.768
Stress tolerance	1.6	-0.7	0.422	0.153	0.798
Optimism	1.8	-1.9	0.181	0.103	0.455
Happiness	1.3	-0.8	0.450	0.242	0.753

Bolded p-values indicate a significant change from T1 to T3



shortcomings of therapy students' EI skills as they complete their full-time, extended placements. The findings that *Total EI*, as well as most EI skills improved while students participated in clinical settings, should be reassuring to clinical educators and university educators, and validate the critical role that clinical placements have in the transition of the student therapists to practising therapist. At the same time, nine composite and subscale EI scores increased significantly amongst therapy students. The hypothesis that business students, who do no placements, would show no changes in EI scores, was supported. We cannot state that improved EI competencies are the direct result of clinical placements, as part of the change may have been due to natural emotional maturation that occurs over time, or personal life events external to the placements [30]. However, given that Total EI and some subscale EI scores increased in therapy students, while business students showed no improvement, it is reasonable to infer that clinical placements are a key influence on some EI competencies.

The increase in Total EI and subscale scores demonstrate that an array of competencies central to being an effective therapist improve over the period that full-time clinical placements occur. Our study's findings parallel those of Clarke [18] who reported that EI competencies could be enhanced during workplace learning. Clarke reported that emotional awareness and management influenced students' critical reflection as well as social engagement and conflict management. Therapy

students' EI competencies may have improved because of the daily interactions with patients in vulnerable situations where students had to manage their own and the patient's emotions. Clinical placements immerse the student in a range of emotion-based scenarios on a daily basis where students must show competence in these scenarios. Placements also offer the opportunity for clinical supervisors to give students feedback and encourage the student to reflect on their EI abilities. Thus, students must adapt and enhance their EI skills during placements, otherwise they might be at risk of failing the placement.

Our study's findings are contrary to the Lewis' [22] 3 year study of physiotherapy students who found no significant change in Total EI or subscales but did report that EI was minimally correlated to performance during placements. However, Lewis's study used an ability-based measure. Larin et al.'s [23] study of nursing and physiotherapy students used a mixed-model measure (Emotional Quotient Inventory: Short) and measured EI from before to after their first clinical placements, a period of 1 year. This study found no significant change in EI scores. Emotional intelligence in our study was measured at three distinct points over a 16-month period during which students were primarily undertaking full-time placements.

Of concern were the large proportion of therapy students whose emotional-expression, assertiveness, self-expression, and stress tolerance scores decreased over the 16-month period, attributes that are critical to being an effective

therapist and member of a healthcare team. Prior to their full-time placements, some students may feel confident of being assertive and able to manage their stress. However, they soon realize that the healthcare workplace is a difficult setting to be assertive for novice practitioners, and there is an array of daily stressors to deal with, compared to life as a university student. Clinical placements might have a negative influence on EI abilities if the student experiences poor quality supervision. Grenier [35] reported that clinical supervisors who demonstrate poor communication skills, disengagement, high levels of control, being closed-minded or supervised with intimidation could negatively impact a student's performance. Gribble et al. [27] also reported that clinical supervisors could have a negative impact on the EI competencies of therapy students.

Implications for clinical supervisors, university educators and employers

The findings that Total EI, as well as some Subscales, improve while students are immersed in healthcare settings, should reassure clinical supervisors and university educators. Increased EI scores may result in a therapy student being able to show enhanced empathic behaviours, deal with complex emotional scenarios independently, perform well in team interactions, and ultimately making better clinical decisions.

Clinical supervisors should be cognizant that the EI of some students may be lower than other students, especially during the student's initial full-time placements. Supervisors should take this into account when evaluating a student's performance. Supervisors and employers should also be aware that a student's EI competencies may not be fully developed by the completion of the university program, but should continue to mature as they enter the workforce. Workshops on EI skills, peer coaching, and mentoring programs may be useful to support the development of EI in recent graduates [36, 37]. Further longitudinal research could track new graduate therapists through their first few years of practice to identify if, and when, the EI constructs change during this transition to benchmarked levels of EI for practising therapists.

Low or decreasing EI scores may impact a student's performance and may result in the student being graded as failing the placement. For example, a student with low assertiveness and self-expression might be passive in team meetings and lack decisiveness when they communicate with patients. Students low in independence may be passive during emotional scenarios and turn to their supervisor or colleagues for strategies to deal with the scenario [38]. Students who experience difficulty during placements have been reported to demand additional time from supervisors [39], thus students with lower EI scores may also require additional support, although more research is required to confirm this possibility.

Supervisors need to be aware that a poor supervisory environment might impact a student's EI skills [27]. For example, an intimidating or disengaged supervisor might diminish a student's assertiveness and self-expression, which consequently impacts the student's performance.

Various authors [19, 20] have suggested that training of EI competencies be scaffolded throughout the healthcare curricula. Stoller et al. [40] suggest that EI should not be taught as a stand-alone module, but integrated and revisited with increasing sophistication throughout the curriculum. Integration of EI into healthcare curriculum may result in enhanced EI abilities of students as they commence their first full-time placements, and more importantly when they commence work as new graduates.

Limitations

A control group of therapy students would have been preferred to business students but was not possible given the obligatory requirement to undertake clinical placements. Attrition of participants between the various phases was a limitation of the study, and especially in the business students there was a lack of power and the possibility of a Type II error. In particular, the number of business students who responded at T3 was small and could lead to potential bias in their mean EI change. Because the EQ-i^{2.0} is a self-report instrument that measures the participant's perception of their EI abilities, this study cannot purport that EI skills have improved, only that student's perceptions of their EI competencies have improved. Future studies could use the EQ-i:360 where peers and supervisors actually evaluate the observed EI competencies of the students.

Conclusions

Emotional intelligence is a critical skill for occupational therapists, physiotherapists, and speech pathologists that should be actively fostered during clinical placements and when they first enter the workforce through mentoring, peer coaching and training. Total EI, as well as some EI skills, improve while students participate in healthcare settings because of the daily interactions with patients in distress, pain or vulnerable situations. Clinical supervisors should be aware that the EI of some students may be lower than other students, especially during the student's initial full-time placements and supervisors are encouraged to take this into account when they evaluate a student's performance. Clinical supervisor training should highlight the substantial positive and negative impact that supervisory style can have on the EI competencies of therapy students. Clinical supervisors are encouraged to give students ongoing feedback about their EI abilities, as well as their practical and clinical reasoning skills. Equipping therapy students with more mature EI skills may

ultimately result in stronger clinical placement performance and superior graduates as they enter the workforce.

Abbreviations

EQ: Emotional intelligence; EQ-i^{2.0}: Emotional Quotient Inventory version 2.0

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Authors' contributions

All authors were involved in the development of the research questions and methodology. NG was primarily responsible for data collection. RP created the statistical analysis in SAS. All authors were involved in analysing the statistical findings. All authors read and approved the final manuscript.

Ethics approval and consent to participate

Ethics approval for the study was attained from Curtin University HREC (Approval: HR_2012-68). For all the participating universities, approval to send the online survey link to the specified therapy and business students was obtained.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Paper 4:

Strategies for interprofessional facilitators and clinical supervisors that may enhance the emotional intelligence of therapy students

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Strategies for interprofessional facilitators and clinical supervisors that may enhance the emotional intelligence of therapy students

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ABSTRACT

Emotional intelligence (EI) is a critical skill for occupational therapy, physiotherapy, and speech pathology students (therapy students). This article reports the findings from an analysis of interviews with therapy students ($n = 24$) to determine the aspects of clinical placements that therapy students perceived as influencing the changes in EI scores. This article reports the findings of the qualitative phase of a longitudinal, retrospective mixed methods design. Interviewees were selected using purposive sampling. Of those interviewed, 95% agreed that clinical placements had a significant impact on a range of EI skills with changes being both positive and negative. Content analysis showed that students perceived their EI skills had changed because of the following aspects of clinical placements: student-supervisor interactions, student interactions with patients in emotional distress and being encouraged to reflect and hear feedback on their EI skills. To support and enhance student's EI skills, interprofessional facilitators and profession-specific supervisors are recommended to utilise the following strategies with interprofessional cohorts. Supervisors and facilitators should be emotionally in-tune with students and trust students to work autonomously with patients experiencing emotional distress, pain and loss, especially those with complex needs. Importantly, interprofessional facilitators and direct supervisors should encourage students to reflect on their EI skills both individually and as a group. Supervisors should frequently evaluate and provide feedback to students on their EI skills, at the same time as providing feedback on their practical and clinical reasoning skills.

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Clinical supervision;
emotional intelligence;
interprofessional education;
therapy students

Introduction

Clinical placements for healthcare students are a nexus where theory, assessment, and intervention skills taught in the classroom are practiced and enhanced in authentic settings with real patients under the guidance of experienced practitioners. A primary goal of clinical placements is to prepare healthcare students for unsupervised practice (Hauer et al., 2015), and thus, clinical placements are an opportunity for students to develop a multitude of skills including interprofessional practice, communication, self-management and an array of intrapersonal and interpersonal skills. Emotional intelligence (EI) is the ability of an individual to understand their own and others emotions and ultimately to make decisions using this emotional data during everyday life (Howe, 2008). Emotional intelligence is reported as pivotal for healthcare professionals to be effective when working with patients as well as working in healthcare teams (Borges et al., 2015; Hurley & Stansfield, 2012). As Howe (2008, p. 10) states, "...the professions that work with people, particularly people in need and distress, should be populated by individuals in goodly possession of emotional intelligence". No previous research was identified that investigated whether clinical placements were perceived by therapy students to influence their EI skills, while no literature was identified about how EI competencies can be enhanced in students during interprofessional education

placements. This article reports the findings of a content analysis of interviews with occupational therapy, physiotherapy, and speech pathology students (therapy students) after the completion of their university coursework and clinical placements. Strategies are described that clinical interprofessional facilitators and profession-specific supervisors can implement to support and enhance the EI skills of students during interprofessional education and clinical placements.

Emotional intelligence

The importance of EI within the structure of human cognitive abilities is becoming increasingly recognised with MacCann, Joseph, Newman & Roberts' (2014) indicating that EI should be included as a second-stratum factor of intelligence of similar standing as visual processing and fluid intelligence. When selecting an EI framework on which to base this study, three theoretical constructs were considered—ability-based, mixed- and trait-based models. Each of these constructs has their own evidence base and measurement tools. The ability-based model, first proposed by Mayer and Salovey views emotions as significant sources of information to assist the individual to make sense of and navigate the social environment. The ability-based model purports that individuals vary in their capacity to process information of an emotional nature (Salovey & Mayer, 1990). The model divides EI into

four types of abilities: perception of emotion in oneself and in others, assimilation of emotion to facilitate thought, understanding of emotion, and managing and regulating emotion in self and others. Mixed models encompass a broader array of concepts than ability-based models incorporating "...both abilities and qualities such as personality and motivational traits that assist that person in using EI in real life" (Zeidner, Matthews, & Roberts, 2010, p. 26). Bar-On (1997), who first proposed the mixed model, stated "...ultimately, being emotionally and socially intelligent means to effectively manage personal, social and environmental change by realistically and flexibly coping with the immediate situation, solving problems and making decisions. To do this, we need to manage emotions so that they work for us and not against us" (Bar-On, 2006, p. 4). Trait-based EI is described by Petrides, Vernon, Schermer, and Veselka (2011) as an array of emotional self-perceptions, such as adaptability, assertiveness, emotion management, relationships, and self-motivation, which operationalise the affective aspects of personality. Cherniss, Extein, Goleman, and Weissberg (2006, p. 239) have defended the differing constructs of EI stating, "...the generation of several versions of EI theory is a sign of vitality in the field, not a weakness. IQ theory... after nearly 100 years of research and theory, there still is not a consensus about what IQ is or the best way to measure it".

The EI construct selected for this study, the Model of Emotional-Social Intelligence (Figure 1), is a mixed model, was initially conceptualised by Bar-On (1997) and modified by Multi-Health Systems (2011). This model was selected as it encompasses self-perception, self-expression, interpersonal, decision-making, and stress management abilities, skills that are critical for a therapist to use when working with healthcare consumers and in interprofessional teams (Stagnitti, Schoo, & Welch, 2010). Thus, for the purposes of this study, 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). The model of emotional-social intelligence (Figure 1) presents EI as a combination of five Composite and 15 Subscale components. A Well-being Indicator is also included—Happiness.

Barr (1998) suggested eight essential characteristics for collaborative practice. Of the eight characteristics, three

require EI abilities, namely: working with other professions to effect change and resolve conflict; tolerating differences, misunderstandings and shortcomings in other professions; and entering into interdependent relations with other professions. Furthermore, Banfield and Lackie (2009) identified competencies, performance criteria and behavioural indicators for interprofessional facilitation and collaborative patient-centred practice, many of which also require EI competencies. Research has indicated that healthcare professionals with higher EI scores have a positive impact on patient satisfaction levels (Azimi, AsgharNejad Farid, Kharazi Fard, & Khoei, 2010; Weng, Chen, Chen, Lu, & Hung, 2008), caring behaviours (Corcoran & Tormey, 2012), reduced job-related stress (Karimi, Leggat, Donohue, Farrell, & Couper, 2014), higher rates of job satisfaction (Miao, Humphrey, & Qian, 2016), and improved team performance (Quoidbach & Hansenne, 2009). As such, healthcare professionals and interprofessional teams proficient in EI skills may be more effective in dealing with patients in vulnerable emotional situations and working effectively together.

Emotional intelligence has been shown to be malleable in adults unlike cognitive intelligence (IQ) which is relatively fixed (Stein & Book, 2011). Emotional intelligence tends to increase due to a combination of influences. A Multi-Health Systems (2011) study demonstrated that EI increases via natural maturation from the teenage years and into the sixties. These results were reproduced using an Australian sample (Multi-Health Systems, 2012); however, both these studies are cross-sectional and not longitudinal in nature. Zeidner et al. (2010) report that a range of environmental factors such as the affective interactions between family, friends, teachers, coaches and others may work together to drive the natural maturation of EI abilities in the child and teenage years; however, minimal research was identified investigating the factors that influence the development of EI in adulthood. Researchers have shown that EI in adults can be enhanced by participating in EI focussed training and workshops (Boyatzis & Saatcioglu, 2008; Flowers, Thomas-Squance, Brainin-Rodriguez, & Yancey, 2014; Zijlmans, Embregts, Gerits, Bosman, & Derksen, 2015). Another method that may assist EI development is workplace learning which has been defined as "...the type of learning that occurs while performing the job itself", such as mentoring, coaching, team learning, increasing job challenge and incidental learning that arises

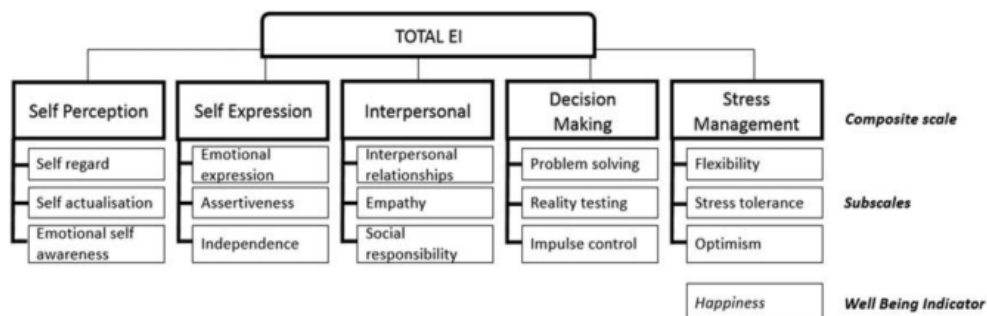


Figure 1. Model of emotional-social intelligence showing the composite, subscales and well-being indicator (Multi-health systems, 2011).

through doing the job” (Clarke, 2006, p. 448). Clarke (2006, 2010) reports that EI skills in healthcare practitioners and teams can be developed via workplace learning.

Clinical placements have been described as the “...most influential learning experience in a student’s journey to becoming a competent health professional” (Siggins Miller Consultants, 2012, p. 3). Clinical placements are obligatory for therapy students in Australia and generally occur in all years of undergraduate therapy programmes, although longer full-time placements that are the focus of this study tend to occur towards the end of the course (Stagnitti et al., 2010). The attributes required to facilitate interprofessional education placements for healthcare professionals are well documented (Banfield & Lackie, 2009). As the Australian Government—Department of Health (2015, p. 12) state, the supervisor requires “...high quality level of interpersonal engagement (requiring) higher order interpersonal skills involving feedback, active listening, remedial discussion and positive reinforcement”. The role of the interprofessional facilitator (defined for this paper as the healthcare professional whose role is to coordinate the interprofessional education clinical placement) is focussed on managing the learning environment, facilitating interprofessional learning, role-modelling professional behaviours and assessment of learning (Emerson, 2004; Marshall & Gordon, 2010), whereas the practical and clinical reasoning skills are generally considered the domain of the profession-specific supervisor (Stagnitti et al., 2010). Gillieatt et al.’s (2014) study of an interprofessional training programme for clinical supervisors used Proctor’s model for student supervision as the underpinning conceptual basis of the course. Proctor’s model (1987) proposes three main functions of the clinical supervisor: (1) administrative, (2) formative or educative, and importantly for this study, (3) a restorative or supportive role. This supportive or restorative role would require EI skills to be demonstrated by the interprofessional facilitator and profession-specific supervisors. There is no current literature on the impact of the supervisor and clinical placement environment on the EI abilities of students. Nor is there literature suggesting strategies that interprofessional facilitators could use to enhance the emotional intelligence of individual students or the interprofessional cohort of students.

Only a few studies have tracked the EI of healthcare students during their university programmes. Gribble, Ladyshewsky, and Parsons (2017) reported that occupational therapy, speech pathology and physiotherapy students’ EI scores tended to fluctuate during final year clinical placements with assertiveness, problem-solving, impulse control, self-actualisation, and stress tolerance competencies decreasing in 33% or more of the students over a 6 month period. Benson, Martin, Ploeg, and Wessel (2012) examined changes in EI of 52 nursing students over a four-year period, finding that emotional adaptability, situational coping, and flexibility changed significantly. On the other hand, Lewis (2011) tracked 87 physiotherapy students over 3 years with no significant change in EI scores but did report that students who failed their licensing examination tended to have lower EI scores. Similarly, Larin et al. (2011) also found no significant change in EI amongst 73 nursing and 60 physiotherapy

students from the beginning of their course to after their first clinical placement. Although Stratton, Saunders, and Elam (2008) did not track EI specifically, their study of 64 medical students found that the students’ ability to effectively manage emotions fluctuated across the undergraduate course. No studies were identified that tracked changes in EI scores in students who completed interprofessional education placements.

Given that clinical placements are a form of workplace learning where healthcare students are expected to practice a variety of skills including EI, investigating the impact of clinical placements on the development of EI in therapy students has merit. The majority of research into clinical placements for therapy students appears to focus on the role of the supervisor and the learning environment on the student’s performance or satisfaction. Research reports that the relationship between the student and supervisor has a significant influence on student’s satisfaction with a clinical placement (Chan, 2004; Gillieatt et al., 2014; Proctor, 2001). Pront, Gillham, and Schuwirth (2016) found the themes that underpinned quality clinical experiences and supervision were when the supervisor was able to “partner”, “nurture”, “engage” and “facilitate meaning” with the student. On the other hand, Siggins Miller Consultants (2012) reported that poor quality placements were characterised by occupational stress and a culture of incivility towards the student.

During clinical placements, students learn to work with healthcare consumers experiencing an array of conditions including pain, emotional distress and loss. Students also work closely with clinical supervisors who may have a positive or negative influence on student’s performance during clinical placements. Thus investigating if, and how, EI may change during clinical placements from the student’s perspective is warranted. As such, the following questions were formulated: Do therapy students perceive that changes in their EI skills are due to their clinical placements? If so, what aspects of the clinical placement do therapy students perceive as influencing changes in their EI skills?

Methods

This article reports the findings of the qualitative phase of a longitudinal, retrospective mixed methods design (Plano Clark et al., 2015). A mixed methods design was selected. Qualitative data were collected to understand changes in the participants’ quantitative data (Plano Clark et al., 2015). The quantitative stage (Phase 1) of this study collected EI scores and demographic data via online questionnaires at three time-points over the final 16 months of the therapy students’ university programme. The qualitative stage (Phase 2) used semi-structured interviews to investigate the perceived impact that clinical placements had on EI scores. The study was approved by the university’s Human Research Ethics Committee.

Participants

Differing sampling techniques were used for the two phases. Phase 1 participants were recruited from a convenience

sample of third-year undergraduate occupational therapy, physiotherapy, and speech pathology students ($n \sim 650$) enrolled at four Australian universities. These three therapy professions were chosen because they frequently work together with similar patients in interprofessional teams. Forty per cent of the sample ($n = 261$) completed the first questionnaire, with only 109 students participating at all three timepoints. Reasons for the non-responders were not sought, but by the third questionnaire, students had completed their university course and may have disengaged from using the university email system.

Interviewees for Phase 2 were recruited using purposive sampling. The inclusion criteria to be invited to interview were (a) the participant had completed the three questionnaires and (b) analysis of participant EI results showed a positive or negative change of eight points or more in four or more EI scores. A change of eight points was selected, as the mean change in scores for all participants from T1 to T3 was 4.16 (SD 2.1). To answer the research questions, it was critical to interview students who had registered relatively large positive and negative changes in EI scores. Participants meeting the inclusion criteria ($n = 71$) were emailed. Ultimately, 24 participants agreed to be interviewed despite multiple email requests. Reasons for a relatively low response rate may have been that participants had completed their university course and disengaged from the university email system. Interviews were conducted by the researcher either face-to-face ($n = 18$) or over the phone ($n = 6$). After the interview, participants were provided AUD\$20 to reimburse the participant's time and to cover costs such as traveling, parking at the university and phone calls. The reimbursement 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). Because of the time needed to analyse the Phase 1 data and the Christmas and summer holiday period in Australia, the final interviews were completed 16 weeks after the final questionnaire was completed.

Data collection

Measurement of emotional intelligence

The model of emotional–social intelligence measures EI with the Emotional Quotient Inventory, now in its second iteration known as the Emotional Quotient Inventory 2.0 or EQ- $i^{2.0}$ (Bar-On, 1997, 2006; Multi-Health Systems, 2011), a self-report tool measuring emotional and socially intelligent skills. The EQ- $i^{2.0}$ is a 133 item self-report tool. Participants answer questions such as: “I’m in touch with others feelings” and “I feel overwhelmed when I need to make a decision” using a five-point scale from “Never/Rarely” through to “Always/Almost Always”. Raw scores are converted to a standard score for each of the 22 EI domains. For all 22 domains, scores above 110 are considered high, with scores between 90 and 110 considered normal and scores below 90 considered low. The highest score possible on each domain is 135 with the lowest score being zero. Test-retest reliability of the EQ- $i^{2.0}$ for Total EI was high ($r = 0.92$) for participants who were tested 2–4 weeks apart but lower ($r = 0.81$) when measured

8 weeks apart. Internal consistency demonstrated Cronbach's alpha scores of 0.97 for Total EI, composite scales ranged from 0.88 to 0.93 with 0.77 to 0.93 for the 15 subscales (Multi-Health Systems, 2011). The EQ- $i^{2.0}$ also calculates an inconsistency index, positive impression, and negative impression score, which resulted in 11 participants being excluded from interviews.

Semi-structured interview process

The same researcher conducted all 24 interviews. Interviews ranged from 30 to 75 minutes. Participants signed a consent form prior to the interview. Interviewees were read the Multi-Health Systems (2011) definition of EI, and then, the interviewer provided a description of the model of emotional–social intelligence. Interviewees were provided with a printout of their 22 EI scores at the three timepoints. Interviewees who were contacted by telephone were emailed their EI scores beforehand. For each interviewee, the researcher had highlighted four to six EI scores that had increased or decreased by eight points or more. For each EI score, the interviewee was provided with the definition for that EI domain (from Multi-Health Systems, 2011). The interviewee was then asked, “Do you agree that this EI score has increased (*or decreased*) over the last 16 months?” This question was included to clarify if the interviewee perceived that the specific EI ability had changed, and if so, in the direction indicated. If the interviewee responded positively, the researcher then asked, “Do you think the change was due to your clinical placements, personal factors or a combination of the clinical placements and personal factors?” If the interviewee agreed the change in EI score was due to clinical placements, they were asked, “What occurred during your clinical placements that may have influenced this change in this EI score?”

Data analysis

Content analysis of the interviews followed an inductive category development approach as suggested by Hsieh and Shannon (2005). Interviews were transcribed verbatim by a professional transcription service. The researcher (NCG) checked the transcripts against the recording for accuracy. Using NVivo10, each transcription was read (by NCG) to gain a sense of the whole before deriving codes. Open coding occurred by the grouping similar codes into sub-themes and labelling them. Finally, the sub-themes were congregated to create the main themes. A summative approach (Hsieh & Shannon, 2005) was then used by counting the frequency of themes and quotations used to create each theme and sub-theme from the interview transcriptions. According to Plano Clark et al. (2015), a longitudinal, retrospective mixed methods study uses qualitative data collected at the final data collection point to examine respondent's recollections of what was measured quantitatively. Thus, the number of students reporting each theme provides an indication of the strength of each theme. To add rigour and credibility, an occupational therapist (KE), who has experience supervising therapy students, scrutinised the categorisations by being randomly assigned 25% of the interview transcriptions to review the tentative categorisations. The researcher (NCG) and occupational therapist (KE)

Table 1. EI scores discussed during interviews, ordered by frequency discussed.

	Frequency discussed	Score increased >8 points	Score decreased >8 points	Max. and min. individual change in EI scores between T1–T3
Empathy	12	7	5	+19 to –19
Emotional expression	10	5	5	+21 to –21
Independence	10	8	2	+19 to –19
Flexibility	10	9	1	+24 to –8
Assertiveness	9	3	6	+7 to –26
Reality testing	9	7	2	+14 to –18
Stress management	9	6	3	+20 to –13
Optimism	8	7	1	+16 to –22
Self-actualisation	7	4	3	+24 to –19
Self-regard	6	4	2	+13 to –15
Emotional self-awareness	6	3	3	+17 to –15
Stress tolerance	5	3	2	+22 to –10
Self-expression	4	2	2	+14 to –19
Decision-making*	4	4	0	+15 (no decline)
Impulse control	4	2	2	+24 to –18
Self-perception	3	2	1	+24 to –16
Social responsibility	3	2	1	+14 to –11
Problem-solving	3	2	1	+12 to –9
Interpersonal relationships	2	2	0	+17 (no decline)
Happiness	2	1	1	+14 to –17
TOTALS	126	81 (64%)	45 (36%)	

held on-going discussions to fine-tune the categorisations. To increase internal validity, member checking was conducted via phone with six (25%) of the original interviewees. Two questions were posed: “Do you recognise the categorisations from your clinical placements?” and; “Do you find the descriptions illustrative of the categorisations?” All interviewees accepted the categorisations.

Results

Of the 24 interviewees who participated in this study, 18 were female and six male, and 12 were occupational therapy students, six speech pathology, and six from physiotherapy. Interviewees were 22–26 years, except one who was 49 years. The students had completed between three to six clinical placements in metropolitan, rural and international locations over the 16-month period of the study with a mean total length of all clinical placements being 115 days (SD = 11). Models of supervision during the placements included one supervisor with one student, multiple students working with one supervisor, one student being supervised by multiple part-time supervisors and self-directed placements with minimal direct supervision. Eleven per cent of the students reported that they participated in a placement designated specifically as an interprofessional placement. For example, one university runs an aged care residential placement employing a full-time interprofessional facilitator on-site to oversee occupational therapy, physiotherapy, nursing, social work and speech pathology students’ interprofessional education placement. These students also have access to a profession-specific supervisor. In some cases in this article, the term “supervisor” is used to indicate the interprofessional facilitator and profession-specific supervisor.

Each interviewee was asked questions about four to six of their EI scores resulting in 126 EI score changes being discussed across all interviews. Most interviewees agreed (95%; n = 120) that the increase or decrease in EI score was due to

their clinical placements, with only 5% (n = 6) perceiving that the EI change was due to personal factors only. Table 1 details that the frequency each EI score was discussed during the interviews, whether scores increased or decreased and the range of the change in scores for each EI domain.

Content analysis

Content analysis identified two key stages where EI was impacted during the clinical placement. Initially, during the first few days of full-time placements, students experienced a lack of confidence and feeling overwhelmed which induced a decline in some EI skills. Secondly, over the remainder of the placements, EI skills tended to move in positive or negative directions. Themes and sub-themes are presented using quotations from interviewees. Interviewees are identified by a code (e.g. 06-F-OT) that indicates the interviewee was number 06, who was a female, occupational therapy student.

Initial stages of clinical placements

The findings indicate that the first week or so of a placement appears to be a critical stage where student’s EI abilities are challenged. During the initial stages of clinical placements, students (n = 17; 71%) reported feeling under-confident, even fearful, when confronted by patients experiencing emotional distress, pain or loss for the first time:

“You start (placements) with so much fear in your head. I was quite unsure of myself”. (23-F-PT)

“I had difficulty whenever the patient was having a tough time or crying. I’m always hesitant as to how to handle that. And I think I’m just not really old enough or have had the experience to deal with situations like that”. (06-F-OT)

Students reported that starting placements generated a dose of reality on how crude their EI skills actually were, with some

reporting an initial reduction in EI skills. This was especially evident with assertiveness where 67% (n = 9) of those interviewed reported a decline in ability:

“When you hit those full-time fieldwork pracs you actually get dropped down a notch and go, phew... my empathy is not as good as it could be, or I could be more assertive, or my self-regard is actually dropping off here. It’s a lot harder to be empathetic than I thought”. (04-F-ST)

“I think prac is really good at poking holes in your understanding of yourself. The expectations of what I thought might be required during prac were vastly different to what I actually needed in the workforce”. (02-F-OT)

During clinical placements

The second stage of EI change occurred during the fieldwork placement where the three main themes of clinical placements that the students perceived as influencing their EI skills were: supervisor interactions, patient interactions, and reflection and feedback on EI skills. Within each of these, sub-themes were identified which influenced EI in an upward or downward direction depending on the nature of the interaction. Positive interactions led to growth in EI scores, whereas negative interactions caused a decline in EI scores. Ultimately, sub-themes were included if 50% or more of the interviewees reported the facet of the clinical placement to be influential in the increase or decrease of EI scores. Table 2 presents the themes and sub-themes during clinical placements that were perceived to influence EI skills.

Patient interactions

Full-time clinical placements are the first time that many therapy students assume responsibility for a caseload where they are required to interact daily with patients experiencing an array of emotional scenarios. Two sub-themes were identified: confronting scenarios and confidence increasing.

Confronting scenarios

Students (n = 18, 75%) recounted numerous stories where they were confronted by scenarios they had never dealt with previously. Students reported that the opportunity to deal with patients in emotionally vulnerable situations on a daily basis was a positive influence on EI skills. Due to lack of experience, students initially had difficulty knowing how to react and what to do when confronted with patients in distress:

“Just being exposed to clients like that definitely, helps. Because in my day-to-day life I don’t really experience people crying or telling me the worst thing that’s ever happened to them all the time. So when you are exposed to that situation more clinically, I grew”. (11-F-OT)

“...I was working with a patient newly diagnosed with cancer. She was already palliative, so she was experiencing a complete change ... she had a young daughter... I felt like I was lacking empathy because I had these jobs to do. I needed to find out about her home and that sort of thing. I just felt that I wasn’t appropriate, and I couldn’t show enough empathy. I just felt as though I shouldn’t have been there”. (24-F-OT)

Confidence increasing

After the initial anxieties, a positive outcome of working alongside patients in complex emotional states was that students (n = 18, 75%) perceived an increased confidence in their ability to manage these scenarios using a range of EI skills:

“...I think the change comes with more confidence. When you start to feel like you are in the “groove” of it a bit more, and you get the hang of things. I think it’s easier to feel more assertive when you feel like you know what you are doing”. 15-F-SP

“...(during prac) I learnt on a deep level what empathy actually means. My confidence to be empathetic grew when I realised it was not about me overlaying my own experience, but being open to what they were bringing and experiencing and hearing what they were going through. You can read all you like about empathy, but being empathetic is completely different”. 01-F-OT

Supervisor interactions

The critical role of the interprofessional facilitator and profession-specific supervisor is highlighted by interviewees reporting that the quality of the student–supervisor interactions was perceived as a critical component influencing the change in EI scores, with a range of positive and negative influences being identified. The positive influences included the supervisor being emotionally in-tune and trusting the student as well as role modelling EI skills.

Supervisor emotionally in-tune with the student

Students (n = 22, 92%) suggested that supervisors who were genuinely concerned and mindful of when the student needed emotional support assisted the student to increase their confidence in a range of EI skills, as indicated by these quotations:

“...I was crapping myself about running an anxiety/depression group. But I was quietly confident because I had a really good supervisor sitting next to me. I knew he was just pushing me... he realised where my own anxiety would stop me from pushing myself. He gave me enough anxiety to perform, but not too

Table 2. Themes and sub-themes of clinical placements that influence EI skills, including frequency and number of quotes from the interview transcriptions.

Themes	Sub-theme	Interviewees discussing this theme (n/24)	Number of quotes related to this theme
Patient interactions	Confronting scenarios	18 (75%)	171
	Confidence increasing	18 (75%)	142
	Emotionally engaged	22 (92%)	26
Supervisor interactions	Trusts the student	19 (79%)	122
	Role modelling EI skills	13 (54%)	51
	Negative influences	22 (92%)	76
	Feedback on specific EI skills	16 (67%)	74
Reflection and feedback	Reflective practice	19 (79%)	46

much where I started fearing him. He made me feel safe to explore". (07-M-OT)

"My supervisors were fantastic. They'd say 'It's okay. Take a minute' when I needed it. Just having that kind of reassurance to be allowed to step out for a couple of minutes and just calm myself down. It was nice to be 'heard'. The good supervisors understand you and they let you grow". (23-F-PT)

Students (n = 14, 58%) reported that supervisors who understood that they were a student, novice therapist with minimal experience, allowed EI skills to flourish more than supervisors who expected the student to be performing beyond a graduate level, exemplified by these quotations:

"...they were patient with the fact that I was still a student, and didn't have a lot of experience. I had decent theoretical knowledge base, but my clinical skills were not up to standard or well developed. She knew the areas and types of practice that would help and benefit me most". (09-M-PT)

"...I had this great supervisor. She realised I was a bit nervous on my first day. She asked me questions and she would initiate conversations with me and that made me more comfortable to speak my mind. I just felt like I couldn't talk to this other supervisor". (07-M-OT)

Supervisor trusts the student

Students (n = 19, 79%) frequently discussed that EI skills, such as independence and self-regard, improved when a supervisor trusted and valued the student, for example, by allowing them to practice independently with patients even when they were struggling, which allowed the students to be true to themselves. Positive outcomes are illustrated by these quotations:

"My supervisor had the faith and belief in me to do it by myself which was really good. So that gave you the confidence to work with patients independently. During my first placement, I wasn't given that autonomy". (03-M-PT)

"I think I wasn't so stressed because the supervisor showed that she was confident in my abilities, and I felt comfortable—confident in my abilities. So once she did that, I could relax and be myself". (22-F-SP)

Conversely, this student highlighted that the negative impact supervisors can have when they show a lack of trust by taking over a patient treatment session from the student:

"I had other supervisors that talk over you and just take over when I thought I was doing things perfectly. The supervisor would go "Oh, you are not going say anything. I will just do it". (23-F-PT)

Role modelling of EI skills

Students (n = 13, 54%) appeared to flourish when they were able to observe their interprofessional facilitator or supervisor using EI skills with patients in emotionally vulnerable states or dealing with difficult patients, as illustrated by these quotations:

"...on my first day, a patient turned round and said 'fuck off'. My supervisor was so calm and held her hand, talked calmly and spent time just being with her. Later we talked about it. I know that watching my supervisor helped me grow". (01-F-OT)

"... I'd see my supervisor do something and my mind would be blown and that would make me sort of reset my view of myself and where I am at". (02-F-OT)

Negative influences of supervisors

The majority of students (n = 22, 92%) recalled times when supervisors had a negative impact on their EI abilities. These students reported that they tended to shut down emotionally when supervisors instigated an overt power differential or hierarchy between the student and the supervisor or gave overly critical feedback:

"...the way it felt to me is like the supervisor's 'God'. You've got to try and impress God. She just had that attitude that you've got to do everything you can to please them. I like being on the same footing". (07-M-OT)

"Whenever she'd ask me a question and I'd say something, my answer was always wrong. She made me feel bad about myself. And so I didn't really want to say anything. I shutdown. I had to". (08-F-SP)

This student highlighted how even negative body language, can result in a student shutting down emotionally and cognitively:

"I'm applying the monofilament to this guy's hand (to measure a patient's sensitivity to touch in the hand), and I saw out of the corner of my eye, the supervisor dropping her head. And I immediately felt intimidated. I just fell apart. I couldn't think what to do next". (07-M-OT)

Similarly, when these students perceived that the supervisory style induced a sense of fear they reported waning EI skills:

"Like one of those supervisors who feels that students develop better when you put fear in them. When you put fear in them it means that they'll perform because they need anxiety to perform". (07-M-OT)

"With this supervisor I felt put back—actually, belittled. My supervisor had overwhelmed me and it really "squished me". So, even though I had some improvement in some of my individual clients, the whole experience "dumbed" my self-regard. My own success with those clients wasn't big enough to overcome the supervisor's impact on me". (22-F-SP)

Reflection and feedback

Students perceived that EI was enhanced when reflection and feedback focussed on the student's EI skills, as well as assessments, interventions, practical skills and verbal and written communication.

Feedback on specific EI skills

These students (n = 16, 67%) reported a growth in skills when supervisors promoted regular, clear and honest feedback on specific EI abilities alongside practical skills:

"(The supervisor) pulled me up for being not assertive enough. They would challenge me to do better. They gave me a few phrases to use next time which were good ideas". (22-F-SP)

"When you're working with a supervisor who's watching you every day and giving you feedback on things you're doing right, things you're doing wrong. You get very good at noticing more

things about yourself. And how you're feeling about things". (05-M-OT)

"... (great supervisors) give me feedback that's really in tune with what I think. It's not just generic. It's really specific to you. It's direct". (15-F-PT)

However, supervisors who provided mostly negative feedback tended to hinder the student's EI skills, such as this student:

"...there are great supervisors who are firm with you, who are pushing you, who are challenging you, but it's done in a safe environment. Whereas when you are in the environment of fear, where there is a hierarchy. That hinders your learning, your engagement and your use of your emotional intelligence skills". (07-M-OT)

Reflective practice

Students ($n = 19$, 79%) reported using an array of techniques to reflect on their practice skills, as well as their EI abilities including journaling, formal and informal sessions with supervisors and debriefing with other students on placement:

"My paediatric placement was a really positive experience. My supervisors were constantly prompting me to reflect after sessions. They were really good at tapping into how I was feeling. And how I was I was dealing with kids with disabilities". (06-F-OT)

"On my international prac I was at my most emotionally expressive because that was a more challenging prac in terms of emotions, and what you're confronted with. Being with lots of other prac students all the time, living together, is very challenging, and so you do have to be able to express how you're feeling and what you're thinking about". (11-M-OT)

"I love looking back at my journal from my (international placement). I can really see where I was at. I can see how I've grown. I can see how good and bad I was. I can go back and re-reflect and relearn. I often wrote 'this happened' and 'the nurses did this' and 'I was really offended'. I go back a few days later and think 'hang on a tick, what I can learn from this'. (01-F-OT)

Discussion

This study has ascertained that 95% of the therapy students who were interviewed perceived that clinical placements had an impact—both positive and negative—on their EI skills. Interviewees frequently described supervisors and interprofessional facilitators as skilful mentors and educators who set up a safe learning environment that resulted in student's reporting improving EI skills. However, students also described supervisory styles that hindered the development and, in some cases, crushed the student's perceived EI skills. The role of creating a positive learning environment where students can observe, practice, and gain feedback on their EI skills should fall equally on both the interprofessional facilitator and profession-specific supervisor. Supervisors need to be particularly cognisant of the fluctuating nature of student's EI abilities in the first week of so of placements where students are reporting feeling vulnerable and underconfident. Facilitating interprofessional education and clinical placements for healthcare students is challenging and demanding for the interprofessional facilitator and profession-specific supervisor (Evans, Shaw, Ward, & Hayley, 2016). No previous studies have identified strategies that

interprofessional supervisors and profession-specific supervisors can implement to support and possibly enhance the EI competencies of students.

The key influences on EI skills during clinical placements were the student-supervisor interactions, students working with patients experiencing emotional distress, pain or loss, and students receiving feedback and reflecting on their EI skills. These themes parallel findings from other studies (Black et al., 2010; Pront et al., 2016); however, none of these studies explored the impact of clinical placement environment on EI skills and therapy students' capacity to cope with emotional demands during placements. Black and colleagues' (2010) study followed physiotherapists during their first year of practice positing that "interactions with patients/caregivers", "interactions with co-workers/mentors" and "reflection, informal and formal continuing education", work together to increase their confidence and professional identity. Similarly, our study showed that therapy students undertaking clinical placements in a positive learning environment initially reported self-doubt about their ability to deal and cope with emotional situations. However, over time and with more exposure to patients and complex emotional scenarios, their belief in their EI skills increased. Alternately, interviewees who reported placements with a poor supervisory style or learning environment detailed a decline in EI skills resulting in them tending to shut down emotionally and return to a state of internal self-doubt.

High-quality facilitation of interprofessional placements is vital for the student cohort to experience a meaningful and worthwhile placement (Nicol & Forman, 2014), while researchers have frequently reported the quality of the student-supervisor relationship as an influential factor in effective supervision (Hall, McFarlane, & Mulholland, 2012; Tomas, Giberson, Black, & Pinkerton, 2008). Similar to our study, Pront et al. (2016) found that the key attributes of quality clinical placements occurred when the supervisor was able to "partner", "nurture", "engage" and "facilitate meaning" with the student. A key learning for interprofessional facilitators and supervisors is that they need to demonstrate and role-model EI skills within their role. Our study has shown that supervisors, who use these strategies, tend to have a positive influence on the EI skills of therapy students.

The students' perception that supervisors can have a negative effect on student's EI is an important finding of our study. These findings are important to interprofessional facilitators and supervisors because if the student-supervisor relationship is poor, a student might reduce their emotional expression and lose confidence in verbalising their thoughts and feelings. Ultimately, a supervisor might see this emotional shutdown as a student whose overall performance and clinical reasoning are declining, and possibly on a pathway to failing the clinical placement. These findings align with Kanno and Koeske (2010) who reported that students who perceived their supervisor to be inadequate recounted emotional exhaustion, burnout, and diminished confidence in clinical reasoning.

Although the findings that positive and negative supervisory styles impact the performance of students during clinical placements are not new, our study is unique in showing

the impact on perceived EI abilities. Our findings should be noteworthy for interprofessional facilitators, supervisors, and university academics. Clinical supervisors are recommended to utilise the following strategies with students, which may result in an improvement in EI skills.

Traditionally, interprofessional facilitators and profession-specific supervisors have encouraged students to reflect on their practical skills, clinical reasoning, ethical and professional behaviours (Mann, Gordon, & MacLeod, 2009; Tan, Ladyshewsky, & Gardner, 2010). Previous research has shown that reflection between therapy students and practitioners can enhance clinical reasoning and allowed students to recognise the value and importance of reflective practice (Williams, Wessel, Gemus, & Foster, 2002). Our study shows that students, who reflect on their EI skills, perceive growth in these abilities, with the supervisor being the preferred source of reflection. Students also reported using a written journal and conversing with other students as beneficial sources of reflection. Thus, interprofessional facilitators and profession-specific supervisors are encouraged to reflect with students, not only practical skills and clinical reasoning, but also on the emotional milieu of workplace, patients' emotional states and EI skills.

Many interviewees advocated that interprofessional facilitators and profession-specific supervisors allow students to work autonomously with patients with complex emotional issues (when considered safe by the supervisor) earlier in clinical placements. Students reported wanting to be trusted by their supervisor. Enabling them to work autonomously with complex emotional scenarios displays to the student that they are a valued member of the team. These suggested strategies are underpinned by Bandura's (1994) sources of self-efficacy development, particularly mastery and vicarious experiences. Bandura considers mastery experience to be the most influential source of self-efficacy. Students in our study confirmed this by highlighting the importance of being trusted to work with patients in emotionally vulnerable situations and subsequently experiencing success. Bandura (1994, p. 3) states that "...success build a robust belief in one's personal efficacy". Thus, supervisors who tend to shield students from complex emotional or distressed patients may be detrimental to students EI development. Vicarious experiences require the student to observe others in action (Bandura, 1994), and thus, the role-modelling by supervisors on how to react and behave in emotional scenarios is critical to students enhancing their EI skills.

The majority of students interviewed discussed the importance of a supervisor who is emotionally engaged with the student. Interprofessional facilitators and profession-specific supervisors are encouraged to check the emotional status of individual students, as well as the interprofessional student cohort. Supervisors can maintain an emotional connection with the students by asking them questions about their emotional state. Supervisors need to avoid inducing a sense of fear in the student by being aware of the power differential inherent in student-supervisor relationship and treating the student as a peer as much as possible. These suggestions align with Fredrickson's (2001) broaden-and-build theory, whereby immersion in an environment with more positive emotions can enable individuals' to build their own personal resources,

including social and psychological skills, thus eliciting a wider array of thoughts and actions within the person. Fredrickson's presents evidence that negative emotions narrow the thoughts and actions that come to mind. Yet this must be tempered when students on clinical placements are under-performing and critical and constructive feedback is required that may elicit negative emotions. No matter how a student is performing during placements, clinical supervisors are encouraged to be in-tune with student emotionally and understand how they deal with the varying emotional states at play during a clinical placement.

In relation to study limitations, the EQ-i^{2.0} used to measure EI is a self-report instrument that ultimately measures participant's perception of their EI skills, not actual ability. Future studies might use ability-based measurement tools to track EI changes. The study did not focus specifically on students who had completed interprofessional education placements; however, 11% of students reported that had completed such a placement. Future studies could focus solely on the interprofessional facilitator. The inclusion criteria for interviews required participants who reported large changes in personal EI scores. Future studies could include students who had minimal changes, to see if and how clinical placements influenced their perceived EI scores. Interviewees were only from one state of Australia, and it would be beneficial to replicate this study in other geographical contexts. Only undergraduate students were included in the study in an attempt to homogenise the sample; however, future studies could include post-graduate students who tend to be older and possibly more emotionally mature. The timing of the final questionnaire leads to a lower than expected response rate. This reduced the number of participants that met the inclusion criteria for interviews. As a result, those students that volunteered to be interviewed may have an element of selection bias. The response rate and non-response bias may also be potential limitations. The timing of the final questionnaire also delayed the interviews, so that some interviews were completed 16 weeks after the final clinical placement. This may have influenced the student's recall of placement experiences.

Concluding comments

Emotional intelligence is seen as a critical skill for interprofessional teams and therapists that should be fostered before and during clinical placements by interprofessional facilitators and supervisors. The findings of this study are important to university educators who prepare clinical supervisors in preparation for hosting students during clinical placements. Clinical supervisor training should highlight the positive and negative impact that supervisory styles might have on the EI skills of therapy students. Supervision by interprofessional facilitators and supervisors that supports, rather than crushes, EI development may result in the maturation of therapy students EI skills, which may result in stronger clinical placement performance and ultimately, superior graduates entering the workforce.

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Declaration of interest

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Paper 5:

Changes in the emotional intelligence of occupational therapy students during full-time fieldwork placements: a longitudinal study

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Changes in the emotional intelligence of occupational therapy students during practice education: A longitudinal study

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Abstract

Introduction: Emotional intelligence competencies assist occupational therapists in responding in a manner that enables them to be effective healthcare practitioners.

Method: This longitudinal study tracked the emotional intelligence of occupational therapy and business students using the Emotional Quotient Inventory 2.0 at three time-points over the final 16 months of their university programme.

Results: Undergraduate occupational therapy students ($n = 139$ at time-point 1; $n = 52$ at time-point 3) completed a mean of 117 days of practice education. Before occupational therapy students commenced placements, emotional intelligence scores were significantly lower than population norms in self-regard, self-expression, assertiveness, independence, problem-solving, stress management, stress tolerance and flexibility. By the end of their programme, students reported significant increases in the emotional intelligence realms of total emotional intelligence score, self-perception, decision-making, self-actualisation, emotional self-awareness, independence and reality testing. However, assertiveness, problem-solving and stress tolerance remained relatively low, and other emotional intelligence domains remained below the population norms. The business students who did zero practice placements showed no increase in any emotional intelligence domains over the same period.

Conclusion: Emotional intelligence skills are malleable and can improve during practice placements. Supervisors and employers should encourage students and new graduates to practice their emotional intelligence skills under supervision and then provide feedback, so they are better prepared for the emotional demands of healthcare workplaces.

Keywords

Occupational therapy, emotional intelligence, practice education, university students

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Introduction

People who experience pain and distress need healthcare professionals, including students undertaking practice education, who can understand their emotional state, can respond with emotional sensitivity and strength and make clinical decisions that takes into account the emotional milieu (Howe, 2008). Tickle-Degnen (1998: 133) purports that the ‘...complexity and requirements of the delivery of occupational therapy services present a challenge to even the most emotionally mature and experienced therapist’. Unfortunately, healthcare programmes in universities currently place a substantial emphasis on the cognitive and skill-based components, including theory and clinical reasoning, with less time spent on developing the emotional and social skills that are also pivotal for the healthcare practitioner to be successful (Parker et al., 2009). Emotional intelligence underpins these demands and is considered a core competency for emerging occupational therapy students to develop and experienced practitioners to use on a daily basis (Gordon-Handler, 2009).

Emotional intelligence 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 way’ (Stein and Book, 2011: 13). Emotional intelligence allows individuals to identify emotions, decode complex emotional reactions from others, problem-solve (taking into account the emotional milieu) and regulate our own emotions. Healthcare practitioners use emotional intelligence to build rapport, maintain therapeutic relationships, make clinical decisions that need to encompass the emotional milieu and do so when

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working in a pressured team environment (Howe, 2008). Previous studies show that mature emotional intelligence competencies are positively correlated with reduced stress (McCloughen and Foster, 2017), enhanced caring behaviours (Morales, 2014), increased patient satisfaction (Azimi et al., 2010) and, for healthcare students, better performance in practice placements (Andonian, 2013) and teamwork skills (Brown et al., 2017). With emotional intelligence shown to have multiple benefits for healthcare practitioners and students, further research into emotional intelligence in occupational therapy students is warranted. To date, there has been no longitudinal research on the development of emotional intelligence competencies of occupational therapy students.

Emotional intelligence

Emotional intelligence is well recognised as a realm of human cognitive capability, with emotional intelligence now included as a second-stratum factor of intelligence, similar in importance to fluid intelligence and visual processing (MacCann et al., 2014). A meta-analysis of 395 studies that all included healthcare professionals concluded that emotional intelligence is positively correlated with critical thinking skills and emotional competency (Michelangelo, 2015). Teams with higher emotional intelligence have been shown to have a positive effect on team cohesion and their ability to deal with conflicts (Brown et al., 2017). Similarly, emotional intelligence has been shown to be imperative for graduates who need emotional intelligence skills to be work-ready so they can communicate effectively with colleagues, handle daily stressors, generate and maintain relationships with industry partners and ultimately, make decisions under emotional pressure (Boyatzis and Saatchioglou, 2008). Many occupational therapy graduates aspire to management and leadership roles, with research showing that leaders with higher emotional intelligence skills are often more effective in leadership roles (Zeidner et al., 2010).

Only a few studies have used longitudinal methods to track the changes in emotional intelligence of healthcare students. Health science students have been shown to improve their emotional intelligence and caring abilities between the commencement and completion of their university programme (Larin et al., 2014). More recently, a study tracked changes in emotional intelligence in Australian nursing students ($N=111$) over a 3-year period (Foster et al., 2017). The findings showed a significant positive change in emotional intelligence over this period. However, Lewis (2010), who tracked 87 physiotherapy students over 3 years, reported no significant changes in emotional intelligence competencies but did report that students who performed poorly on practice placements tended to have lower emotional intelligence scores. Previous studies have reported that some students in healthcare programmes have high emotional intelligence skills, whereas others have low emotional intelligence skills. A study of nursing students reported that 21% of the cohort ($n=165$) had a total emotional

intelligence score of <90 , which indicated that their emotional intelligence needs 'required development or required improvement' (Reemts, 2015). Only 16% of the same cohort had total emotional intelligence scores that were considered in the skilled or expert range. Another study that included nursing students showed similar results, whereby 34% ($n=35$) of student participants had scores considered low (Marvos and Hale, 2015). Thus, it is feasible that some occupational therapy students might undertake practice placements with lower than expected emotional intelligence competencies; however, no studies have reported the range of emotional intelligence scores for occupational therapy students.

Practice placements

Occupational therapy students are required to complete a minimum of 1000 hours of practice education during their university programme (World Federation of Occupational Therapists, 2016). Practice placements for occupational therapy students is critical for students to transition from the role of student to entry-level practitioner, build confidence in direct patient care and develop their professional identity (McCloughen and Foster, 2017). During placements, occupational therapy students are required to make clinical decisions for people in emotionally vulnerable situations. For example, during paediatric placements students work with children who are upset and families who are frustrated, during an orthopaedic placement they work with consumers who are in pain and distress and during mental health placements, consumers might be confused or emotionally labile. Occupational therapy students are evaluated during practice placements on a range of practical and communication skills, self-management, clinical reasoning and professional behaviours (Andonian, 2013). To pass a practice placement, occupational therapy students are expected to demonstrate competency in an array of skills and behaviours, many of which require emotional intelligence abilities such as assertiveness, empathy, independence, problem-solving and stress management. Occupational therapy students' emotional intelligence has been reported as a significant predictor of their performance during practice placements; however, their personality traits did not predict performance (Brown et al., 2017). Another study showed that emotional intelligence as well as personality traits are positively correlated with occupational therapy students' performance during practice placements (Andonian, 2013).

Importantly to our study, emotional intelligence has been shown to improve via workplace learning. Workplace learning occurs when a person is immersed in an authentic workplace, such as the practice placements that occupational therapy students undertake throughout their university programme. Emotional intelligence competencies can be improved via workplace learning when a student observes a colleague with high emotional intelligence skills, receives on-the-job mentoring and works in a team environment that uses effective emotional

intelligence skills (Brown et al., 2017). Research has also shown that emotional intelligence is malleable and can be improved in adults (Howe, 2008). Emotional intelligence in adults has been shown to increase over time because of natural emotional maturation (Zeidner et al., 2010). Emotional intelligence scores tend to increase through adulthood but level out in the late 40s (Bar-On, 1997), whereas Multi-Health Systems (2011) reported that emotional intelligence continued to increase well into people's 60s. Research has also shown that emotional intelligence can be enhanced through participation in emotional intelligence workshops that focus on specific emotional intelligence skills (Boyatzis and Saatioglu, 2008).

If workplace learning can improve emotional intelligence skills, then it is feasible that the practice education that occupational therapy students undertake might influence emotional intelligence competencies. Thus, longitudinal research that analyses the baseline and changes in the emotional intelligence competencies of occupational therapy students, both before and during their practice placements, will address an important gap in the literature. The purpose of this study was to track changes in emotional intelligence competencies of occupational therapy students during full-time practice placements over the final stages of their university programme, with a focus on the specific emotional intelligence competencies that improve during full-time practice placements. Understanding when various emotional intelligence competencies tend to mature will be of importance to the occupational therapists who supervise students during practice education placements, university educators and employers of occupational therapy graduates.

Method

Our findings are part of a larger study that used a longitudinal, explanatory sequential mixed methods design. Phase one of the study included occupational therapy, physiotherapy and speech pathology students who completed an online questionnaire to measure emotional intelligence over a 16-month period (Gribble et al., 2017a, 2017b). This article reports the results from only the occupational therapy students. Phase two interviewed 24 of the same students to investigate if, and how, practice education influenced changes in emotional intelligence scores (Gribble et al., 2017c).

Participants

Participants were recruited from a convenience sample of third-year undergraduate occupational therapy students enrolled at three Australian universities and second-year business students from one university. To be included, occupational therapy students needed to be enrolled in the third year of the Bachelor of Science (Occupational Therapy) undergraduate courses and scheduled to participate in three or more full-time practice placements of 4 weeks or more duration in the fourth year of their university programme. Business students (the control group)

needed to be enrolled in the second year of a Bachelor of Commerce, majoring in commerce, economics or human resource management. These students were not scheduled to participate in any practice or workplace placements as an obligatory part of the university programme. To calculate the number of participants needed to achieve a power of 0.8, the method of Larin et al. (2009) was used. This study used the Emotional Quotient Inventory: Short to measure the change in emotional intelligence scores of physical therapy students (total emotional intelligence change: Mean (M) = 3.5, SD = 9.1). Power calculations indicated that for our study, we should recruit and retain 55 students per group.

All three occupational therapy programmes are 4 years in length and use a constructivist approach to the teaching that includes a combination of lectures, tutorials, case-based learning and online formats. All three programmes scaffold practice placements through the course with part-time, shorter placements (for example, 1 day per week; 1 or 2 week placements) early in the programme, with three or more placements of 6 weeks or more scheduled in the final year. Students in all programmes participate in a range of activities in preparation for placement, including simulation and workshops, as well as debriefing sessions after placements are completed.

A homogenous cohort of business students (similar age and stage of progression through university) was selected, as the control group as business courses generally undertake minimal or no practice placements in workplace settings as a compulsory component of their programme. Entry requirements for all three universities into occupational therapy and business courses in Australia are similar with most undergraduates enrolling directly after completing high school (Health Workforce Australia, 2013). A control group of students from occupational therapy (or another healthcare profession) would have been preferred to business students, but given the compulsory requirement of practice education in healthcare programmes, a cohort of therapy or healthcare students who do no practice placements was not able to be identified.

Potential participants were recruited through email and sent information about the study by a research assistant from each university. A monetary prize was offered as motivation to participate. The Human Research and Ethics Committee at Curtin University approved the study, including the monetary prize, with reciprocal approval being attained from the other two universities. The monetary prize adhered to guidelines stipulated in the National Statement of Ethical Conduct in Human Research (The National Health and Medical Research Council, 2015). Students were provided with Participant Information Sheets and they provided consent at the commencement of the online survey.

Measurement of emotional intelligence

A choice of three theoretical emotional intelligence constructs were considered for this study – ability-based, trait-based and mixed models – each with their own

evidence base and measurement tools (Bar-On, 1997; Petrides et al., 2007; Salovey et al., 2004). The emotional intelligence construct selected for this study is the Model of Emotional Intelligence, which is a mixed-model and was created by Bar-On (1997) and subsequently amended by Multi-Health Systems (2011). Mixed models encompass ‘...both abilities and qualities such as personality and motivational traits that assist that person in using EI in real life’ (Zeidner et al., 2010: 26). The Model of Emotional Intelligence encompasses a person’s capacity to understand their own emotions, express their emotions, form and maintain interpersonal relationships and ultimately, make decisions that take into account the emotional milieu. All of these are critical skills that occupational therapy students and practitioners require to work effectively with service users and in health-care teams.

To measure emotional intelligence, Bar-On (1997) created the Emotional Quotient Inventory (EQ-i). In 2011, Multi-Health Systems updated Bar-on’s original model and measurement tool and renamed 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 directly measure the student’s actual emotional intelligence ability. Questions include ‘I’m aware of how others feel’ and ‘It’s hard for me to share my feelings with others’. Each question is answered on a five-point Likert scale from ‘never/rarely’ through to ‘always/almost always’. The online test takes up to 40 min to complete (Multi-Health Systems, 2011). The EQ-i^{2.0} calculates 22 standard scores for each participant: a total emotional intelligence score, five composite scores, 15 subscale scores and the wellbeing indicator score. Table 3 shows the facets of the Model of Emotional Intelligence and how each composite scale is derived from three subscales. The standard scores are attained by converting the raw scores for all emotional intelligence domains to scores where the mean is 100 (SD = 15) (Multi-Health Systems, 2011).

The highest score on each domain of the EQ-i^{2.0} is 135 with a lowest possible score of zero (Multi-Health Systems, 2012). Scores of 110 and above are considered high, normal is the range of 90–109 and scores of 89 and below are considered low (Multi-Health Systems, 2011). The rating system was devised during the normative phase of the EQ-i^{2.0} instrument, which used 4000 North American participants aged 18 to 60+ years. Test-retest reliability for total emotional intelligence was high ($r=0.92$) for participants with 2–4 weeks between tests, and lower ($r=0.81$) when tested 8 weeks apart. In order to track changes in emotional intelligence, the EQ-i^{2.0} manual recommends that participants retake the survey at time-points at least 12 weeks apart (Multi-Health Systems, 2011).

Australian normative data for the EQ-i^{2.0} were used in this study (Multi-Health Systems, 2012). Norms were based on a sample of 1250 Australians and used the same five age ranges as the original North American normative sample. The sample included participants from across Australia and a variety of education levels.

Of interest to our study was that the mean total emotional intelligence for the younger age group of 18–29 year olds ($M=93$, $SD=14.3$) was significantly lower than older group (50+ years: $M=101.9$, $SD=14.2$). Internal consistency of the EQ-i 2.0 was very good, as demonstrated by Cronbach’s alpha scores of 0.97 for total emotional intelligence, 0.88–0.93 for the composite scales and 0.77–0.93 for the 15 subscales.

Data collection

Data collection occurred via online surveys at three time-points over a 16-month period. Data were collected at the same time-points from occupational therapy and business students. The first surveys were administered before the occupational therapy students commenced their full-time extended practice placements (time-point termed T1). For this study, an extended practice placement is defined as 5 weeks or longer. The online surveys were re-administered (time-point termed T2) 6 months later when the occupational therapy students had completed one or two full-time extended placements. The final data collection was administered after the occupational therapy students had completed all their practice placements at the end of their university programme (time-point termed T3).

At T1, T2 and T3, all students completed an online questionnaire where participants provided consent before providing demographic information that included age, gender, programme, year of study, details of practice placements and any previous emotional intelligence training they had undertaken in the last 5 years. Students were excluded if they had undertaken an emotional intelligence training programme of more than 1 day within the previous 5 years. Participation in an extended emotional intelligence-based training programme has been shown to improve emotional intelligence scores (Boyatzis and Saatchioglou, 2008).

Participants were then directed to the EQ-i^{2.0} website where they completed the emotional intelligence instrument. EQ-i^{2.0} scores for each respondent were linked to demographic data via the student’s university identification number, with the student’s consent. Data were not gathered on whether students passed or failed each placement, as the researchers were concerned that participation rates could decline if students had to disclose a failed placement.

Data analysis

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. Comparisons of emotional intelligence scores between the two groups at T1 was conducted using either ANOVA or Kruskal–Wallis tests, depending on the normality of the baseline distributions (tested using the Shapiro–Wilk statistic). The changes in total emotional intelligence, composite and subscales scores from T1 to T3 were then calculated. As the changes

in scores were found to be close to normally distributed, a paired *t*-test was used to identify whether there was a significant change in mean total emotional intelligence score from T1 to T3 for both groups. Instead of performing a number of separate *t*-tests on the composite and subscale scores, one analysis was performed on the five composites and a second was performed on the 15 subscales (with each composite and subscale being treated as a repeated measurement for each participant, with the type of measure as an independent fixed factor. Because of the repeated measurements on each participant, the participant identifier was treated as a random effect in the model. The results from this model were considered more stable than conducting multiple separate *t*-tests, as the estimated SD against which all the tests are performed would be obtained from consideration of all the composite and subscales together. With the participant identifier named as the random effect, any correlation between scores obtained from the same participant could be taken in to account. By including an interaction between the score type and the student type, *p*-values were obtained to identify whether there had been any significant change from T1 to T3 (interaction term significantly different from zero) for each particular student type and composite and subscales combination.

Results

A total of 139 occupational therapy students and 93 business students participated at T1; a response rate of 53% for occupational therapy and 26% for business. Fifty-two occupational therapy and 24 business students completed all parts of the surveys at T3; a retention rate of 37% for occupational therapy and 26% for business. At T1, the mean age of the occupational therapy students was 21 years ($SD=2.7$) with only eight students aged 24 years or over as Australian undergraduate courses attract a majority of students directly from school. Business students were 21.4 years ($SD=4.7$). The percentage of occupational therapy females to males in the study is similar to the demographics of all Australian occupational therapists, where 91.1% are female (Occupational Therapy Board of Australia, 2017), whereas 76% of business students were female. Five students were excluded from data analysis as they exceeded the EQ-i^{2.0}'s inconsistency index, positive impression and negative impression parameters. The times between T1 and T2, and from T2 to T3 were 28 to 36 weeks.

Between T1 and T3, occupational therapy students had completed three or four different practice placements ($M=3.1$; $SD=0.9$) with a mean length of 117 days ($SD=28$), which equates to 88% of the obligatory 1000 hours. Practice placements were mostly full-time (94%) in facilities such as hospitals, private practices, schools and aged care residential facilities. Placements occurred in metropolitan, rural and international locations. Over the same period, business students completed no practice education. During placements, students experienced a range of supervisory models including one-to-one or multiple

students with one supervisor, as well as one student being supervised by multiple supervisors.

The first phase of analysis compared the occupational therapy and business students over the 16-month period. Table 1 shows results from fitting the regression models that compared the emotional intelligence scores of occupational therapy and business students.

There was no significant difference in total emotional intelligence scores ($p=0.1199$) between occupational therapy and business students at T1. However, the occupational therapy students significantly increased their total emotional intelligence score over the 16-month period, whereas the business students showed no significant change in total emotional intelligence or any other emotional intelligence domain over the same period. As a result, analysis of composite scores identified that the occupational therapy students reported significant increases in self-perception and decision-making. The emotional intelligence subscale scores from the composite self-perception that increased were self-actualisation and emotional self-awareness. The emotional intelligence subscale score from the composite decision-making that increased was reality testing. Only one other emotional intelligence subscale scores increased significantly – independence – from the self-expression composite. Table 2 presents the definitions of some of the emotional intelligence competencies that increased significantly in occupational therapy students.

After students completed all their placements (Table 3 shows the T1 and T3 scores of the occupational therapy students), although independence increased significantly, the T3 mean score of 93 is considered in the lower range of normal scores. Other emotional intelligence domains to remain in the lower range of normal scores at T3 were assertiveness, problem-solving and stress tolerance. Emotional intelligence domains at T3 that were in the higher range of normal (where $M > 108$) were self-actualisation, the Interpersonal Composite and all its subscales and impulse control.

Further analysis compared the occupational therapy students T1 scores to the age-matched and population norms. Table 3 shows the Australian age-matched EQ-i^{2.0} norms (18–29 year olds, which parallels the mean age of the students in the study) and population EQ-i^{2.0} norms (18–60+ year olds). No domains for the occupational therapy students were significantly below the Australian age-matched norms. Self-regard, self-expression, assertiveness, independence, problem-solving, stress management and flexibility were similar to the age-matched norms, with the other 14 emotional intelligence scores being significantly higher than the age-matched norms. The mean emotional intelligence scores of the occupational therapy students were then compared to the Australian population norms. It was important to compare students to the population norms as this is more representative of the healthcare consumers and team members that students work alongside during placements. The emotional intelligence scores that were significantly lower than the Australian population norms were

Table 1. Regression models comparing the changes from T1 to T3 between occupational therapy and business students.

	Occupational therapy students		Business students	
	Mean change in emotional intelligence score (SD) ^a	<i>p</i> -value ^b	Mean change in emotional intelligence score (SD) ^a	<i>p</i> -value ^b
Change from T1 to T3 in the total emotional intelligence score				
Total emotional intelligence score	3.2 (8.0)	0.0221	-1.7 (11.3)	0.4056
Change from T1 to T3 in emotional intelligence composite scores ^c				
Self-perception	3.8 (9.4)	0.0165	-1.3 (12.7)	0.5779
Self-expression	2.4 (9.8)	0.1276	-2.4 (9.8)	0.3148
Interpersonal	1.8 (7.6)	0.2541	-1.5 (10.7)	0.5348
Decision-making	3.6 (11.7)	0.0231	-0.4 (11.2)	0.8809
Stress management	2.2 (9.5)	0.1627	-1.1 (14.8)	0.6377
Change from T1 to T3 in emotional intelligence subscales scores ^c				
Self-regard	2.5 (10.8)	0.1539	-1.4 (12.6)	0.5894
Self-actualisation	3.5 (11.4)	0.0412	-0.2 (10.4)	0.9385
Emotional self-awareness	3.6 (11.1)	0.0353	-1.6 (15.5)	0.5502
Emotional expression	1.6 (11.8)	0.3616	-1.4 (15.4)	0.6028
Assertiveness	-1.5 (11.5)	0.3753	-0.9 (9.9)	0.7431
Independence	4.4 (10.2)	0.0119	-3.1 (8.0)	0.2322
Interpersonal relationships	0.0 (7.9)	0.9795	-1.1 (13.1)	0.6715
Empathy	2.4 (9.5)	0.1693	-1.9 (11.8)	0.4757
Social responsibility	2.2 (10.1)	0.1989	-0.4 (10.7)	0.8774
Problem-solving	2.5 (13.6)	0.1431	1.2 (12.2)	0.6575
Reality testing	5.2 (11.6)	0.0029	2.7 (11.1)	0.2980
Impulse control	1.1 (11.7)	0.5122	0.8 (12.6)	0.7578
Flexibility	2.3 (11.4)	0.1858	0.8 (15.9)	0.7725
Stress tolerance	0.8 (11.1)	0.6622	-0.7 (9.7)	0.8021
Optimism	2.3 (10.3)	0.1858	-1.9 (16.6)	0.4639

^aMean change in emotional intelligence scores calculated by subtracting T1 from the T3 score. Negative values indicates a decrease in score from T1 to T3.

^cInstead of performing a number of separate *t*-tests on the composite and subscales scores, one analysis was performed on the five composites and another on the 15 subscales (with each composite and subscale being treated as a repeated measurement for each participant).

^b*p*-value for the change from T1 to T3 (from the regression model).

self-regard, self-expression, assertiveness, independence, problem-solving, stress management, stress tolerance and flexibility, whereas self-actualisation, emotional self-awareness, emotional expression, interpersonal relationships, empathy, social responsibility and impulse control were significantly higher.

Discussion and implications

The results of our study show that occupational therapy students' total emotional intelligence score, as well as self-perception, decision-making, self-actualisation, emotional self-awareness, independence and reality testing skills, increased significantly over the final 16 months of their university programme – the same period during which the majority of full-time practice placements occurred. Business students, who completed no practice education, reported no increases in any emotional intelligence scores over the same period. Students were on placements for a mean of 117 days of the 16-month (approximately 480 days) period; thus despite the control group, we cannot conclusively state that the changes in emotional intelligence scores of the occupational therapy students were

a direct result of their placements because they were also involved in further teaching at university, paid or volunteer employment, as well as personal life events over the same period. Further qualitative research by (Gribble et al., 2017c) on the development of emotional intelligence in students during practice placement found majority of emotional intelligence changes (95%) were reported to be a direct result of their practice placements, with only 5% perceiving that the emotional intelligence change was due to personal factors external to placements. This study interviewed occupational therapy, physiotherapy and speech pathology students about how practice placements influenced changes in their emotional intelligence. These interview findings add weight to the influence that placements have on emotional intelligence competencies.

Our results align with Clarke (2009), who identified that emotional intelligence competencies can be developed via workplace learning. Our results are also similar to Benson et al. (2012), who tracked the emotional intelligence of 52 nursing students over a 4-year period, reporting that some emotional intelligence domains changed significantly: emotional adaptability, situational coping and flexibility. The improvement in total emotional intelligence and some

Table 2. Definitions of emotional intelligence composites and subscales that increased significantly in occupational therapy students (Multi-Health Systems, 2011: 75–78).

	Definition
Composites	
Self-perception	'...an understanding of what, when, why, and how different emotions impact thoughts and actions.'
Decision-making	'...addresses ways in which one uses emotional information...how well one understands the impact emotions have on decision-making.'
Subscales	
Self-actualisation	'...is the willingness to persistently try to improve oneself and engage in the pursuit of personally relevant and meaningful objectives that lead to a rich and enjoyable life.'
Emotional self-awareness	'...includes recognizing and understanding one's own emotions...the ability to know what one is feeling and why, while being able to recognize and understand the sources of those feelings.'
Reality testing	'...is the capacity to remain objective by seeing things as they really are. This involves recognizing when emotions or personal bias can cause one to be less objective.'
Independence	'...the ability to be self-directed and free from emotional dependency on others. Independent people are self-reliant in planning and making important decisions.'

specific domains during practice education should reassure occupational therapy supervisors and employers because a range of emotional intelligence competencies critical to being an effective therapist matured. During practice education, occupational therapy students have many opportunities to observe their occupational therapy supervisors and other healthcare team members, as they utilise an array of emotional intelligence competencies. Students can then practice the skills, receive feedback from their supervisors and then continue to refine their emotional intelligence abilities.

Before occupational therapy students commence full-time practice placements, 14 of the emotional intelligence competencies were significantly higher than the age-matched norms, including self-actualisation. This finding is not surprising as students in Australia tend to be attracted to university programmes that align with their values and interests (Stagnitti et al., 2010). Similarly, some courses in the UK require students to undergo an interview before being offered a place in an occupational therapy programme, ensuring that the values and level of interest are aligned to the occupational therapy profession. The recent implementation of values-based recruitment in the National Health Service in the UK ensures that employees are recruited with not only with the optimal skills but with values that support effective teamwork and excellent

patient care (Health Education England, 2016). The emotional intelligence scores that were significantly lower than the Australian population norms were self-regard, self-expression, assertiveness, independence, problem-solving, stress management, stress tolerance and flexibility, which shows that a range of emotional intelligence competencies are still maturing in some occupational therapy students even at the end of their university programme.

Supervisors of occupational therapy students and university educators need to be aware that some occupational therapy students commence practice placements with some of their emotional intelligence competencies below the population norms, and some are even below age-matched norms. Research shows a positive link between emotional intelligence and performance during practice education (Chew et al., 2013; Lewis, 2010), thus it is feasible that students with lower emotional intelligence scores in our study may perform poorly in scenarios where emotions are at play. This interpretation is supported by Bird and Aukas (1998), who reported that occupational therapy students who fail placements had difficulty with complex and vulnerable healthcare consumers, presented as socially withdrawn and tended to project their problems onto others; difficulties that could be the result of low emotional intelligence competencies.

Employers should be aware that occupational therapy students completed their university course with many emotional intelligence competencies in the normal and even higher ranges of normal. However, assertiveness, problem-solving and stress tolerance remained in the lower range of normal in this study, suggesting that these competencies are still maturing. A student with low assertiveness might be passive in team meetings and lack decisiveness when communicating with patients. Students low in problem-solving may be passive during emotional scenarios and turn to their supervisor or colleagues for strategies to deal with the scenario. Students who experience difficulty during practice placements have been reported to demand additional time from supervisors, therefore students with lower emotional intelligence scores may also require additional support. Employers should support new graduates to develop these emotional intelligence competencies that are critical to being an effective team member, coping with the stressors in the workplace and making decisions under emotional pressure. Research has shown that emotional intelligence can be enhanced through workshops focussed on specific emotional intelligence skills (Boyatzis and Saatioglu, 2008). With research showing that healthcare professionals with higher emotional intelligence scores achieve better patient outcomes, cope better with stressful scenarios and work well in teams, workshops focussed on upskilling new graduates with lower emotional intelligence scores should be beneficial (Clarke, 2009).

Limitations

The EQ-i^{2.0} is a self-report tool that measures perceived emotional intelligence competencies in participants instead

Table 3. Emotional intelligence scores at T1 and T3 for occupational therapy students and comparison to the Australian age-matched (18–29 years old) and population (18–60+ years old) Emotional Quotient Inventory 2.0 norms at T1.

Score category	T1 (<i>n</i> = 139) mean (SD)	T3 (<i>n</i> = 52) mean (SD)	Population norm	<i>p</i> -value at T1	Age-matched norm	<i>p</i> -value at T1
Total emotional intelligence score	99 (12)	100 (12)	99	0.9622	93	<0.0001
Self-perception	102 (13)	102 (11)	99	0.0783	95	<0.0001
Self-regard	97 (14)	97 (14)	100	0.0142	94	0.1060
Self-actualisation	105 (14)	108 (12)	99	0.0001	97	<0.0001
Emotional self-awareness	102 (13)	105 (12)	99	0.0001	97	<0.0001
Self-expression	92 (14)	96 (15)	99	0.0008	92	0.1013
Emotional expression	103 (15)	105 (17)	98	0.0005	97	0.0012
Assertiveness	94 (15)	94 (13)	101	0.0001	95	0.8875
Independence	88 (14)	93 (15)	99	<0.0001	89	0.9856
Interpersonal	109 (10)	108 (8)	99	<0.0001	97	<0.0001
Interpersonal relationships	108 (12)	108 (11)	98	<0.0001	98	<0.0001
Empathy	108 (11)	109 (9)	101	<0.0001	97	<0.0001
Social responsibility	104 (11)	108 (9)	100	<0.0001	97	<0.0001
Decision-making	98 (14)	100 (15)	99	0.1244	92	0.0006
Problem-solving	91 (14)	91 (16)	99	<0.0001	92	0.5124
Reality testing	100 (13)	102 (12)	100	0.5101	96	0.0076
Impulse control	106 (14)	109 (14)	99	0.0001	95	<0.0001
Stress management	97 (13)	97 (16)	101	0.0002	93	0.0585
Flexibility	97 (13)	97 (16)	101	<0.0001	94	0.2581
Stress tolerance	93 (14)	93 (17)	101	<0.0001	94	0.2670
Optimism	103 (13)	107 (13)	100	0.17327	95	<0.0001

of actual emotional intelligence ability. Self-report tools have numerous reported limitations, including over- or under-reporting and a tendency for participants to try to provide the optimal answer (Zeidner et al., 2010). There was a notable dropout rate between T1 and T3 in both occupational therapy and business students. This primarily occurred because the T3 data was collected after students had completed their university programmes and had disengaged from university email systems. Consequently, the study may have lacked the power to detect changes from T1 to T3, which increased the chance of a type II error. Being a cohort study means that the T3 sample may be biased toward those who were confident in their emotional intelligence competencies. The use of convenience sampling is also a limitation. This study included only undergraduate students who would be younger than their counterparts in postgraduate occupational therapy programmes, which are commonplace in North America, and therefore results may not be generalisable to post-graduates or older students.

Conclusion

Supervisors and university educators can be reassured that the majority of occupational therapy students will commence their first full-time placements with many emotional intelligence skills well developed, and that total emotional intelligence and some subscale and composite skills tend to improve over the final 16 months of their university programme. The reason for the improvements could be

because of the students being immersed in healthcare settings, where they work with consumers in vulnerable situations and communicate within healthcare teams. However, further research is called for that accounts for the changes from the natural maturation of emotional intelligence abilities as well as life experiences external to the practice placements. Although some students commence extended full-time placements with some emotional intelligence skills lower than population norms, at the completion of the university programme, the majority of emotional intelligence skills have matured. Our study raises concerns about assertiveness, problem-solving and stress tolerance, which tend to remain relatively low at the completion of the occupational therapy programme. Supervisors and employers need to encourage students and new graduates to practise their emotional intelligence skills under supervision and then be given feedback and time to reflect, so they are better prepared for the emotional demands of working in healthcare settings.

Key findings

- Emotional intelligence is a critical skill for occupational therapy students.
- Practice placements contribute to improvements in students' emotional intelligence.
- New graduates may present with many well-matured emotional intelligence competencies; however, assertiveness, problem-solving and stress tolerance remain relatively low.

What the study has added

This study is the first to track longitudinally the emotional intelligence of occupational therapy students over the final 16 months of their university programme, as they undertake full-time practice education placements.

Research ethics

Ethical approval was obtained from Curtin University Human Research Ethics Committee (approval number HR68_2012) on 17 July 2012, with reciprocal approval being attained from the other participating universities. Before the online surveys, participants provided informed consent by checking a box that approved their data to be used for published research. Prior to commencing the interviews, each participant provided written consent for the interview to be recorded and their data to be used for published research.


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Chapter 5 INTEGRATION of the
QUANTITATIVE and
QUALITATIVE DATASETS
and ADDITIONAL ANALYSIS

Firstly, this chapter will present the integration of the quantitative and qualitative data sets required for Phase 3 of our study. Phase 3 is the final phase of a sequential explanatory, mixed methods design where the findings from the qualitative phase (i.e., the themes identified during the content analysis of the interviews from Phase 2) are used to explain the trends identified in the quantitative data (i.e., the EI scores at T1, T2, and T3 from Phase 1). Bringing together the two data sets assisted in reaching conclusions about the Research Questions posed in Section 1.3 and provided further insights into understanding how, and why, the therapy students' EI skills changed over the time they completed the majority of their full-time, extended clinical placements.

The chapter concludes with an analysis of a set of T2 and T3 data that does not appear in the published journal articles.

This chapter uses the themes and sub-themes from the content analysis of the interviews as presented in Paper 4 and uses data from the published journal articles that incorporated all the therapy students (i.e., the EI score data from Papers 1, 2, and 3). Thus, the data from Paper 5 that included only occupational therapy students are not used in this chapter. The source of each quotation is identified by a code, for example, 06-F-OT which indicates the quotation came from interviewee Number 06, a female occupational therapy student. PT indicates physiotherapy student; SP indicates speech pathology student. There is a mild over-representation of occupational therapy students in the quotations presented in this chapter because 12 of the 24 interviewees were occupational therapy students, while there were six students from physiotherapy and six from speech pathology interviewed.

5.1 Phase 3: integration of the quantitative and qualitative data sets

The final phase of a sequential explanatory mixed methods design is to integrate the findings from the quantitative and qualitative phases (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009). The integration of the interview data with the quantitative results will add a deeper understanding of why some of the trends and changes in EI scores occurred at each of the three time intervals. The rationale for using this approach is that the “...quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants’ views in more depth” (Ivankova, Creswell, & Stick, 2006, p.5). As proposed by Fetters et al. (2013), integration of the data sets can occur through either of the following approaches: narrative, data transformation, or joint display technique (Fetters et al., 2013). We have selected to integrate the data sets using a *narrative approach* with a *weaving technique*. “When integrating through *narrative*, researchers describe the qualitative and quantitative findings in a single or series of reports...The *weaving approach* involves writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis” (Fetters et al., 2013, p.2142). As such, the integration will occur in three stages:

- i. the trends in the baseline (T1) EI scores will be discussed using the themes identified during the content analysis of the interviews;
- ii. the trends and changes in EI scores from T1 to T2 will be discussed using the themes identified during the content analysis of the interviews;
- iii. the trends and changes in EI scores from T1 to T3 will be discussed using the themes identified during the content analysis of the interviews.

For this chapter, three figures have been created that depict the linkages between the qualitative and quantitative data – with each figure being aligned to each of the above three stages. Figure 5.1 details how the themes from the interview data explain some of the trends in the T1 findings. Figure 5.2 and 5.3 present the themes that validate

some of the trends and changes in EI scores from T1 to T2, and the T1 to T3 data, respectively.

5.1.1 Exploration of the trends in the EI scores at T1 using the themes from the content analysis

In this section, the themes and sub-themes that emerged from the content analysis are integrated with the results presented in Paper 1.

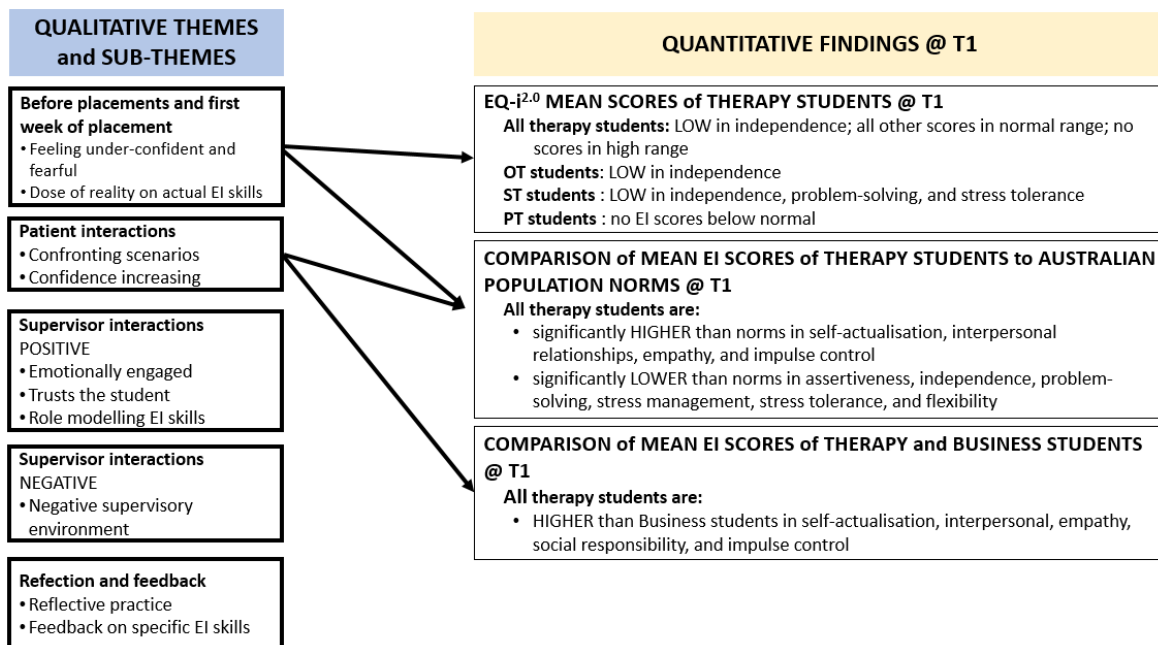


Figure 5.1: At T1, before therapy students commence full-time clinical placements - with arrows indicating which of the qualitative themes assist in explaining the trends in EI scores.

The arrows in Figure 5.1 identify which themes explain the trend in EI scores at T1 before the therapy students commenced their full-time, extended clinical placements. In summary, the themes ‘*before placement and the first week of placement*’ and ‘*patient interactions*’ can assist in understanding three trends in EI scores at T1. These trends are (i) some EI skills of therapy students are higher or lower than the Australian Population Norms; (ii) some EI scores of therapy students are higher than business

students; and (iii) the lower than 'normal' scores at T1 in independence, problem-solving, and stress tolerance of therapy students. Each of these will now be discussed.

Although interviewees were asked questions about what occurred during clinical placements that might have influenced any changes in EI scores from T1 to T3, many interviewees did reflect on their baseline (T1) scores. Students were given a hard copy of their T1 EI scores when they met with the interviewer (Appendix G has an example of the EI scores students were given). Thus, students were able to compare their EI skills before they commenced full-time placements to their EI skills during placements.

5.1.1.1 EI scores of therapy students at T1 compared to the Australian population norms and business students

The EI skills where students reported scores significantly lower than the Australian population norms were *assertiveness, independence, problem-solving, stress management, flexibility, and stress tolerance*. Using the interview data, students reported that their relative lack of experience working in healthcare settings made them realise that some EI skills were underdeveloped before starting placements. These findings align with Solomon and Miller's (2005) qualitative study of 11 physiotherapists in their first year of practise. They reported that novice physiotherapists experience stress and insecurity in the transition from being a student to being a practitioner, and often reported feeling overwhelmed in this period.

For example, 41% (i.e., 10 out of the 24 interviewees) of the interviewees in our study were aware that the stress management strategies needed in stressful, emotionally involved scenarios during placements would be different to the stress management strategies used to meet deadlines at university or cope with stress in their personal lives. For example:

“...my supervisor was very spiritual in a way, you know, go with the flow. If something stressful was happening, it wasn't a big deal to cancel things that

weren't as important in the day and deal with it. Whereas I'm someone that would be, like, no - I've got to do all of that today, and originally that's what I would be like." (04-F-OT)

Ten of the interviewees (41%) realised that being *assertive* when verbalising their clinical decisions in a team meeting would be more difficult in the healthcare setting with people in distress or with experienced co-workers than in the classroom setting at university or home. As this student stated when talking about *assertiveness*:

"...if someone contradicted me or disagreed I would probably not be very good at continuing to push my point ...I knew I'd have trouble being assertive. I don't like to be coming across as a "pushy" person...I was unable to voice my opinion. I was unable to give my critical reasoning and all that..." (06-F-OT)

Students realised that working with people in distress or pain would require them to be *flexible* and that they would need to have contingency plans. This student acknowledged that her rigidity needed to change when on placements:

"...before prac I was quite a rigid person. I liked structure and routine, I liked to know what was happening on what day and allocate times and certain tasks, I'm a very organised person. I think when I got to prac ... my first one was at (deidentified) School, and that was just chaos, absolute chaos, and I was very rigid, like, "No, I can't go and do that because I've got this plan, I need to do this," and I think if I had stuck to that I would have failed that placement. If I had been as rigid and inflexible, I just wouldn't have been able to cope with the workload." (04-F-OT)

The lower EI skills compared to the Australian Population Norms might also be partially explained by the age difference between the students ($M_{T1}=21.4$ years) and the mean age of the population norm sample ($M=39.6$ years). Research shows that EI skills continue to mature into a person's 40s or even 60s (Bar-On, 1997; Multi-Health Systems, 2012). Clinical supervisors and university educators should be aware that many of the therapy students' EI skills are still maturing as they commence full-time

placements, especially those related to *problem-solving* and being *independent* during emotionally demanding situations with patients.

Therapy students' reported significantly higher EI scores, compared to the business students, in the following EI skills; *self-actualisation*, *interpersonal*, *empathy*, *social responsibility*, and *impulse control*. Therapy students' *self-actualisation* ($M_{T1}=104.5$; $p>0.001$) was significantly higher than the business students ($M_{T1}=97$), as well as higher scores compared to the Australian population norms ($p>0.001$). The higher *self-actualisation* in the therapy students' scores might be explained by the comments that 42% of interviewees made about clinical placements validating that they had selected the right career. Supporting this finding is Chiang et al.'s (2013) survey of 152 occupational therapy students which reported that placements were instrumental in endorsing and validating that the correct career choice had been made, as well as identifying potential areas of practise for students. Students in our study stated:

"...before going on fieldwork I remember saying to myself 'I don't even know if I'm going to like being an OT'... (but) I remember thinking at the end of each prac 'I don't want to go. I don't want to leave. I want to stay here'" (01-F-OT).

"...fourth year is a bit of a soul-searching year. I felt like I did a lot of thinking ...is this what I want to do, where am I going? ... When I started doing pracs, that's when I kind of clicked. Yep, that's what I want to do." (04-F-OT).

Similarly, students self-selecting into a healthcare profession where advanced interpersonal skills are pivotal and already matured might explain the higher scores of the therapy students in *interpersonal* ($M_{T1}=106.8$; $p>0.001$), *empathy* ($M_{T1}=107.2$; $p>0.001$), and *impulse control* ($M_{T1}=103.6$; $p>0.001$) compared to the business students and the Australian population norms. For example, this student found that his *impulse control* came quite naturally:

"...these different experiences happen and you start to just stop and think a little bit more about what's coming out of your mouth or what you're doing. It was not too hard to hold back a little bit." (09-M-PT)

5.1.1.2 Low scores at T1 in independence, problem-solving, and stress tolerance

The lower than normal scores in some EI skills in the therapy students at T1 was a noteworthy finding. At T1, the therapy students had low EI scores in *independence* (M=89.8) with more than 41% scoring in the low range. Occupational therapy and speech pathology students reported lower than normal scores in *independence* and *problem-solving*, with speech students also being low in *stress tolerance*. These upcoming placements were the first time the therapy students would be working full-time for extended periods in the role of a therapist, having to manage a caseload, and work in interprofessional teams. Thus, these placements are the first time that the majority of therapy students have to confront and deal with people in emotionally vulnerable situations. A large percentage of interviewees (71%) reported low confidence, anxiety, even fear, before commencing full-time extended placements. For example, a student stated, "...You start (placements) with so much fear in your head. I was quite unsure of myself." (23-F-PT). Another said, "So knowing that it is something you have got to do on your own, and it's really scary. I remember being really, really scared, and you know, like "Oh God, what am I going to do?" (24-F-OT). These low levels of confidence might have led to the students' reporting under-developed *independence* and *problem-solving* skills and tending to be unsure of which strategies to select when a patient is in tears, verbally upset, expressing grief, or refusing to participate in therapy sessions. Of interest to clinical supervisors and university educators, research has shown that students with low confidence or under-developed *independence*, *problem-solving*, and *stress tolerance* skills might rely on supervisors in complex emotional scenarios. For example, Bird and Aukas (1998) identified that failing occupational therapy students were socially withdrawn, had difficulty working with complex patients, and tended to project their problems onto others. Further support is offered by Gutman, McCreedy, and Heisler (1998) who reported that when some occupational therapy students failed clinical placements they tended to be more dependent on supervisors, peers, and other staff.

5.1.2 Exploration of the trends and changes in the EI scores from T1 to T2 using the themes from the content analysis

In this section, the themes and sub-themes that emerged from the content analysis are integrated with the results presented in Paper 2.

Between T1 and T2, the therapy students completed between one and four clinical placements ($M=2.19$, $SD=0.95$). These placements ranged in length from five weeks to 10 weeks with a mean of 55 days ($SD=25$ days). From T1 to T2, the only EI score with a significant change in the therapy students was *assertiveness* which declined ($t = -2.12$; $p = 0.036$) while all the other EI scores showed no significant change. Over the same period, 32% of therapy students reported a decrease of five or more points in their *assertiveness*. The mean change in all EI scores from T1 to T2 ranged from -2.12 points (*assertiveness*) to 1.58 points (*reality testing*; $t = 1.52$; $p = 0.13$). No significant differences in EI scores were identified between students from the different universities, nor for females and males. Also, there were no significant differences in EI scores for students who completed only one clinical placement from T1 to T2 compared to those students who completed three or four placements in the same period.

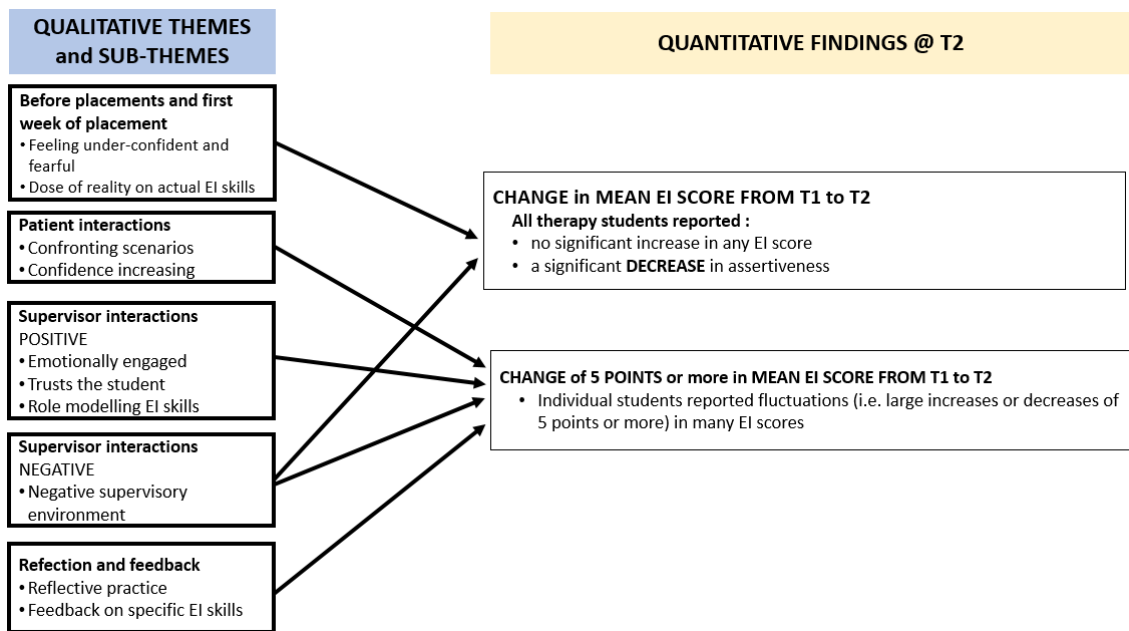


Figure 5.2: At T2, after therapy students completed ONE or TWO full-time clinical placements - with arrows indicating which of the themes assist in explaining the trends and changes in EI scores.

The arrows in Figure 5.2 depict which of themes explain the trends and changes in EI scores from T1 to T2. In summary, all five themes can assist in understanding the following two trends in EI scores between T1 and T2. The two trends were (i) the significant decrease in *assertiveness* amongst all the therapy students and (ii) that individual therapy students reported fluctuations in their EI skills during this period. Each of these will now be discussed.

5.1.2.1 The decrease in assertiveness of therapy students between T1 to T2

From an analysis of the interviews, it appears that the students' declining *assertiveness* occurred when they were communicating with clinical supervisors and experienced healthcare staff. However, the students reported feeling confident to be assertive with patients. *Assertiveness* can be defined as "...communicating feelings, beliefs, and thoughts openly, and defending personal rights and values in a socially acceptable, non-offensive, and non-destructive manner" (Multi-Health Systems, 2011, p. 76). Clinical supervisors and university educators should be interested in the significant decline in the *assertiveness* score for all therapy students. At the same time, business students were significantly higher than therapy students in *assertiveness*. This is an intriguing finding, as T2 data was collected when the therapy students had completed one or more clinical placements. Placements appeared to diminish therapy students' confidence in being assertive, while the business students, who did no work-integrated learning placements, showed no change in their *assertiveness*. Our interview results offer two possible explanations for the decrease in therapy students' ability to be assertive with their clinical supervisors and experienced healthcare staff. Firstly, many students reported receiving a reality check on the crudity of some of their EI skills when starting placements and comparing themselves to the experienced team members they worked alongside. For example, one interviewee stated:

"When you hit those fulltime fieldwork pracs, you actually get dropped down a notch and go, phew ... my empathy is not as good as it could be, or I could be more assertive, or my self-regard is actually dropping off here" (04-F-OT).

"...my mind was absolutely blown at how casually and easily she (the supervisor) did something that was so advanced that couldn't be done by us (students) in that service within the same amount of time ... we didn't have the skills and the expertise and the knowledge. That probably contributed to that reality check..." (02-F-OT)

Being *assertive* in a healthcare team amongst professionals who have years of experience is daunting for even the most confident student. Students realised that being assertive in a healthcare team is different to being assertive at home or in their place of part-time employment. As this student stated, being observed by an experienced supervisor reduced their *assertiveness* and ability to express themselves during reflection:

“(when I worked with patients by myself) I would be quite confident in my own clinical skills that I could go in and do a session and make a difference in that session, and that I would have something planned. If plan A didn't work then I had a plan B. I would be able to work within the session flexibly Whenever I was supervised directly that was obviously an anxiety-provoking experience for me and I would tend to over-think everything and get caught up in my own head...” (13-F-SP)

These results are similar to Ibrahim (2011) who reported 38% of final year students felt they lacked the assertiveness needed during placements. Another study found that fourth year nursing students' assertiveness declined from the start to the end of the year (Ilhan, Sukut, Akhan, & Batmaz, 2016).

Secondly, students reported that the quality of the student-supervisor interactions was a critical influence on the change in EI scores. The majority of students (n=22, 92%) recalled times when supervisors had a negative impact on their EI skills. Being exposed to an unsupportive supervisory environment tended to reduce the students' confidence to verbalise their clinical decisions to supervisors or being *assertive* in team scenarios. These students reported they tended to shut down emotionally when supervisors instigated an obvious power differential or hierarchy between the student and the supervisor or gave overly critical feedback. As these students stated:

“...the way it felt to me is like the supervisors are God. You've got to try and impress God. She just had that attitude that you've got to do everything you can to please them. I like being on the same footing.” (07-M-OT)

“Whenever she’d ask me a question and I’d say something, my answer was always wrong. She made me feel bad about myself. And so I didn’t really want to say anything. I shut down. I had to.” (08-F-SP)

These findings align with Eva et al. (2012) who reported that feedback from supervisors could impact students in a variety of ways which was dependent on when, how, and by whom the feedback was delivered. Their study identified that fear was common in students during placements. Students’ fear tended to erode their confidence, and they became fragile. Students “...need to believe that the feedback was delivered from a position of beneficence and non-maleficence” (Eva et al., 2012, p.21). If this occurs, then a strong and collaborative working relationship is established between student and supervisor. The interviewees in our study have validated that the supervisory environment is a critical component which was more than likely a critical factor in the decrease in students’ assertiveness skills.

5.1.2.2 The fluctuating EI skills in individual therapy students between T1 and T2

Paper 2 presented the changes in EI scores of therapy students between T1 to T2, an eight-month period where students completed a mean of 55 days of fieldwork. This paper described the fluctuating patterns of improving and declining EI scores in individual therapy students. This pattern was observed across a large percentage of the students. For example, an occupational therapy student showed a positive increase in her *reality testing* score from 75 (at T1) to 109 (T2) and an improvement in *stress tolerance* from 85 to 117. Another occupational therapy student showed a negative decline in *emotional expression* from 95 to 77. A physiotherapy student showed a decline in *independence* scores from 110 to 96. The following section will explore the possible reasons for these fluctuations, i.e., the positive increases and negative decreases, in EI skills.

The positive increases in EI skills might be explained by the students’ exposure and subsequent growth in their confidence in working with patients who are experiencing

emotional distress, pain, or vulnerability. All 24 of the interviewees reported that interacting with patients only lead to positive gains in EI skills and confidence. Some students explained that the initial interactions with patients lead to the realisation that some EI skills were under-developed, as this student explained, "...you can read all about empathy, but being empathic is completely different" (01-F-OT). Despite this reality check, students overwhelmingly agreed that the opportunity to work with people in emotional distress, either with the supervisor or independently, was the optimal learning ground for a range of EI skills to flourish. Students recounted that EI growth occurred when they were immersed in scenarios with patients, especially situations they had never dealt with previously. This finding is supported by Solomon and Miller (2005) who identified that novice physiotherapists gained confidence and improved feelings of competence by working with challenging patients, as highlighted by this student:

"Just being exposed to clients like that definitely, helps. Because in my day-to-day life I don't really experience people crying or telling me the worst thing that's ever happened to them all the time. So when you are exposed to that situation more clinically, I grew." (11-F-OT)

A positive outcome of working alongside people in complex emotional situations was that 75% of students' reported an ever-increasing ability to work with patients who were upset or emotionally vulnerable by implementing a range of EI skills:

"...I think the change comes with more confidence. When you start to feel like you are in the "groove" of it a bit more, and you get the hang of things. I think it's easier to feel more assertive when you feel like you know what you are doing." (15-F-SP)

"...(during prac) I learnt on a deep level what empathy actually means. My confidence to be empathetic grew when I realised it was not about me overlaying my own experience, but being open to what they were bringing and experiencing and hearing what they were going through. You can read all you like about empathy, but being empathetic is completely different." (01-F-OT)

Students also reported that being immersed in a positive supervisory environment lead to improvements in EI skill – however, this will be discussed in more detail in the T1 to T3 section below.

The decline in EI skills tended to occur when they were immersed in a negative or unsupportive supervisory environment or felt they had a poor relationship with the supervisor. A negative supervisory environment could include a supervisor who was overly critical, lacked emotional connection with the student, instilled a sense of fear, belittled the student, or set up a power differential between the student and supervisor. A study of nursing students' perception of the influences on their clinical learning experience highlighted a similar array of interfering factors (O'Mara, McDonald, Gillespie, Brown, & Miles, 2014). The study identified that the primary factor that negatively impacted students' learning was a poor relationship with the supervisor, especially when the supervisor was "...overly critical, played favourites, or were unpredictable in their responses" (p.210). Students in our study reported that the supervisor could negatively impact an array of EI skills. For example, even a supervisor's body language could result in a student shutting down emotionally. For example, this student described the impact of a subtle 'drop of the head' by their supervisor during a treatment session. The student perceived the 'drop of the head' to indicate they were incompetent and useless, which ultimately lead the student to shut down emotionally, as well as cognitively.

"...it was like in slow motion. I'm applying the monofilament to the guy's hand, and I was just seeing out of the corner of my eye the other supervisor just dropping her head. And I was feeling, well, you didn't even show me how to do a Semmes-Weinstein. But it's the first time I'm doing it, you can't expect me to be the guru at it that I bet you were". (7-M-OT)

Another student perceived that the supervisory style resulted in waning *self-regard*:

"With this supervisor, I felt put back – actually, belittled. My supervisor had overwhelmed me and it really "squished me". So, even though I had some improvement in some of my individual clients, the whole experience "dumbed"

my self-regard. My own success with those clients wasn't big enough to overcome the supervisor's impact on me." (22-F-SP)

This student's EI scores declined in *emotional expression*, *self-regard*, and *assertiveness* when they were on a placement where the supervisory environment was described as follows:

"It was too intense... I didn't get a lot of time by myself to sit around and think. On other pracs, I was allowed to be more independent, and if I had questions, I could go and ask, and it would get sorted out. I wasn't put on the spot...They couldn't hide their disappointment very well if I didn't do something good, which made me feel worse." (13-F-OT)

Another student highlighted the negative impact supervisors can have when they show a lack of trust by taking over a session that the students was meant to be leading:

"I had other supervisors that talk over you and just take over when I thought I was doing things perfectly. The supervisor would go "Oh, you are not going to say anything. I will just do it"." (23-F-PT)

Similarly, when students perceived that the supervisory style induced a sense of fear they reported waning EI skills:

"Like one of those supervisors who feels that students develop better when you put fear in them. When you put fear in them it means that they'll perform because they need anxiety to perform." (07-M-OT)

Ultimately, supervisors who use behaviours during student supervision that induce a sense of fear, feeling belittled, or create power hierarchies have an unequivocal negative influence on the students' learning. This finding is supported by O'Mara et al. (2014) who investigated nursing students who had experienced what they termed 'challenging clinical learning environments'. The result of being immersed in a negative learning environment lead the students to be afraid to ask questions and reduced the

number of learning opportunities they were willing to embrace. Some of the students in the O'Mara et al. (2014) study reported that negative supervision styles induced a lack of confidence, made them feel like 'throwing up', and they became fearful of being watched by the supervisor.

To use a metaphor, these fluctuations in EI skills, as therapy students undertake their initial full-time extended clinical placements, are akin to a wave in the ocean. Waves grow and can become powerful forces; just as a student's EI can flourish and mature which resulted in the student feeling more competent in their practise skills, ability to work with patients in emotion-charged scenarios, and ultimately feeling like a more effective therapist. However, waves also crash and lose power; just as a student's EI can wane when they had a negative experience during the placement, for example, with a poor supervisor or negative supervisory environment.

5.1.3 Exploration of the trends and changes in the EI scores from T1 to T3 using the themes from the content analysis

In this section, the themes and sub-themes that emerged from the content analysis are integrated with the results presented in Paper 3.

Between T1 and T3, the therapy students had completed a mean of 4.02 clinical placements (SD=1.4 placements) ranging in length from five weeks to 10 weeks, with a mean of 124 days (SD=33 days). Placements between T2 and T3 were similar to the period between T1 and T2, which were mostly full-time and in a range of local, rural, and international locations. Over this period of time, the therapy students showed a significant increase in *Total EI* ($p=0.005$). Significant increases were seen in the Composite scores of *self-perception* ($p=0.005$), *self-expression* ($p=0.046$), *decision-making* ($p=0.001$), and *stress management* ($p=0.031$) and in the Subscale scores of *self-regard* ($p=0.047$), *self-actualisation* ($p=0.002$), *independence* ($p=0.003$), *problem-solving* ($p=0.002$), *reality testing* ($p=0.003$), and *flexibility* ($p=0.06$). There was no significant decrease in any EI Composite or Subscale score. Over the T1 to T3 period, 44% or more of the individual therapy students increased their *decision-making* (48%), *self-regard* (48%), *self-perception* (47%), and *independence* (45%) scores.

The arrows in Figure 5.3 depict which of themes explain the trends and changes in EI scores from T1 to T3.

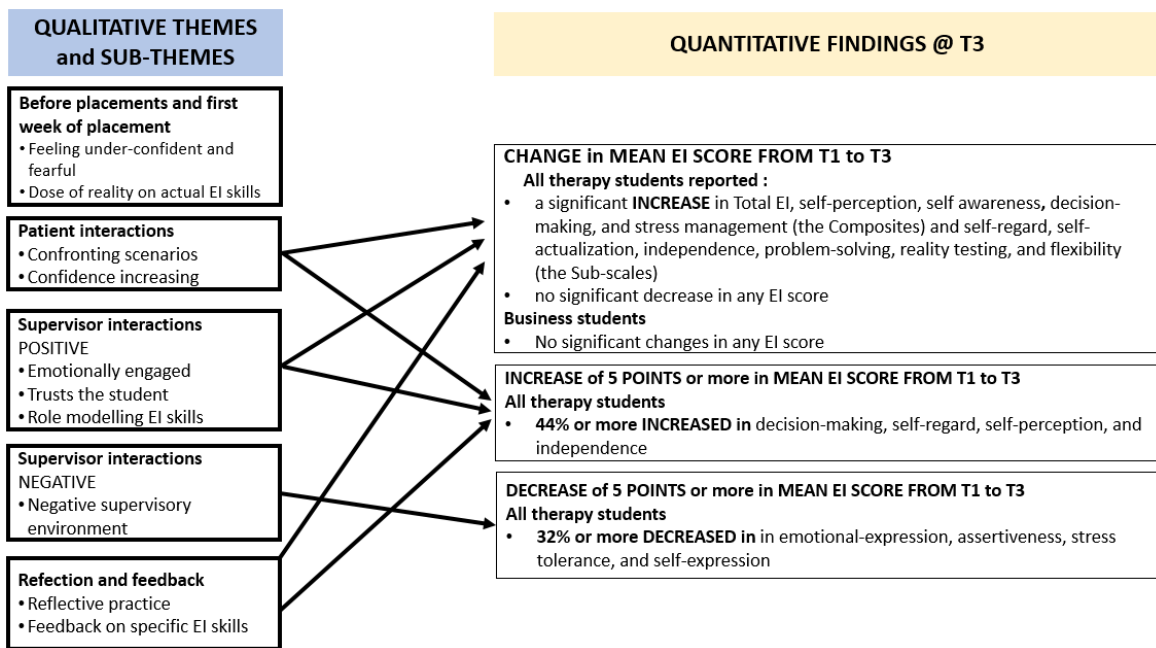


Figure 5.3: At T3, after therapy students have completed ALL full-time clinical placements - with arrows indicating which of the qualitative themes assist in explaining the changes in EI Composite and Subscale scores.

In summary, all the themes, except the ‘before placement and first week of placement’, can assist in understanding the following two trends in EI scores between T1 and T3. The two trends are (i) amongst the therapy students there was a significant increase in Total EI as well as four of the Composite and six of the Sub-scale scores, and (ii) a large percentage of individual students reported increased EI scores in *decision-making, self-regard, self-perception, and independence*; and a large percentage of individual students with decreased EI scores in *emotional expression, assertiveness, stress tolerance, and self-expression*. Each of these will now be discussed.

5.1.3.1 Increases in therapy students Total EI and other EI skills between T1 and T3

Although there were no significant improvements in any EI score from T1 to T2, by the end of their clinical placements the therapy students showed a significant increase, compared to their baseline EI scores, in Total EI as well as four of the Composite and six of the Sub-scale scores. Interviewees attributed 95% of their individual increases and decreases in EI scores to experiences during their placements. The remaining five percent of EI changes were attributed to personal factors that occurred external to

placements. These findings correlate with Clarke (2006) and Billett (2001) who identified that the workplace is a rich and potent place to learn new skills, as such placements are an essential place for therapy students to learn EI skills. Interviewees in our study reported that the reasons for the increasing EI skills included being immersed in a positive supervisory environment, EI skills being role modelled by supervisor/s and other healthcare professionals, being encouraged to reflect on EI skills, and being provided with feedback on their EI skills. These three critical facets of placements will be discussed in this section.

All interviewees reported that being immersed in a positive supervisory environment lead to improvements in EI skills. A large number of interviewees (79%) reported that supervisors who were caring and supportive, and who trusted the student, tended to have a positive influence on EI skills. Students frequently discussed that EI skills, such as *independence* and *self-regard*, improved when a supervisor trusted the student. Billett (2001) argues that a clinical educator who entrusts the learner and gives them real responsibilities will foster a sense of agency in the learner which, in turn, allows the learner to move from a peripheral role to full participation in the healthcare team. This is highlighted by the 54% of our interviewees who discussed how critical it was that their supervisor allowed them to practise independently with patients, even when they (the student) lacked confidence, which allowed the student to be true to themselves, as illustrated by these quotations:

“My supervisor had the faith and belief in me to do it by myself which was really good. So that gave you the confidence to work with patients independently. During my first placement, I wasn’t given that autonomy.” (03-M-PT)

“I think I wasn’t so stressed because the supervisor showed that she was confident in my abilities, and I felt comfortable – confident in my abilities. So once she did that, I could relax and be myself.” (22-F-SP)

The majority of our interviewees (79%) agreed that supervisors who were genuinely concerned and mindful of when the student needed emotional support, assisted in

increasing their confidence in a range of EI skills. The desire by students for emotional support is emphasised in Proctor's model of clinical supervision (Gillieatt, Martin, Marchant, Fielding, & Duncanson, 2014; Proctor, 1987) where restorative or supportive functions are critical to the student-supervisor relationship because of the emotional support and support in managing and stress that can be offered by the experienced clinician to the student. The impact of this type of emotional support is highlighted by these statements:

"My supervisors were fantastic. They'd say 'It's okay. Take a minute' when I needed it. Just having that kind of reassurance to be allowed to step out for a couple of minutes and just calm myself down. It was nice to be 'heard'. The good supervisors understand you and they let you grow." (23-F-PT)

"...I was crapping myself about running an anxiety/depression group. But I was quietly confident because I had a really good supervisor sitting next to me. I knew he was just pushing me...he realised where my own anxiety would stop me from pushing myself. He gave me enough anxiety to perform, but not too much where I started fearing him. He made me feel safe to explore." (07-M-OT)

At the same time, 30% of interviewees were able to recognise that their EI skills flourished when the supervisory style was firm and challenging. Supervisors who delivered only positive or generic feedback did not have the same positive influence as the supervisor who had higher expectations and regularly challenged the student to improve in specified areas of practise. The importance of a quality clinical supervisor who is skilled in guiding the student and provides constructive feedback promptly that is based on direct observation of the student's performance is well documented (Burgess & Mellis, 2015; Clynes & Raftery, 2008; Fenton, 2005; Ramani & Krackov, 2012). As Burgess and Mellis (2015, p. 373) state "...receipt of accurate feedback can help narrow the gap between actual and desired performance...". Research on undergraduate nursing students has demonstrated that high quality feedback is associated with higher grades (Plakht, Shiyovich, Nusbaum, & Raizer, 2013), a feeling that was reiterated by this student:

“... (supervisors) can be firm, that’s a hundred percent fine. They say, "Look, these are the things that I want you to do." She even told me, "Look, you haven't done xxx by the time, it's not acceptable, you need to pull your socks up... They were really firm, he told me what he expected for the prac, and then how I'm to progress, but then debriefed with me two times a week to make sure that I was going okay.” (07-M-OT)

Students (67%) reported that receiving feedback focussed on their EI skills, alongside feedback about clinical skills such as assessments, interventions, practical skills, verbal, and written communication lead to improved EI skills. Burgess and Mellis (2015) reinforce that feedback has the most impact on students’ behaviour and clinical performance when the feedback is focussed on a specific task. As such, supervisors who can provide feedback on specific EI skills to students during clinical placements should have the potential to enhance these EI skills, a feeling that was reiterated by these interviewees:

“(The supervisor) pulled me up for being not assertive enough. They would challenge me to do better. They gave me a few phrases to use next time which were good ideas.” (22-F-SP)

“When you’re working with a supervisor who’s watching you every day and giving you feedback on things you’re doing right, things you’re doing wrong. You get very good at noticing more things about yourself. And how you’re feeling about things.” (05-M-OT)

“... (great supervisors) give me feedback that’s really in tune with what I think. It’s not just generic. It’s really specific to you. It’s direct.” (15-F-PT)

Whereas, 34% of students reported that supervisors who built a negative supervisory environment that was infused with fear and power hierarchies hindered the students’ EI skills, such as this student:

“...there are great supervisors who are firm with you, who are pushing you, who are challenging you, but it's done in a safe environment. Whereas when you are in the environment of fear, where there is a hierarchy. That hinders your learning, your engagement and your use of your emotional intelligence skills.” (07-M-OT)

During clinical placements, all students had multiple opportunities to observe their clinical supervisors, as well as numerous other members of the interprofessional team, role model an array of clinical skills and behaviours. Alongside the clinical skills, students were also able to observe EI skills being role modelled with patients and when working with the healthcare team. Many authors have reported the crucial role of students having the opportunity to observe experienced practitioners role modelling practical skills and behaviours (Fenton, 2005; Schwind et al., 2004; Stagnitti et al., 2010). One study reported that the quantity of time spent interacting with the clinical supervisor influenced the learning that students reported during placements (Schwind et al., 2004). Fifty-four percent of our interviewees reported that they flourished when they were able to observe EI skills being implemented with people in emotionally vulnerable states or dealing with challenging scenarios. As these students stated:

“...on my first day, a patient turned round and said ‘fuck off’. My supervisor was so calm and held her hand, talked calmly and spent time just being with her. Later we talked about it. I know that watching my supervisor helped me grow.” (01-F-OT)

“... I’d see my supervisor do something and my mind would be blown and that would make me sort of reset my view of myself and where I am at.” (02-F-OT)

“... for the most part, the people I worked with were outstanding. I watched a mental health nurse interview a family. Really vulnerable people in a very vulnerable position. Torn apart. You could see their body language and you could hear it in their voices. He was like a conductor the way he did the

interview and the way he got them to talk and the way he encouraged everybody and it was like watching a dance it was just beautiful..." (01-F-OT)

The role modelling of EI skills, such as those described by the students in the above quotes, could lead to a student being more *independent* and feeling better equipped to make decisions (*decision-making*) when working with patients in complex emotional scenarios. Students would then attempt the role modelled EI skills and if they experienced success, lead to students feeling increased *self-regard*. This process of enhancing EI skills is similar to Bandura's (1994) sources of self-efficacy development, especially the mastery experience and vicarious experience phases. Vicarious experience occurs when a person learns by observing other people perform the skill. Witnessing other people succeed in performing a skill increases their belief in their capacity to succeed in the same skill. Mastery experience is where a student practises a specific skill and succeeds (Bandura, 1994). See Chapter 6 for a more in-depth analysis of Bandura's source of self-efficacy.

Our interviewees (58%) reported that supervisors who recognised and appreciated that the student was still a student, in the early stages of their professional career, allowed EI skills to flourish more than supervisors who expected the student to be performing at or beyond a graduate level. Tryssenaar and Perkins (2001), who used reflective journals to track the learning of undergraduate occupational therapy and physiotherapy students, agreed by reporting that clinical supervisors and university educators should be cognizant of the transition from novice-student to practising therapist when supporting and guiding student placements. The process from novice to expert practitioner is depicted with five stages and was developed by Dreyfus and Dreyfus in the 1970s, and modified by Benner (1984). These below statements from students echo the oft-reported journey that healthcare professionals take when progressing from a novice to expert practitioner:

"...they were patient with the fact that I was still a student, and didn't have a lot of experience. I had a decent theoretical knowledge base, but my clinical skills were not up to standard or well developed. She knew the areas and types of practice that would help and benefit me most." (09-M-PT)

“..I had this great supervisor. She realised I was a bit nervous on my first day. She asked me questions and she would initiate conversations with me and that made me more comfortable to speak my mind. I just felt like I couldn't talk to this other supervisor.” (07-M-OT)

“She (the supervisor) was so supportive within and outside of sessions as well. She was willing to answer questions, willing to come with us when we were doing individual assessments, and always there, but not controlling the situation. So whenever we needed help, we could go out and reach for her, but she could also pick up within sessions particularly when we needed help. So she would jump in and not just let us “drown” in a situation and become embarrassed in what we were doing...and then we can improve on at the end.” (22-F-SP)

The majority of interviewees (79%) reported that reflection and self-critique of their EI skills provided insights into their EI strengths and which skills needed growth. Interviewees reported that reflection often resulted in improved confidence in their EI skills. Students were mostly encouraged by a supervisor to reflect on their EI skills, but some took it upon themselves to actively reflect on EI skills. The preferred medium for reflection was a face-to-face discussion, while other students favoured written journals to reflect on their EI skills. One student recounted that they wrote in a journal on most days of their placements. This student would regularly re-read her journal entries which she reported lead to an understanding of her specific skills that were advancing and other skill sets that were not improving. The supervisor was the preferred source of reflection, especially if the supervisor was willing to open up and be honest about his or her own emotions and EI skills. Some students used other students who were on placement in the same site as their reflection medium. Students also reflected with people external to the placement site such as family or partners as well as fellow students who were not on placement with them. Students on placements where an adverse supervisory environment existed, tended to reflect with people external to the healthcare setting. These quotes demonstrate the array of reflective techniques that were used:

“I use my journal as a place to be honest. A place to vent and a place to reflect. And sometimes I take a few days to reflect on something. I will write it down what happened and only later do I write about how I felt. Maybe a few days later I might make sense of it. I love looking at my journal because I can really see where I was at and I can see how I’ve grown and I can see you know good and bad and I can go back and re-reflect and re-learn.” (01-F-OT)

“When I reflect back on something I did on prac and go ‘Oh, that’s why I was behaving like that’ or ‘that’s why I reacted like that’. It’s harder to understand those emotions or recognise the emotion that you are feeling in that minute or second. But later I can reflect and learn.” (15-F-PT)

“On my international prac I was at my most emotionally expressive because that was a more challenging prac in terms of emotions, and what you’re confronted with. Just being with lots of other prac students all the time, living together, going somewhere else, that’s all very challenging, and so you do have to be able to express how you’re feeling and what you’re thinking about.” (11-F-ST)

“...my supervisor and I worked quite closely together. We’d see a patient, say, who might have a personality disorder, and I’d do an interview with them and they would bring up some quite heavy things, on maybe suicide or things like that. Afterwards, we’d talk about and see what my perception of how things went and how I was feeling about it. How I could have handled the situation a bit better, and I think that hearing feedback, I could better see how I actually acted in myself.” (05-M-OT).

Reflective practice is a critical employability attribute amongst healthcare professions and can serve as a facilitator to learning new skills (Dacre Pool & Sewell, 2007; Peixoto & Peixoto, 2016; Schell, 2009). Developing strategies that enhance the reflective practice abilities are essential for a student to become a competent healthcare practitioner (Moon, 2006; Stagnitti et al., 2010; Tan, Ladyshevsky, & Gardner, 2010). Peixoto and Peixoto’s (2016) scoping review of the methods used for reflective

practice in nursing students identified a multitude of methods including reflective portfolios, critical event analysis, reflective writing, storytelling, and mentor/supervisor support. As such, it is no surprise that the students in our study identified that reflecting with a journal or discussions with supervisors, peers, friends or family were essential to the process of developing EI skills during clinical placements.

5.1.3.2 Decreasing EI scores in therapy students between T1 and T3

Amongst the therapy students from T1 to T3, there was no significant decline in any EI Composite or Subscale score, however over the same period of time 32% or more of therapy students decreased their individual *emotional-expression (38%), assertiveness (37%), stress tolerance (32%),* and *self-expression (34%)* scores by five or more points. The possible reasons for the decline in these EI skills were the negative supervisory environment, students realising their EI skills were not as mature as needed, and comparing their EI skills to their experienced co-workers during clinical placements.

These factors that might negatively impact EI skills have been discussed in the above sections in this chapter.

The conclusions and recommendations from Phase 3 of the study are discussed in Chapter 6.

5.2 Additional results

This final section of Chapter 5 will present the results of the therapy students' EI scores at T2 and T3 and compare these to the Australian EQ-i^{2.0} population norms and business students. A similar analysis is published in Paper 1 but only used the T1 data. None of the subsequent journal articles, Papers 2, 3 and 5, included this analysis. The reason these results were not incorporated into Papers 2, 3 or 5 was the restrictive word limits imposed by the publishers.

As per Paper 1, the below analyses use a moderate effect size of higher or lower than ± 4.9 points. This was selected because the standard deviations for each of the EI scales are similar (ranging 11 to 15). Thus a moderate effect size of 0.5 would correspond to a difference in mean scores of approximately 5-points.

5.2.1 Comparison of therapy students' T2 and T3 scores to Australian EQ-i^{2.0} population norms and business students

Table 5.1 presents the EI scores for all therapy students at T2 compared to Australian EQ-i^{2.0} population norms and business students. Table 5.2 presents the EI scores for all therapy at T3 students compared to Australian EQ-i^{2.0} population norms and business students.

At T2, the mean EI scores for all therapy and the business students were all above 90 (i.e., no scores in the low EI range). No mean EI scores were above 110 (i.e., in the high EI range) for either group of students. As therapy students undertook their initial set of full-time clinical placements, it appears that the EI skills that were below normal at T1, namely independence (in all therapy students) and problem-solving and stress tolerance (in speech pathology students) were now in the normal range.

The EI scores that were significantly higher than the Australian population norms were the *interpersonal composite*, *interpersonal relationships*, *empathy*, *social responsibility*, and *impulse control*, similar to T1. The EI scores for therapy students that remained significantly lower than the Australian population norms at T2 were, *assertiveness*, *independence*, *problem-solving*, and *stress tolerance*. In comparison to T1, at T2 students also reported that *self-expression* was now significantly lower than the Australian population norms, while *flexibility* was no longer significantly lower.

At T2, when comparing the business students to the Australian population norms, no EI scores were significantly higher. Only one EI score, *decision-making* was significantly lower than the Australian population norms.

Comparisons at T2, using a Wilcoxon 2-sample test, of the therapy students and business students, showed significantly higher EI scores for therapy students in *impulse control* only, while business students were significantly higher than therapy students in *assertiveness*.

At T3, the mean EI scores for all therapy and the business students all remained above 90 (i.e., in the normal range). Again, no mean EI scores were above 110 (i.e., in the high EI range) for either group of students.

The EI scores for therapy students that were significantly lower than the Australian population norms were *assertiveness*, *independence*, *problem-solving*, and *stress tolerance*. The EI scores for therapy students that were significantly higher than the Australian population norms were *self-actualisation*, the *interpersonal composite*, *interpersonal relationships*, *empathy*, *social responsibility*, and *impulse control*.

At T3, when comparing the EI scores of the business students to the Australian population norms, no EI scores were significantly higher or lower than the Australian norms.

Comparisons at T3, 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 the *interpersonal composite, empathy, social responsibility,* and *impulse control*, while business students had no EI scores that were significantly higher than therapy students.

Table 5.1: EI scores at T2 for all therapy students compared to Australian EQ-i^{2.0} norms and business students

	All therapy student EI scores @ T2		Business student EI scores @ T2		Australian EI Population Norms		All therapy students compared to Australian EI norms		Business students compared to Australian EI norms		All therapy students compared to business students	
	Mean	SD	Mean	SD	Mean	SD	Difference	p-value [^]	Difference	p-value [^]	Difference	p-value [*]
Total EI Score	99.6	12	98.6	13	99.4	14.5	0.2	0.77	-0.8	0.74	0.5	0.81
SELF PERCEPTION	101.2	12	100.0	14	99.2	14.2	1.0	0.14	0.8	0.77	0.8	0.91
Self-regard	97	14	98.4	16	99.6	14.2	-2.6	0.04	-1.2	0.70	-1.3	0.47
Self-actualization	104.1	14	100.7	14	99.4	14.1	3.7	0.002	1.3	0.61	2.5	0.39
Emotional self-awareness	102.9	13	101.6	13	98.8	15.2	4.1	<0.001	2.8	0.26	0.9	0.99
SELF EXPRESSION	93.5	14	97.8	13	98.8	14.6	-5.3	<0.001	-1.0	0.71	-4.4	0.11
Emotional expression	100.4	14	101.7	13	97.5	15.0	2.9	0.02	4.2	0.09	-1.3	0.77
Assertiveness	92.0	16	99.0	13	100.7	14.4	-8.7	<0.001	-1.7	0.51	-7.0	0.03
Independence	91.9	14	94.3	16	99.5	15.7	-7.6	<0.001	-5.20	0.10	-2.4	0.34
INTERPERSONAL	106.7	11	103.6	12	100.1	14.7	6.6	<0.001	3.5	0.09	2.8	0.33
Interpersonal relationships	104.2	12	102.5	13	97.9	14.6	6.3	<0.001	4.6	0.07	1.3	0.49
Empathy	107.1	10	102.6	14	100.7	15.2	6.4	<0.001	1.9	0.47	4.5	0.14
Social responsibility	105.3	11	104.7	11	100.2	14.6	5.1	<0.001	4.5	0.03	0.6	0.73
DECISION MAKING	99.2	13	93.7	15	99.1	15.0	0.1	0.38	-5.4	0.07	4.4	0.11
Problem-solving	92.7	15	94.3	16	99.1	15.6	-6.4	<0.001	-4.8	0.13	-2.1	0.57
Reality-testing	98.7	12	97.3	13	100.3	14.5	-1.6	0.17	-3.0	0.23	1.5	0.68
Impulse control	103.6	15	94.1	17	98.7	14.9	4.9	<0.001	-4.6	0.16	10.9	0.002
STRESS MANAGEMENT	96.9	14	97.9	15	100.8	14.4	-3.9	<0.001	-2.9	0.31	-1.3	0.97
Flexibility	97.7	14	96.6	17	101.4	14.6	-3.7	<0.001	-4.8	0.15	0.8	0.86
Stress tolerance	92.3	15	96.4	14	100.6	14.4	-8.3	<0.001	-4.2	0.12	-4.1	0.31
Optimism	102.1	13	101.3	14	100.1	14.1	2.0	0.18	1.2	0.64	0.3	0.86

[^] p-value calculated from the t-test

^{*} p-value calculated from the Wilcoxon 2-sample test

Table 5.2: EI scores at T3 for all therapy students compared to Australian EQ-i^{2.0} norms and business students

	All therapy student EI scores @ T3		Business student EI scores @ T3		Australian EI Population Norms		All therapy students compared to Australian EI norms		Business students compared to Australian EI norms		All therapy students compared to business students	
	Mean	SD	Mean	SD	Mean	SD	Difference	p-value [^]	Difference	p-value [^]	Difference	p-value [*]
Total EI Score	100.9	12.6	97.0	15.4	99.4	14.5	1.5	0.20	-2.4	0.44	3.9	0.18
SELF PERCEPTION	102.3	12.1	97.9	16.1	99.2	14.2	3.1	0.005	-1.3	0.69	4.4	0.23
Self-regard	97.2	14.4	94.7	19.3	99.6	14.2	-2.4	0.06	-4.9	0.22	2.5	0.97
Self-actualization	106.0	12.3	99.6	17.1	99.4	14.1	6.6	<0.001	0.2	0.95	6.4	0.10
Emotional self-awareness	103.6	13.0	101.5	13.8	98.8	15.2	4.8	<0.001	2.7	0.34	2.1	0.63
SELF EXPRESSION	95.3	14.7	95.4	16.1	98.8	14.6	-3.5	0.008	-3.4	0.30	-0.1	0.76
Emotional expression	101.8	16.8	99.4	15.2	97.5	15.0	4.3	0.004	1.9	0.54	2.4	0.45
Assertiveness	93.5	14.6	97.9	13.2	100.7	14.4	-7.2	<0.001	-2.8	0.32	-4.5	0.20
Independence	93.0	15.1	92.5	18.4	99.5	15.7	-6.5	<0.001	-7	0.07	0.5	0.87
INTERPERSONAL	107.8	10.5	99.5	11.9	100.1	14.7	7.7	<0.001	-0.6	0.99	8.3	0.002
Interpersonal relationships	105.0	12.0	98.5	14.8	97.9	14.6	7.1	<0.001	0.6	0.84	6.5	0.05
Empathy	108.2	10.4	100.8	14.8	100.7	15.2	7.5	<0.001	0.1	0.99	7.4	0.008
Social responsibility	106.5	10.3	99.9	12.4	100.2	14.6	6.3	<0.001	-0.3	0.90	6.7	0.004
DECISION MAKING	99.3	13.3	96.5	17.5	99.1	15.0	0.2	0.87	-2.6	0.48	2.8	0.38
Problem-solving	93.1	14.1	97.6	16.9	99.1	15.6	-6	<0.001	-1.5	0.67	-4.5	0.19
Reality-testing	100.5	12.4	95.8	13.1	100.3	14.5	0.2	0.85	-4.5	0.10	4.7	0.14
Impulse control	105.6	13.5	97.5	16.2	98.7	14.9	6.9	<0.001	-1.2	0.73	8.1	0.02
STRESS MANAGEMENT	98.2	15.0	97.3	17.7	100.8	14.4	-2.6	0.05	-3.5	0.33	0.1	0.98
Flexibility	98.6	15.2	95.5	18.3	101.4	14.6	-2.8	0.04	-5.9	0.12	3.1	0.72
Stress tolerance	93.9	16.2	98.9	14.3	100.6	14.4	-6.7	<0.001	-1.7	0.56	-5.0	0.14
Optimism	102.7	12.9	98.0	18.3	100.1	14.1	2.6	0.02	-2.1	0.58	4.7	0.32

[^] p-value calculated from the t-test

^{*} p-value calculated from the Wilcoxon 2-sample test

Chapter 6 CONCLUSIONS and RECOMMENDATIONS

6.1 Overview

This thesis describes a longitudinal, sequential explanatory, mixed methods study. The quantitative data collection phase investigated if the emotional intelligence of occupational therapy, physiotherapy, and speech pathology students changed over the final 16-months of their university program as they participated in full-time, extended clinical placements. This was followed by a qualitative phase where semi-structured interviews were undertaken with 24 of the therapy students to ascertain if, and how, the placements impacted the changes in their emotional intelligence.

This chapter presents the new knowledge that this study has contributed about the baseline and changing EI of therapy students and the influence that clinical placements have on their EI skills. The chapter commences by detailing the responses to the research hypotheses and research questions posed in Section 1.3 of this thesis. The chapter then provides a series of recommendations for clinical supervisors and university educators of undergraduate therapy students and employers of therapy graduates. The chapter concludes with a review of the strengths and limitations of the study and proposes ideas for future research.

It is important to note that because our study only included undergraduate therapy students, the findings are more applicable to new graduates from undergraduate programs. The findings may be less applicable to graduates from post-graduate entry therapy programs. Post-graduate students tend to be older and therefore, may possess higher EI scores and better developed EI skills as a result of natural maturation. Thus, in this chapter where the term graduate or new graduate is used, we are referring to graduates from undergraduate therapy programs.

6.2 Conclusions

In completing this study, the following conclusions are made in regard to the research hypotheses and research questions. These conclusions were reached through the use of a rigorous methodology and a conservative approach to data analysis, as well as the use of an EI conceptual model that is particularly relevant to the realities of practising as a healthcare professional.

Research Hypothesis #1: The baseline emotional intelligence scores of therapy students, before they commence full-time extended clinical placements in their third year, will be significantly lower than the Australian population norms.

Our findings partially support Hypothesis #1 as only some of the baseline EI scores of therapy students, before they commence full-time extended clinical placements in their third year, were significantly lower than the Australian population norms.

Fourteen of the Composite and Subscale scores for therapy students were the same or significantly higher than the population norms. This is crucial new knowledge that needs to be imparted to clinical supervisors and university educators of undergraduate therapy students. Previous research has not detailed the specific EI skills of Australian therapy students in comparison to the Australian population norms. The previous research compared the EI scores of occupational therapy and physiotherapy students to the age-matched norms, finding that both cohorts scored higher than the norms (Leaderman, 2016). However, our study was unique in that we compared therapy students to the Australia population norms because these population norms more closely match the ages and EI skill level of healthcare professionals, patients, and other staff that therapy students' work alongside during clinical placements. This new knowledge shows that most therapy students report EI skills that emulate the EI skills of patients and healthcare professionals they work alongside during placements. This result is tempered by our T2 findings that show that students receive a reality check when they commence their clinical placements with a subsequent decline in some skills, especially *assertiveness*.

Perhaps of more importance to clinical supervisors and university educators are the seven EI skills that were significantly lower than the Australian population norms when these students commence full-time, extended clinical placements. The EI skills of therapy students that were significantly lower than the Australian population norms were *assertiveness, independence, problem-solving, stress management composite, stress tolerance, and flexibility*. Contrary to our hypothesis, the results identified that four EI scores of therapy students were actually significantly higher than the Australian population norms, while another ten EI scores were similar with no significant difference. The EI scores that were higher than the Australian population norms were: *self-actualisation, interpersonal relationships, empathy, and impulse control*. The EI scores that were similar to the Australian population norms were: *self-perception composite, self-regard, emotional self-awareness, self-expression composite, emotional expression, interpersonal composite, social responsibility, decision-making composite, reality testing, and optimism*. The only paper we located that described the low EI scores of healthcare professionals was conducted with otolaryngology residents (Dugan, Weatherly, Girod, Barber, & Tsue, 2014). They reported low scores in *emotional self-awareness, self-actualization, interpersonal skills, flexibility, and problem-solving* skills before these residents commenced an EI training course. Paper 1 (Chapter 4) details the impact that the lower EI scores might have on a student's performance during clinical placements.

Our study adds considerable depth to understanding the strengths and shortcomings of therapy students' EI skills as they commence their full-time, extended placements in the third year of their university program.

Research Hypothesis #2: The emotional intelligence scores of therapy students will significantly improve compared to business students, after their first one or two clinical placements over the final 16-month period of the students' university program.

Our findings do not support Hypothesis #2 as no EI scores in the therapy students showed a significant increase between T1 and T2 when they had completed a mean of

55 days of clinical placements. Previous research has reported conflicting results with some studies reporting a significant increase in EI scores over relatively short periods (Borges, Kirkham, Deardorff, & Moore, 2012), while another study has indicated that EI scores in healthcare students do not change significantly (Larin et al., 2011).

Our study went a step further than these studies and examined the percentage of individual students who had substantial increases or decreases in specific EI skills over this period. We identified that the EI scores where a third or more of the therapy students' scores decreased by more than five points between T1 and T2 were: *assertiveness, problem-solving, impulse control, self-actualisation, and stress tolerance*. Our study is unique as no previous research has identified the extent of therapy students with EI scores that are perceived to be declining. The EI scores where a third or more of therapy students' scores increased by five points or more: *self-actualisation, emotional expression, independence, reality testing, and optimism*. The EI scores with the highest percentage of students with only minimal or no change (i.e., change was not more than or less than five points) between T1 and T2 were *decision-making, social responsibility, and the Total EI score*. *Self-actualisation* had the lowest percentage of students who reported minimal or no change. Overall, we identified a tendency for EI scores to fluctuate during the initial series of placements, while our interviews highlighted that clinical placements often showed students the reality of how well-developed their EI skills actually were, and more importantly, which skills needed improvement. This finding aligns with Stratton, Saunders, and Elam (2008) who reported that medical students' ability to effectively manage emotions fluctuated across the undergraduate course because of the quality of personal and professional relationships at the clinical site. Paper 2 details the impact that the fluctuating EI scores might have on a student's performance during clinical placements, which is essential information for clinical supervisors and university educators.

Contrary to Hypothesis #2, *assertiveness* showed a significant decline in the therapy students. This new knowledge will be important to clinical supervisors and university educators. The interviews identified that the decline in assertiveness occurred principally when students were communicating with supervisors and other healthcare team members who had considerably more experience in the healthcare settings than

the students. Rowe (2015) maintains that the positive impact of clinical placements can appear to be so obvious that researchers often disregard the adverse outcomes. As Zegwaard (2015, p.90) agrees, stating, "...it must not be ignored that participating in WIL (work-integrated learning) can also generate negative impacts, nor can it be ignored that WIL research does occasionally generate negative or undesirable findings". University educators should take heed of this finding and are encouraged to spend more time building students' confidence in assertive communication, especially when communicating with experienced healthcare professionals. Paper 4 discusses the importance of embedding more EI modules as part of their curriculum before these students start these extended placements.

An important realisation from our study is that EI skills in individual students can fluctuate. Clinical supervisors and university educators need to be aware of this tendency for EI to rise and fall, especially the reasons why these EI skills decline that are detailed in Paper 4.

Research Hypothesis #3: The emotional intelligence scores of therapy students will significantly improve compared to business students, over the final 16-month period of the students' university program.

Our findings support Hypothesis 3 as the therapy students' *Total EI* score increased significantly over the final 16 months of their university program, the period that corresponds with their final series of clinical placements (M = 124 days of placement). The therapy students also showed a significant increase in most of the Composite: *self-perception, self-expression, decision-making, and stress management*; and six of the Subscales: *self-regard, self-actualisation, independence, problem-solving, reality testing, and flexibility* (the Subscales). The findings also support the hypothesis that business students, who do no work-based placements, would show no increases in EI scores over the same period. Our study's findings are similar to Clarke (2010) who reported that EI competencies could be enhanced during workplace learning. Our study's findings are contrary to the Lewis' (2011) study of physiotherapy students who found no significant change in Total EI or subscales over a three year period. Lewis's study used an ability-based EI measure. We cannot state that improved EI skills are the

direct result of clinical placements. Part of the change may have been due to natural emotional maturation that occurs over time, or personal life events external to the placements. However, it is reasonable to infer that clinical placements are a crucial influence on EI skills over the final stages of the therapy students' university program especially given that Total EI and most Composite and Subscale EI scores increased in therapy students, while business students showed no improvement in any emotional intelligence skills. Further evidence that clinical placements are a crucial influence on EI skills is the 95% agreement from the interviewees that clinical placements were the reason EI skills changed.

The findings that *Total EI*, as well as most Composite and Subscale scores improved while students were immersed in clinical settings, should be reassuring to clinical educators and university educators, and validate the critical role that clinical placements have in the transition of the student therapists to practising therapist. Our study also endorses the critical role that placements have in developing EI skills in therapy students. Previous research has reported that healthcare professionals with higher EI scores tend to have enhanced caring behaviours, better ability to deal with complex emotional scenarios, perform well in teams, and ultimately make better clinical decisions (Libbrecht, Lievens, Carette, & Cote, 2014; Quidbach & Hansenne, 2009; Sommaruga, Casu, Giaquinto, & Gremigni, 2016). Thus, it could be inferred that with the improving EI skills, supervisors of therapy students might also observe other performance improvements in students' such as their level of caring, improved team skills, and ability to make clinical decisions under emotional pressure.

Research questions for the qualitative phase were: Do therapy students, with significant changes in EI scores, perceive that changes in their emotional intelligence scores were due to their clinical placements or personal factors? and What aspects of the clinical placement do therapy students perceive as influencing changes in their emotional intelligence scores? **The research question for the integrative phase was:** How do the results from the interviews with therapy students validate and explain the trends and changes in their EI scores over the final 16-month period of the students' university program?

Our study is the first to use interviews to ask students if, and how, clinical placements influence their EI skills. When interviewed, therapy students agreed that the trends and changes in their EI scores were authentic (i.e., the student reported that the increase or decrease from either T1 to T3 actually occurred). The results were conclusive; students agreed that 95% of the changes in EI between T1 and T3 were because of their clinical placements. The remaining five percent of EI changes were attributed to personal factors that occurred external to placements. The content analysis of the interview transcriptions identified an array of factors related to the placements that assisted (or hindered) therapy students' confidence in using their EI skills. During the interviews, students identified that the key influences on EI skills during clinical placements were:

- the interaction between the student and supervisor;
- students having the opportunity to work with patients experiencing emotional distress, pain or loss; and
- students receiving feedback and reflecting on their EI skills.

These themes are similar to findings from other studies (Black et al., 2010; Pront, Gillham, & Schuwirth, 2016) although, neither of these studies explored the impact of the clinical and supervisory environment on EI skills. Our study showed that therapy students initially reported self-doubt about their ability to deal and cope with emotional situations even when undertaking placements in a positive learning environment. However, over time and with more exposure to patients and complex emotional scenarios, their confidence in their EI skills increased. The most important new knowledge for clinical supervisors and university educators is that interviewees

who completed a placement, with what was perceived as a poor supervisory style or poor learning environment, detailed a decline in confidence in EI skills. This decline in their confidence resulted in them tending to shut down emotionally and return to a state of internal self-doubt. Paper 4 describes the types of experiences and the quality of the supervisory environment that students should be immersed in during clinical placements so that their EI skills might flourish.

6.2.1 Conclusion on using the Model of Emotional Intelligence in mixed methods research

We were unable to locate any previous studies that used the Bar-on/Multi-Health Systems' (1997; 2011) Model of Emotional Intelligence in a mixed methods design to investigate the impact of clinical placements on students' EI skills. Despite the oft-discussed shortcomings of self-report tools, the EQ-i^{2.0} provided rich data in which to interview the students about their individual changes in EI skills. As discussed previously, at the start of the interviews students were asked if the change in EI score was authentic and in the vast majority of cases the student agreed that the change was genuine. The Model of Emotional Intelligence goes beyond the scope of the Goleman (1996) model of EI (another mixed model used predominately in business) by incorporating some facets of personality and motivation. As such, during the interviews, the model proved to be a useful tool because it encompasses a broader set of EI skills (compared to the Goleman model) and includes skills that the interviewees easily recognised from their practise. More research is needed using this model in mixed methods design, but from our experience, the tool has much to offer future researchers.

The following section presents recommendations for university educators, clinical supervisors, and employers.

6.3 Recommendations for clinical supervisors, university educators, and employers

Our study contributes to the clinical supervisors, university educators, and employers of therapy graduates' understanding of the how EI skills develop in therapy students and how these skills can be improved (and hindered) during clinical placements. The findings of this study have implications to clinical supervisors who support, provide role modelling, and evaluate students during clinical placements; university educators who prepare and support therapy students before and during placements; and employers of recently graduated occupational therapists, physiotherapists, and speech pathologists. This section will detail recommendations for each of these key stakeholders.

6.3.1 Recommendations for clinical supervisors

This section will discuss the implications of this study's findings for clinical supervisors who oversee students with lower than expected (and more advanced) EI skillsets, and then present strategies that supervisors might use (or avoid) that might have a positive impact on students' confidence to use their EI skills.

6.3.1.1 Implications of students with lower and higher than expected emotional intelligence skills

Reassuringly therapy students, before they commence full-time clinical placements, report EI scores that are significantly higher than the Australian EI population norms in *self-actualisation*, *interpersonal relationships*, *empathy*, and *impulse control* – skills that are inherently important in the healthcare professions. Thus, in these EI skills, most therapy students perceive their abilities emulate or exceed those of the patients and co-workers they will be working alongside during placements. For example, most

of our cohort of students reported well-matured *interpersonal* skills. Thus, during placements, they should be able to build rapport, develop therapeutic relationships, demonstrate *empathy* at appropriate times, and use their *impulse control* to seek advice when necessary rather than give incorrect information. Table 6.1 describes how a student may present if their EI skills matured in each specific EI subscale. 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 EI norms because the general population norms more closely match the healthcare professionals, staff, and patients that students work alongside during placements. Clinical supervisors are recommended to encourage students to use and continue to nurture their EI skills that are already matured.

Table 6.1: Descriptions of how students with matured EI may present during clinical placements (Multi-Health Systems, 2011, p.142-146)

SELF-PERCEPTION	
Self-regard	The student will have belief in their own talents and understand their strengths. They will have a well-developed sense of professional identity and thus should be driven to succeed and achieve their potential.
Self-actualisation	The student should act with purpose and be on a quest for continual learning. They should be able to set aspirational goals that will provide personal satisfaction.
Emotional self-awareness	The student will be able to accurately label and describe their own emotions. They will understand the nuances between emotions and be aware of the impact that emotions have on their performance.
SELF-EXPRESSION	
Emotional expression	The student will be comfortable expressing most emotions and understand the benefits of expressing emotions. The student will have a large emotional vocabulary.
Assertiveness	The student will be capable of being firm and direct when necessary. They are able to express thoughts and ideas without harming others.
Independence	The student is able to make decisions on their own, and they are emotionally independent of others. During emotional scenarios, they are able to work without direction or reassurance from others. They are directive, decisive, and accountable.
INTERPERSONAL	
Interpersonal relationships	The student is sociable and builds authentic relationships. They can develop a network that they can access for advice or support when needed. They can maintain a healthy level of trust and compassion for others.
Empathy	The student will be aware of and able to appreciate the feelings of others. They can demonstrate care and compassion and consider others. They can read people's emotions.
Social responsibility	The student will be interpersonally sensitive. They will be cooperative and concerned about the welfare of others, as well as being concerned about the greater good for the team and community.
DECISION-MAKING	
Problem-solving	The student can choose an optimal solution from many options. Ultimately, they will know how to use emotions to solve problems that take the emotional milieu into account.
Reality testing	The student is grounded and tuned-in into the situation at hand. They are able to verify and validate their own thoughts, ideas and emotions in comparison to other people. Ultimately, they can make sensible and reasonable decisions.
Impulse control	The student will survey a situation before acting. They are deliberate, composed, and calculative under emotional pressure. Ultimately, they avoid rash decision making and are able to resist the emotional pressure to act.
STRESS MANAGEMENT	
Flexibility	The student is open to change, and views change as refreshing and necessary. They are compliant but adaptable and able to roll with the punches.
Stress tolerance	The student has a variety of coping strategies they can use to deal with stress and emotional scenarios. They stay calm under pressure. They are resilient and able to remain composed when times get tough.
Optimism	The student views the world in a positive light and perseveres under emotional duress.

Clinical supervisors also need to be aware that some students' EI scores may be below the population norms. Unfortunately, some students are in fact markedly below the

normal range in a range of EI skills. Table 6.2 describes how a student may present if their EI skills are low in each specific EI subscale.

Table 6.2: Descriptions of how students with low EI may present during clinical placements (Multi-Health Systems, 2011, p.142-146)

SELF-PERCEPTION	
Self-regard	Uncertain of one's abilities; lower self-confidence; lower motivation to achieve potential
Self-actualisation	May not make good use of personal strengths; may set lower personal goals; focusses more on day-to-day tasks rather than being on a quest for ongoing learning; not emotionally invested in their goals
Emotional self-awareness	May not be aware of why feelings or thoughts occur; may struggle to label or define what one is feeling; may appear detached from experiencing emotions
SELF-EXPRESSION	
Emotional expression	Uncomfortable expressing oneself through words, facial expressions, or body language; may appear withdrawn or uneasy in emotional situations; uses limited emotional vocabulary to express oneself
Assertiveness	Passive; may keep thoughts, feelings, and opinions to oneself; may appear withdrawn or unable to articulate needs
Independence	Needs reassurance and guidance from others in emotional situations; relies heavily on others to make decisions; may skirt responsibility; prefers direction on how to handle emotional scenarios
INTERPERSONAL	
Interpersonal relationships	Defensive, sceptical, or closed to other people; may not build bonds that include mutual give or take; may be missing a network to cope with stressful situations; relationships may lack depth, trust, or compassion
Empathy	May struggle to understand how others feel; may not recognise the impact one's behaviour has on others; insensitive to the needs of others; misreads or misinterprets others feelings
Social responsibility	Cut off from social groups or issues; may entertain antisocial attitudes; struggles with collaboration; more an individualist than a collectivist
DECISION-MAKING	
Problem-solving	Overwhelmed with the responsibility of making a decision; easily distracted by emotions; may be anxious; unable to get past emotions; may not draw information from emotions in order to solve problems
Reality testing	May not validate thoughts and emotions against objective data; easily biased by own or others emotions; sets unrealistic goals; may see things the way one wishes they were and not what actually exists
Impulse control	May react in unpredictable ways to emotional situations; impulsive; impatient; overactive; uses an act now-think later approach to making decisions
STRESS MANAGEMENT	
Flexibility	Uneasy with change; may be unable to deal with the emotion associated with change; values tradition; rigid in thinking and behaviours
Stress tolerance	Emotions may get in the way of coping with stress; less tolerant of stress; may experience tension, anxiety, poor concentration, physiological symptoms, or feelings of hopelessness when faced with stress
Optimism	Less resilient in the face of adversity; may hold negative or cynical views of the world; expects and plans for the worst; sets goals that are likely to be conservative

Justifiably, if students present with EI characteristics as described in Table 6.2, clinical supervisors might evaluate such students as under-performing – and it is feasible that students with multiple EI scores in the below normal range may fail clinical placements (although further research is recommended to ascertain if this might be so). Clinical supervisors should also be aware that EI skills could diminish in the initial weeks of placements as students come to terms with the demands of the healthcare setting. For many students, these placements might be the first time they have worked full-time, and for the majority, the first time they have managed a patient caseload and been an integral part of a healthcare team. Some students may feel a diminishing sense of assuredness and confidence as they compare their EI skills to those experienced healthcare professionals around them, in some cases feeling as though they lack the adequate skill-set to deal with the emotional distress or vulnerability that some patients demonstrate.

As a result, students in the first few weeks of placements, as well as those students whose EI skills are low, may demand more support from clinical supervisors, especially in emotionally charged scenarios such as when patients are in pain or distress, families dealing with grief and loss, or during team conflicts. The following section will detail an array of strategies that supervisors could use to foster the growth of EI skills in all therapy, not only those with lower than expected IE skills.

6.3.1.2 Strategies for supervisors that might foster growth in students' emotional intelligence skills

Clinical supervisors should understand that the quality of their interactions with the student can have a positive or a detrimental effect on the students' EI skills. This finding is similar to Billett (2001) who demonstrated that the clinical supervisor plays a critical role in workplace learning by shaping how learners experience the workplace. A decisive finding of our study for clinical supervisors is that the supervisory environment can have a positive impact on students' EI skills. Based on our interviews, we present the following array of recommendations for clinical supervisors that might potentially have a positive impact on students' EI skills.

Supervisors should endeavour to establish a learning environment during the placement where the student feels safe to express their thoughts and be honest about their emotional reactions and feelings. Our findings identified that supervisors who are emotionally engaged and in-tune with the student tend to create this type of optimal learning environment. For example, supervisors should regularly inquire with students on how they are feeling. Supervisors should ensure that the student feels valued by welcoming them to be an integral part of the healthcare team. Supervisors can encourage students to express their concerns, fears, or anxieties verbally. Most important, supervisors need to listen to the student's responses in a genuine manner. Supervisors can assist students to be more emotionally self-aware and to expand their emotional vocabulary by assisting students to be tuned into their changing emotional state through the placement. Supervisors can validate to the student that feeling nervous or anxious is to be expected especially in the first few days and weeks of placement. The supervisor should encourage them to find ways to minimise the impact that stress and anxiety have on their clinical performance. Supervisors can acknowledge that they understand that the student is early in their professional career and reassure them that they will support as well as challenge their EI skill development.

Supervisors should role model, with the student observing, the array of EI skills while they treat patients and work within the interprofessional healthcare team. The literature abounds with strategies on how to implement these EI skills (e.g., ideas to improve empathy see Hinkle, Fettig, Carlos, & Bosslet, 2017).

Supervisors must challenge students, especially those who might be feeling under confident, to confront emotional scenarios in order that they can practise a range of EI skills. Our findings highlighted the importance that students place on feeling that their supervisor trusts them, especially to work independently with patients in emotional distress. We recommend that early in the placement when the supervisor feels the student is ready, they allow the student to work independently with people in pain and distress, as well as those patients who are emotionally labile.

Our findings indicate that it is imperative for supervisors to allocate time to give the student feedback on their EI skills. Feedback on EI skills should be given at the same time as feedback on other skills such as clinical reasoning, communication, assessment and treatment skills, and documentation. When giving feedback on EI skills, supervisors should offer specific EI strategies, skills, or phrases the students could trial.

Our above recommendations are unique as they identify a range of strategies that may positively affect the students' EI skills and have been extracted directly from our interviews with therapy students.

During the interviews, many students described how a negative supervisory environment ultimately hindered the development, and in some cases, crushed the students' EI skills. Our findings that supervisors can have a detrimental impact on EI skills align with Kanno and Koeske (2010) who identified that social work students who received inadequate supervision were vulnerable to emotional exhaustion, burnout and felt less empowered, which ultimately diminished their confidence. Our findings suggest that if the student-supervisor relationship is poor, a student may experience an emotional shutdown, reduce their self-expression, and decrease their confidence in expressing their clinical reasoning to their supervisor.

Based on our interviews, our recommendations to supervisors are to avoid the following behaviours as these were reported to hinder EI skills. Supervisors should not use negative verbal or non-verbal language towards the student while they are actually in the process of completing an assessment or treatment session with a patient. Constructive feedback should be provided after the session. Of course, if the student is being unsafe then the session should be halted by the supervisor. Students often reported feeling devastated when a supervisor took over a student's assessment or treatment session especially if the student had made only a minor error or small omissions. Supervisors must not create an environment where the student feels fear. For example, do not foster an obvious power hierarchy between the student and clinical supervisor. Supervisors should never belittle students. Supervisors should not expect students to be perfect and make no errors as they remain in the early stages of their career. When giving feedback to students, supervisors must not solely provide negative feedback. Similarly, supervisors should avoid non-specific or generic feedback with no suggestions of strategies, skills, or phrases the students could implement to improve their performance.

The foundations of our above recommendations on how supervisors can foster EI growth are supported by Pront, Gillham, and Schuwirth's (2016) study which reported that the key roles of quality clinical placements occurred when the supervisor was able to 'partner', 'nurture', 'enable' and 'facilitate meaning' with the student.

The authors describe the 'partner' role as going beyond the establishment of a relationship. In order for the students' learning to flourish, the student and supervisor need to be clear about the purpose of the supervision, establish mutual trust and respect, and be open to learning; qualities that our study found tend to assist a student's EI to flourish. "A mutually respectful learning partnership that is collaborative, collegial and 'realistic in expectations' promotes students' ability to feel comfortable within this new environment and to approach their supervisor to explore experiences....." (Pront et al., 2016, p.488).

The 'nurture' role requires the supervisor to be welcoming, assist the student to become professionally socialised into the new learning environment, and minimise anxiety. "Supervisors who present as friendly, welcoming and warm, with a personal approach, affirm to the student their willingness to be an agent in this process... 'to nurture' does not include the connotation of 'warm and fuzzy'" (Pront et al., 2016, p.489). Supervisors should challenge students but also ensure they are supported and can voice their concerns and anxieties. Interviewees in our study reported their EI skills improved when the supervisor challenged the student to learn in a supportive way.

The 'enable' role requires the supervisor to offer opportunities to the student that takes the student's current abilities and learning needs into account. Pront and colleagues state that students view supervisors who invest time in setting up learning opportunities that match their needs as being engaged and enthusiastic about their development. The 'enable' role also discusses how supervisors need to determine the appropriate time when students are ready to work with patients unsupervised. As Pront et al. (2016, p. 490) state "...supervisors abreast of student learning expectations (personal and professional) are ideally positioned to 'push' or extend student learning". Our interviews demonstrated that students want to be trusted by their supervisors to work with patients in emotional distress or vulnerability because they know these type of experiences offer a fertile ground for developing confidence in EI skills.

Pront and colleagues final role of the supervisor is to 'facilitate meaning' which requires the supervisor to assist the student to think deeply about the link between their university coursework with the realities of practise. Through mentoring and with the student becoming the problem-solver, the student's learning reaches a more in-depth level of understanding which allows the learning to be transferred to other settings. Similar to our study, Pront and colleagues stress the importance of encouraging students to reflect as critical to learning.

Another study that supports the foundations of our recommendations is Black and colleagues' (2010) study which followed physiotherapists during their first year of practise as new graduates. Their analysis of interviews, reflective journals, and clinical

education records posited the following themes that increased graduates professional identity and confidence: 'interactions with patients/caregivers', 'interactions with co-workers/mentors' and 'reflection, informal and formal continuing education'. Once again, this study supports the importance that students are given opportunities to interact with emotionally charged scenarios, learn from the role modelling provided by healthcare professionals and to reflect on their developing skillsets. Our study is unique as neither the Pront et al. (2016) or Black et al. (2010) studies explored the impact of clinical and supervisory environment on EI skills during placements.

During the interviews, the students described clinical placements as having a definitive influence on their confidence about their EI skillset. As such, Bandura's (1994) description of how people develop self-efficacy provide further insight into how these strategies can be implemented. Bandura defines self-efficacy as "...people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave" (1994, p.71). Bandura's (1994) sources of self-efficacy development are *vicarious experience*, *social persuasion*, *emotional arousal*, and, importantly, *mastery experience*.

Vicarious experiences require the student to observe others in action. Observing other people succeed in performing a skill increases a student's belief in their capacity to succeed in the same skill (Bandura, 1994). Supervisors are encouraged to role model how EI skills are used with patients and within the healthcare team. Supervisors could also identify other team members who demonstrate advanced EI skills and have the student spend time observing and learning from these experts.

Social persuasion requires supervisors to instil a belief in the student that they can succeed (Bandura, 1994). Bandura warns that the expected performance level should be realistic and that instilling unrealistic expectations can undermine the students' self-belief. Social persuasion manifests as direct encouragement from another person (Bandura, 1994). Students in our study talked highly of supervisors who trusted them to perform, no matter the situation. Students frequently talked about high quality supervisors who were able to challenge them to step up their performance but at the

same time were emotionally present to support them when needed. Another facet of Bandura's *social persuasion* is the use of reflection whereby the supervisor and student reflect on the emotional milieu, their feelings, and the EI skill development of the student. Students craved transparent and honest feedback about their clinical performance and EI skills that also included an array of strategies on how they could improve their EI skills – tempered with the supervisor explicitly stating they believed the student could succeed. Bandura's social persuasion highlights the importance of the words and phrases that a supervisor chooses, and the resultant positive and negative impact these can have on a student's confidence.

Another source of self-efficacy is *emotional arousal*. Bandura (1994) purports that different people react differently to a similar emotional state. For example, one person can feel anxious before a public speech that results in diminished performance, while another person uses this anxiety as a source of self-belief and performs well. Thus, the ways a supervisor approaches and engages with a student who is emotionally aroused (positively or negatively) can influence the confidence that the student has in using their EI skills. The supervisor should aim to be as emotionally in-tune with the student as possible. For example, a supervisor needs to be genuinely engaged with the student when asking, and importantly listening to the response to, these type of questions; "How are you today?" or "How do you feel that session went?" or "You are looking stressed? Tell me how you are feeling?" or "How can I assist?"

Bandura considers *mastery experience* to be the most influential source of self-efficacy. As Bandura (1994, p.3) states "...successes build a robust belief in one's personal efficacy". Students in our study confirmed this by highlighting the importance of using EI skills and experiencing success when dealing with patients in emotionally vulnerable situations. As a result, supervisors should challenge students, as early as possible in the placement, to confront emotional scenarios and to practise a range of EI skills. *Mastery experience*, in combination with *vicarious experience*, are dependent on the creation of an optimal learning environment that takes into account the students' developmental level with Bandura (1994, p.6) recommending the supervisor "...create an environment so that (even) incapacitated phobics can perform successfully despite themselves". As such, we recommend that the supervisor should

commence by talking about the various EI skills with the student. Then, when the opportunity arises, the supervisor should role model the EI skills to the student. Again when realistic, the supervisor should then observe the student practising the EI skill, before allowing the student to complete the skill independently.

The findings of our study indicate that EI can be developed during clinical placements if the student is immersed in an optimal learning environment. This finding is corroborated by Clarke (2006), whose work was a stimulus for this study, who first reported that EI could be developed during workplace learning placements. As such, students should be encouraged to discuss their EI strengths and weaknesses with clinical supervisors. For example, a student might know that they have EI weaknesses in *assertiveness, independence, emotional expression, or stress management*. If the clinical supervisor is aware of this, they could give ongoing feedback on these EI skills during the placement.

6.3.2 Recommendations for university educators

This section will discuss the implications of our findings to university educators of therapy students including those who design curriculum and the staff who oversee the clinical placements. This section will provide suggestions on how EI can be embedded into therapy curriculum, working with students before and after placements, and when training clinical supervisors to host students on placements.

6.3.2.1 Emotional intelligence modules embedded through university therapy programs

University educators are encouraged to foster the development of EI skills of therapy students by embedding EI modules throughout all years of the therapy programs. This recommendation is driven by our finding that many students have lower than expected EI skills before commencing full-time extended placements. Perhaps of most concern is the low EI scores at T1 in *independence* and *problem-solving* where 41% or more of therapy student recorded scores below normal. At the same time, some students reported that some EI skills are in the 'markedly low' range. From our interviews, students indicated they are entering full-time extended placements with some EI skills being under-developed to work effectively and make clinical decisions in complex emotional situations. Some students report that they lack a toolkit of strategies and skills to deal and succeed with patients or families who are expressing distress, feeling vulnerable, or feeling grief and loss. Another imperative indicating that EI should be scaffolded through the therapy curricula is that students with lower EI skills can be burdensome on supervisors and the healthcare team. Previous studies have shown that EI in university students can be improved by participating in workshops focused on the array of EI skills and that enhanced EI skills are maintained for an extended period of time (Boyatzis & Saaticioglu, 2008; Boyatzis & Akrivou, 2006; Fletcher, Leadbetter, Curran, & O'Sullivan, 2009). Evidence shows that all subscale EI skills can be improved through training courses, mentoring, reflection, journaling, and coaching (Stein & Book, 2011).

The recommendation to embed more EI theory and practise into the university therapy programs is supported by recommendations from previous research (Kruml & Yockey, 2010; Stoller, Taylor, & Farver, 2013; Verma et al., 2006). 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...”. Nelson et al. (2015) have developed guidelines on how EI can be built into pharmacy curricula, with the suggested process potentially applicable to therapy curricula. Roth et al. (2018) detail twelve tips for how EI can be introduced and taught in medical curricula, however, the tips could be applied to other healthcare programs. Some of these tips include: ‘*start with why*’ to ensure students understand the importance of EI to individuals and teams; use an EI framework such as Goleman’s EI model or Bar-on’s model; incorporate an EI questionnaire so students understand their EI skillset; use multiple teaching formats from observations to role-playing; and use clinical vignettes.

Drawing on these guidelines and tips, occupational therapy, physiotherapy, and speech pathology curriculum could include EI modules where students are educated on definitions and theoretical models, practise an array of EI skills, and then use these EI skills in role-plays or simulations. Ultimately, the full array of EI skills should be included. Our study suggests that modules could start with a focus on *independence*, *problem-solving*, *assertiveness*, and *stress management* – EI skills where students were below population norms before commencing clinical placements. For example, our findings indicate that students feel unable to be as *assertive* as required during placements, especially when communicating with clinical supervisors. Many students’ self-reported assertiveness skills declined once they compared their assertiveness to more experienced healthcare professionals. Thus, learning activities should be included that provide therapy students multiple opportunities to practise being assertive with healthcare professionals as well as patients. Simulations and role-play scenarios could be created for students.

Another recommendation for university educators is to arrange for students to complete EI questionnaires before they commence full-time placements. Completing an EI questionnaire would give students an insight into their EI strengths, and more

importantly, their EI skills that need to improve. Students could consider how their EI limitations might reduce their clinical effectiveness and ability to work in teams during their upcoming placements. However, the two most commonly used EI measurement tools – the EQ-i^{2.0} questionnaire and the Mayer-Salovey-Caruso Emotional Intelligence - Test are both expensive to administer. Each questionnaire costs US\$70.00 per administration (although the cost for research purposes is approximately US\$7.00 per participant). Free EI questionnaires are available, for example, The Wong Law Emotional Intelligence Scale (Law, Wong, & Song, 2004), a self-report tool, which demonstrates credible reliability and validity.

Before clinical placements, university educators frequently organise pre-placement workshops for students. These workshops cover topics such as strategies and professional behaviours that lead to success in placements, building a collaborative partnership with the clinical supervisor, reflective practice, time-management, interprofessional practice, and ideas for students to take care of personal health and well-being during placements (Stagnitti et al., 2010). University educators who coordinate these pre-placement workshops could consider the inclusion of an EI module. This EI module could provide an overview of the importance of EI in healthcare settings, research on the benefits of EI, definitions of EI and the underpinning skills, and activities and ideas on how EI skills can be used with patients and within teams. Given that the interviewees in our study noted the importance of clinicians' role modelling EI skills, a series of short video clips highlighting the application of the EI skills would be valuable in these pre-placement workshops. Given the lack of EI content in healthcare curricula (Kruml & Yockey, 2010; Stoller et al., 2013; Verma et al., 2006), even a short EI module might assist in improving therapy students' understanding of EI as they prepare for their first full-time extended placements.

Another strategy to foster EI skills could be to encourage therapy students to enrol in courses external to the university that focus on developing their EI skills. The Australian Health Practitioner Regulation Agency requires practising therapists in Australia to participate in Continuing Professional Development (CPD) (Australian Health Practitioner Regulation Agency, 2014). Continuing Professional Development

allows therapists to maintain, improve and broaden their knowledge, expertise and competence to ensure the continued provision of safe and effective services. In Australia, occupational therapists are required to complete 30 hours or more of CPD per year. Physiotherapists are required to do 20 hours or more annually (Australian Health Practitioner Regulation Agency, 2014). Speech pathologists are currently not part of the Australian Health Practitioner Regulation Agency. However, Speech Pathology Australia requires speech pathologist to undertake 'lifelong learning' activities each year (Speech Pathology Australia, 2016). As a result of these CPD requirements, some university programs now require therapy students in their final years to do some CPD hours (Murray & Ward, 2017). As such, students needing to do CPD hours could be encouraged to participate in EI courses such as online webinars, online training videos, or face-to-face courses.

After clinical placements, university educators could organise post-placement workshops, often called debriefing sessions, where students reflect on their EI skills, discuss emotion-charged scenarios they had dealt with, and brainstorm strategies they could implement in similar scenarios if they occurred again. Billett, Cain, and Le (2016) reported that students prefer to debrief about placements after they have completed their practicums in sessions guided by an expert in the field. Tan, Ladyshevsky, and Gardner (2010) found that online technologies, explicitly group blogging, was a strategy that built physiotherapy students' clinical reasoning and metacognition during and after placements.

Therapy students often complete assignments that require students to reflect and critique their professional and clinical skills from recent clinical placements. These assignments tend to focus on clinical reasoning and judgements, professional practice, ethical issues, and skills and behaviours that require improvement (Chaffey, de Leeuw, & Finnigan, 2012; Stagnitti et al., 2010). Our findings suggest that university educators should set assignments where students are also required to critique their EI skills. Tan, Ladyshevsky, and Gardner (2010) found that a quarter of the reflective blogs posted by physiotherapy students in a peer coaching community related to questions and challenges about interactive reasoning. Interactive reasoning describes "...face to face interaction between the clinician and the patient that allows rapport to be built such

that clinicians will be able to know them personally, gain insights into their feelings about treatment and understand the contexts in which their problems exist” (Fleming cited in Tan et al., 2010. p.360). Many EI skills, such as *empathy, assertiveness, self-perception, independence, emotional self-awareness, decision-making, reality-testing, and social responsibility* - the EI facets that improved from T1 to T3 - would be utilised during interactive reasoning.

University educators should be interested in the therapy students’ higher scores in *self-actualisation, empathy, and interpersonal relationship* reported in our study. 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 a competent therapist, and perhaps even more critical when working with people in emotional distress (Morehouse, 2007). It may 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 placements. These higher EI skills may also be a result of students’ self-selecting to enrol in a university program that aligns with their values (Nierengarten, 2012; Stagnitti et al., 2010). Supporting this interpretation is the Attraction, Selection, Attrition model which proposes that individuals might be attracted to organisations that align with their personality traits and values (Schneider, 1987). Using the Attraction, Selection, Attrition model, Litten, Roberts, Ladyshevsky, Castell, and Kane (2018) determined that psychology students who possess higher levels of empathy tend to self-select into studying a psychology degree, compared to business students. As a result, university educators should aim to scaffold EI modules through their therapy courses that focus on EI skills that might be under-developed.

6.3.2.2 Training for clinical supervisors

Clinical supervisors often attend clinical supervision workshops organised by university educators who oversee the clinical placement programs. Clinical supervision workshops provide supervisors with guidance on how to prepare for the student

placement, how to structure a placement to maximise learning opportunities for the student, giving effective feedback to students, and how to support under-performing students (Gillieatt et al., 2014). Emotional intelligence could be included as part of these workshops. Supporting this recommendation is a study by Gillieatt et al. (2014) who evaluated a clinical supervision workshop designed for healthcare professionals, including occupational therapy, physiotherapy, and speech pathology practitioners. This workshop drew inspiration from *Proctor's model of clinical supervision* which prescribes that clinical supervision should include three essential functions: normative or administrative, formative or educative, and restorative or supportive functions. The *restorative function* is described as "...discussion to make sense of the emotional content of clinical practice so as to manage work-related stress" (Gillieatt et al., 2014, p.2). The skills required by a clinical supervisor in this restorative function would require an array of EI skills. The Gillieatt et al. (2014) study found that using Proctor's model enhanced supervisors' confidence. As such, during the clinical supervision workshops, university educators should encourage the clinical supervisor to provide feedback to the student on their EI skills, and not just their clinical reasoning and practise skills as students often fail for reasons other than their clinical practise skills.

6.3.3 Recommendations for employers of therapy graduates

This section will primarily reflect on the T3 results, as this is the point at which therapy students had completed all their clinical placements and their university program, and discuss the implications for employers of therapy undergraduates.

The good news for employers is that our cohort of undergraduate therapy students completed their university programs with all their EI skills in the normal range indicating they have a skill set that should allow them to work in an array of emotion-charged scenarios. Some EI skills were significantly higher than the Australian population norms including *self-actualisation*, the *interpersonal composite*, *interpersonal relationships*, *empathy*, and *social responsibility*. At the same time, *impulse control*, while *self-actualisation*, *interpersonal composite*, *interpersonal relationships*, *empathy*, *social responsibility*, and *impulse control* were in the higher range of normal. Graduates with EI skills above the population norms or in the higher ranges of normal have EI skills that are similar or exceed the patients and co-workers they will be working alongside during placements. For employers, this means that these graduates should have the capacity to deal with and make clinical decisions when faced with emotional distress and patient vulnerability, and cope with the pressures within the healthcare team.

Employers should be aware that the therapy undergraduates, at the end of their university program, report that the following EI skills were significantly lower than the Australian population norms, *assertiveness*, *independence*, *problem-solving*, and *stress tolerance*. These same four EI skills were also in the lower range of normal, suggesting that these skills are still maturing which could limit their effectiveness. For example, a new graduate from an undergraduate therapy program with low *assertiveness* and *problem-solving* might be passive in team meetings and lack decisiveness when communicating with patients, especially ones who are experiencing substantial emotional distress. They may be passive during emotional scenarios and turn to their colleagues for strategies to deal with the scenario. With research showing that

healthcare professionals with higher EI scores achieve better patient outcomes, cope better with stressful scenarios, and work well in teams; workshops focussed on upskilling new graduates with lower EI scores should be beneficial (Clarke, 2009).

Our study has identified that the supervisory environment during clinical placements can have a positive or negative impact on students' confidence and self-efficacy in their EI skills. Thus, it could be inferred that the learning environment or the quality of supervision, will have a similar impact on the new graduate therapist, although further research is required to confirm how EI changes in the first years of practise. Thus, employers should encourage recent graduates, particularly those who appear to have lower than expected EI skills to attend EI workshops many of which are available online. Employers can also enable the new graduate to build EI skills through peer coaching. Peer coaching has been shown to support professional development and learning in the allied health professions (Ladyshevsky, 2010). Peer coaching is "...a voluntary and non-evaluative relationship between two practitioners who share similar experience and training and wish to embed knowledge and skill into practice... (peer coaching) is a planned and systematic approach to build competence and practice" (Ladyshevsky, 2010, p. e78). Many healthcare organisations already include EI courses and workshops in their professional development programs. For example, the Center for Professionalism at Baylor College, USA includes EI principles in grand rounds, residents' training programs and workshops, and also within their medical curriculum (Roth et al., 2018). If employers encourage new graduates to attend EI focussed workshops and make coaching and mentoring available when needed, the result could be increased self-confidence and self-efficacy in using EI skills.

The findings of our study have implications for the *employability* of therapy graduates from undergraduate programs. Many universities have embraced employability as an essential learning outcome for all graduates (Hager & Holland, 2006). Dacre Pool and Sewell (2007, p. 280) define employability as "...having a set of skills, knowledge, understanding and personal attributes that make a person more likely to choose and secure occupations in which they can be satisfied and successful". Employability encompasses a myriad of personal attributes such as personality, attitudes, motivation, and vocational ability – with some models of employability including

emotional intelligence (Dacre Pool et al., 2014; Van Der Heijde & Van Der Heijden, 2006). The CareerEDGE Key to Employability Model (Dacre Pool et al., 2014) – reproduced in Figure 6.1 for convenience (but presented earlier in Figure 2.2) describes five components that are critical to a new graduate’s employability: their *university degree*; *generic skills*; *career development learning*; *life and work-related experience*; and of interest to this study, *emotional intelligence*.

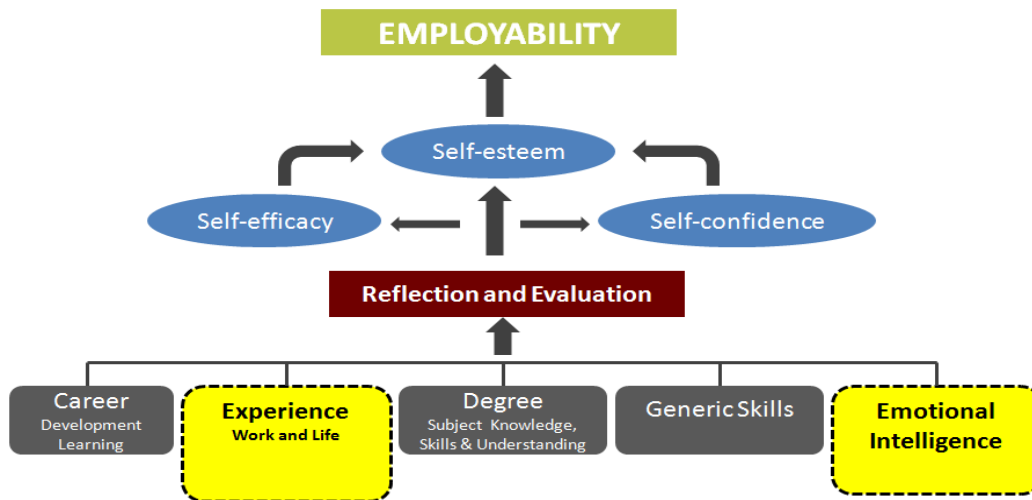


Figure 6.1: The CareerEDGE Key to Employability Model (Sewell & Dacre Pool, 2010, p.90) with emotional intelligence and experience highlighted (in yellow) as these are the key elements being investigated in this study.

The CareerEdge model describes that these five components, through reflection, feedback, and evaluation, can lead to the employee increasing their self-confidence, self-efficacy, and self-esteem which ultimately determine their employability. The CareerEdge model reinforces our finding that if an employee is encouraged to reflect on and is given feedback on their EI, that this could result in increased self-efficacy, and ultimately the new graduate being more employable. Employers of new graduate therapists should support new graduates to develop their EI skills through encouraging reflection and giving direct feedback on specific EI skills, in order to build their capacity to cope with the stressors in the workplace, make decisions under emotional pressure, and become a capable team member.

6.4 Strengths and limitations of the research study

6.4.1 Strengths

A unique element of the study was the sequential explanatory mixed methods design which allowed the qualitative results to assist in validating and explaining the trends identified in the quantitative data. Another distinctive feature of the study was the attempt to compare the therapy students' EI scores to a control group made up of a relatively homogenous group of university students who undertake no clinical placements. Bar-on/Multi-Health System's Model of Emotional Intelligence, which was selected as the conceptual framework, is a well-established framework of emotional intelligence. The Model of Emotional Intelligence's measurement tool, the EQ-i^{2.0} which was used to measure the changes in EI of the participants in our study, has credible validity and reliability. The longitudinal collection of EI scores from the same cohort over a 16-month period allowed insight into the changing of EI scores as therapy students undertook their full-time extended placements.

6.4.2 Limitations

A limitation of the sequential explanatory mixed methods design is the length of time required to collect data and the inherent risk of participants leaving the study (Creswell & Plano Clark, 2011). There was a notable dropout rate between T1 and T3 amongst the therapy students but more so in the business students. The drop-out rate was higher than anticipated primarily because the T3 data was collected after students had completed their university programmes and had disengaged from university email systems. Although the response rate for therapy students was reasonable, the response rate for business students was only 12%. The low response rate could have been because business students did not understand the purpose of the study as the Participant Information Sheet referred to clinical placements which are not a part of their university program. Consequently, the study could be considered underpowered to detect changes in EI scores from T1 to T3, which increases the chance of a Type II error occurring. Missing Values Analysis was not used as the imputations are treated as

actual observations, and this can result in biased parameter estimates and underestimate standard errors (Field, 2009).

Being a prospective cohort study means that a drop-out is inevitable as it is challenging to retain participants over extended periods of time (Creswell & Plano Clark, 2011). As such, it is possible that the T3 participants may be biased towards those who were confident in their EI skills or interested in the EI concept. The use of convenience sampling may also be a limitation with therapy students selected from only four Australian universities and the business students from one university. The convenience sampling may reduce the generalisations that can be inferred from the findings. Speech pathology programs in Australia enrol fewer students than occupational therapy and physiotherapy programs, and thus the speech pathology students are underrepresented relative to the two other therapies. The timing of the T3 questionnaire may have led to the lower than expected T3 response rate, and also impacted the number of participants that met the inclusion criteria for interviews in the qualitative phase. As a result, those students that volunteered to be interviewed may have an element of selection bias. The timing of the T3 questionnaire also delayed the interviews, so that some interviews were completed 16 weeks after the final clinical placement. This delay may have influenced the students' recall of placement experiences.

A control group of students from another therapy or healthcare profession would have been preferred to business students, but given the compulsory requirement of clinical placements in healthcare programmes, a cohort of therapy or healthcare students who do no clinical placements was not able to be identified. As such, a homogenous cohort of business students (i.e., similar age and stage of progression through university as the therapy students) was selected as the control group. Business programs tend to include minimal or no placements in workplace settings as a compulsory component of their programme.

The EQ-i^{2.0} is a self-report tool instrument that measures perceived or self-adjudicated EI skills in participants rather than actual EI ability. The EQ-i^{2.0} requires the respondent to have insight into their EI skills. Self-report tools have numerous reported limitations

including over or under reporting, a tendency for participants to try to provide the optimal answer, and respondents that might be extreme responders who tend to use the highest or lower scales whereas others tend to report scores around the midpoints and rarely use the outermost points (Zeidner et al., 2010). To counter some of the issues with self-report tools the EQ-i^{2.0} calculates an Inconsistency Index (ten pairs of highly rated items to detect whether an individual responds differently to items measuring similar skills), and Positive Impression and Negative Impression parameters (six items detect respondents who may give exaggerated positive or negative impression of themselves). In our study, participants (n=11) who exceed the suggested Inconsistency Index, Positive Impression, or Negative Impression parameters were excluded from the data analysis. Despite the concerns about the EQ-i^{2.0} requiring self-report answers, the tool possesses good reliability and validity. The Internal consistency of the EQ-i^{2.0} is very good as demonstrated by Cronbach's alpha scores of 0.97 for Total EI, 0.88 to 0.93 for the Composite scales, and 0.77 to 0.93 for the 15 Subscales. Test-retest reliability for Total EI was high ($r = 0.92$) for subjects with two to four weeks between tests, and lower ($r = 0.81$) when tested eight weeks apart. To track changes in EI, the EQ-i^{2.0} manual recommends that participants retake the survey at time-points at least 12 weeks apart (Multi-Health Systems, 2011).

As our study only included undergraduate therapy students, the findings apply to new graduates from undergraduate programs and may not apply to graduates from post-graduate entry therapy programs such as Graduate Entry Masters programs that are becoming commonplace across the world.

The quantitative phase of our study had a strong emphasis on EI skills but could have collected data on many other facets such as whether students passed or failed their placements, perceived quality of supervision, or the life experiences that occurred during the 16-month period that may have influenced EI skill maturation.

6.5 Further research

Future research could use a similar, longitudinal, explanatory sequential mixed methods design to track changes in EI over the full four years of the undergraduate program. Future longitudinal research could then follow graduate therapists in their first few years after they enter the workforce to identify if, when, and why the EI skills in the lower ranges change. Interviews could be undertaken with the new graduates as well as co-workers and managers to describe the critical influences on the maturing EI skills in the first few years of practise. Other health professions, such as nursing, social work, and medicine could be included. With the rise in graduate entry programs in occupational therapy, speech pathology, and physiotherapy, postgraduate students could be included. Although difficult to locate, a homogenous group of students within the health professions who do no clinical placements could be included as the control group. The study could be replicated with therapy programs in international locations to see if similar aspects of placements influence the changes in EI skills.

In order to overcome the time lag between completing clinical placements and the interviews, future research could ask students to use written or video journaling before, during, and after placements to describe and reflect on aspects of placements that influence EI skills.

Future studies could include whether each student passed or failed their placements, the perceived quality of placement supervision, the students' living arrangements, previous life experiences, or the life experiences that occurred during the 16-month period that may have influenced EI skill maturation. Research could focus on students who fail placements and analyse their EI scores and their perceptions of how their EI skills developed (or declined) during placements and perhaps the role of the clinical supervisor during this time.

Future studies could use the EQi-360, a tool similar to the EQ-i^{2.0} that matches EI scores from the respondent with scores from selected peers or managers EI scores of the selected student. For example, a student's clinical supervisor/s and peers could

complete the EI tool. Although, this type of study may be better suited to a new graduate cohort as there would be more people who could complete the tool. A similar design to the present study could be used with EI measured using one of the ability based measurement tools, such as the Mayer-Salovey-Caruso Emotional Intelligence Test, rather than the EQ-i^{2.0} which has limitations because it is a self-report tool.

Future research could design and integrate a series of EI modules through the formative years of therapy programs. Given that students highlighted the importance of EI skills being role modelled, a series of short video clips that demonstrate the application of EI skills would be valuable. These videos could then be used during workshops and in remedial work with students who are struggling during placements. As suggested by Nelson et al. (2015) research is needed on how best to embed EI throughout healthcare curricula. Such a study could use a therapy program with no EI content as the control group to determine the effectiveness of EI training embedded in therapy curricula. Design of the EI modules could commence with EI testing of the student cohort and target modules at those areas where the cohort scores the lowest.

Emotional intelligence is a core component in the CareerEdge Key to Employability Model – a theoretical model of the factors that influence employability (Sewell & Dacre Pool, 2010). Future research could measure EI - as well as the other components of the CareerEdge Model such as self-esteem, self-efficacy, and self-confidence, to determine the extent that EI is a determinant of employability.

6.6 Concluding statement

Our study has shown that clinical placements are a fertile ground where therapy students can practise, be given feedback, and improve their emotional intelligence skills; skills that have been shown in previous studies as being critical in becoming a competent practitioner and being able to work successfully in the healthcare teams. University educators and clinical supervisors can be reassured that the majority of undergraduate therapy students commence their first full-time placements with many EI skills well developed. Although some students commence extended, full-time placements in their third year with some EI skills lower than population norms, at the completion of the university programme the majority of EI skills are well and truly matured. Our study has found that Total EI, as well as some other EI skills, will flourish over the final 16-months of their university program. However, even at the end of the therapy program, *assertiveness*, *independence*, *problem-solving*, and *stress tolerance* remain relatively low. A noteworthy finding of our study is that when students are exposed to poor quality supervisory environments, confidence in using their EI skills can diminish.

University educators are recommended to embed EI modules in therapy curricula, preferably integrated iteratively through all years of the program. Occupational therapy, physiotherapy, and speech pathology curricula could include modules where students are educated on EI definitions and theoretical models, practise an array of EI skills, and then use these EI skills in role-plays or simulations. Our study suggests that modules could focus on *independence*, *problem-solving*, *assertiveness*, and *stress management* – EI Composite or Subscales where students were below population norms before commencing clinical placements; although individual students will have differing EI learning needs.

Employers of new graduates are encouraged to provide programs that continue to assist in developing EI skills which could lead to enhanced self-confidence and self-efficacy, and possibly to improved employability.

Our study shows that EI skills are malleable and most students will improve many of their EI skills during clinical placements, especially if the student is immersed in a positive supervisory environment. During these pivotal clinical placements in the final phase of the university program and during the initial phase as a new employee, students and new graduates need to continuously practise their EI skills under supervision, be given feedback and time to reflect so that they can refine and improve their EI skills. The result will be better prepared graduates who have the capacity to manage the emotional demands that are a daily part of every facet of clinical practise.

In the words of one of our interviewees:

“My supervisors were fantastic. They’d say ‘It’s okay, take a minute’ when I needed it. Just having that kind of reassurance to be allowed to...just calm myself down. It was nice to be ‘heard’. The good supervisors understand you and they let you grow.” (23-F-PT)

REFERENCES and BIBLIOGRAPHY

The References section includes all the references from Chapter 1, 2, 3, 5, and 6 of this thesis.

The Bibliography includes all the references from the published journal articles.

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Every reasonable effort has been made to acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

APPENDICES

Appendix A Ethics Approval Letter



Memorandum

To	Professor Rick Ladyshevsky, Graduate School of Business
From	Professor Stephan Millett, Chair, Human Research Ethics Committee
Subject	Protocol Approval HR 68/2012
Date	17 July 2012
Copy	Mr Nigel Gribble, School of Occupational Therapy and Social Work Associate Professor Brenda Scott-Ladd, School of Management Graduate Studies Officer, Faculty of Health Sciences

Office of Research and Development
Human Research Ethics Committee

TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

Thank you for providing the additional information for the project titled "*The influence of work integrated learning placements on the emotional intelligence of therapy students*". The information you have provided has satisfactorily addressed the queries raised by the Committee. Your application is now **approved**.

- You have ethics clearance to undertake the research as stated in your proposal.
- The approval number for your project is **HR 68/2012**. Please quote this number in any future correspondence.
- Approval of this project is for a period of twelve months **17-07-2012** to **17-07-2013**. To renew this approval a completed Form B (attached) must be submitted before the expiry date **17-07-2013**.
- Your project has the following special conditions: NIL

Applicants should note the following:

It is the policy of the HREC to conduct random audits on a percentage of approved projects. These audits may be conducted at any time after the project starts. In cases where the HREC considers that there may be a risk of adverse events, or where participants may be especially vulnerable, the HREC may request the chief investigator to provide an outcomes report, including information on follow-up of participants.

The attached **FORM B** should be completed and returned to the Secretary, HREC, C/- Office of Research & Development:

When the project has finished, or

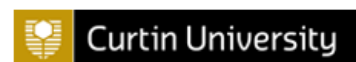
- If at any time during the twelve months changes/amendments occur, or
- If a serious or unexpected adverse event occurs, or
- 14 days prior to the expiry date if renewal is required.
- An application for renewal may be made with a Form B three years running, after which a new application form (Form A), providing comprehensive details, must be submitted.

Yours sincerely,

PP Professor Stephan Millett
Chair Human Research Ethics Committee

Appendix B Participant Information Sheets

B.1 For T1 data collection



PARTICIPANT INFORMATION SHEET

Data Collection #1

Project Title: The Influence of Work Integrated Learning Placements on the Emotional Intelligence of Therapy Students

Supervisors: Professor Rick Ladyshevsky and Associate Professor Brenda Scott-Ladd

A PhD candidate from Curtin University is investigating whether fieldwork placements have an impact on the emotional intelligence of students. The study aims to assist university staff plan and implement fieldwork placements.

You have been invited to participate as you are enrolled in a therapy-based program or business program.

If you consent to participate, you will be asked to complete a questionnaire today. This will take about 10 to 20 minutes to finish. Early in 2014 and again in November or December in 2014, you will be asked to complete a similar survey. Some participants will be requested to participate in a 30-minute interview in 2015.

Today you will provide your university student identification number that will act as a way for the researchers to match your responses gathered today with your responses in future surveys.

The scores for your emotional intelligence questionnaire will not be released to you. You will not be able to receive any feedback on your emotional intelligence scores.

There are minimal risks related to taking part in this study. Your participation in this study is **entirely voluntary**. **Your responses are completely confidential**. Your decision to participate or not in this study has no influence on your university studies. No personal information related to your responses will be released to anyone. All data gathered from this study will be analysed as a group of participants. No information that could identify you will be reported in any publication of the study's results.

You have the right to withdraw from the study at any time. You have the right to refuse to answer any particular questions. There will be no negative consequences if you decide not to complete the questionnaire.

If you have any questions please ask the research assistant.

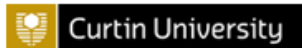
If you have any questions or concerns about this research project, you should contact the Principal Investigator, Professor Rick Ladyshevsky by email: r.ladyshevsky@curtin.edu.au.

"This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR68/2012). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au."

We appreciate your support in completing this survey.

Yours sincerely,

Professor Rick Ladyshevsky
Graduate School of Business
Curtin University
GPO Box U1987 | Perth | Western Australia | 6845
Tel | +61 8 9266 9266
Email | Rick.Ladyshevsky@gsb.curtin.edu.au
Web | <http://curtin.edu.au>




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CRICOS Provider Code 00301J (WA), 02637B (NSW)

B.2 For T2 data collection

Students who participated at T1 were emailed a website link to the T2 online questionnaires.

▼ Default Question Block Block Options ▼

Q3  **Thank you for participating in this study.** This is the second set of data collection for this PhD study that is investigating whether fieldwork placements have an impact on the emotional intelligence of students. The study aims to assist university staff plan and implement fieldwork placements. We require students enrolled in occupational therapy, physiotherapy, speech pathology and business courses to participate.

You have been invited to participate because you completed Part 1 of this survey in 2013.

If you complete BOTH parts of the survey, you could win a [\\$500 Visa Gift Card.](#)

Condition for entering the gift card draw: [Rules re raffle draw](#) . I have read the competition Terms and Conditions (i.e. 'Rule re: Raffle Draw') and provide my consent to be bound by them.

You will complete this survey in TWO PARTS:

Part A: on this website: 5 minutes
Part B: on the MHS website: 12-15 minutes.

Please complete the survey by **26 June 2014.**

Your continued participation is MOST APPRECIATED.

Thank you.

□ Q2



Participant Information

If you consent to participate, you will complete a questionnaire. This will take about 10 to 20 minutes to finish.

There are minimal risks related to taking part in this study. Your participation in this study is **entirely voluntary. Your responses are completely confidential.** Your decision to participate or not in this study has no influence on your university studies. No personal information related to your responses will be released to anyone. All data gathered from this study will be analysed as a group of participants. No information that could identify you will be reported in any publication of the study's results.

You have the right to withdraw from the study at any time. You have the right to refuse to answer any particular questions.

The scores for your emotional intelligence questionnaire will not be released. You will not receive any feedback on your emotional intelligence scores.

If you have any questions or concerns about this research project, you should contact the Principal Investigator, Professor Rick Ladyshevsky.

"This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR68/2012). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au."

We appreciate your support in your ongoing participation in this survey.

Yours sincerely,

Richard (Rick) Ladyshevsky

Ph.D (Education), M.H.Sc.(Health Administration), Bach. Med. Rehab. (Physical Therapy),
Foundation Fellow, Higher Education Research and Development Society of Australasia
Associate Fellow, Australian Institute of Management.
Professor, Managerial Effectiveness | Curtin Business School, Curtin Graduate School of Business

Profile: http://business.curtin.edu.au/courses/cgsb/staff_profiles.cfm/Rick.Ladyshevsky

Curtin University

Tel | +61 8 9266 9266

Fax | +61 8 9266 3368

Email | rick.ladyshevsky@gsb.curtin.edu.au

Web | <http://curtin.edu.au>



Curtin University

B.3 For T3 data collection

Students who participated at T2 were emailed a website link to the T3 online questionnaires.

Q3



This is the FINAL survey for this PhD study that is investigating whether fieldwork placements have an impact on the emotional intelligence of students. The study aims to assist university staff plan and implement fieldwork placements.

If you complete the survey, you could win a [\\$500 Visa Gift Card](#).

Conditions for entering the gift card draw: Rules re raffle draw .

You will complete this survey in TWO PARTS:

Part A: on this website: 5 minutes

Part B: on the MHS website: 12-15 minutes.

Please complete the survey by **19 December 2014**.

Your participation in the THREE phases of this study is MOST APPRECIATED.

Thank you for participating in this study.

□ Q2

Participant Information



This survey will take about 10 to 20 minutes to finish.

There are minimal risks related to taking part in this study. Your participation in this study is **entirely voluntary**.

Your responses are completely confidential. Your decision to participate or not in this study has no influence on your university studies. No personal information related to your responses will be released to anyone. All data gathered from this study will be analysed as a group of participants. No information that could identify you will be reported in any publication of the study's results.

You have the right to withdraw from the study at any time. You have the right to refuse to answer any particular questions.

The scores for your emotional intelligence questionnaire will not be released. You will not receive any feedback on your emotional intelligence scores.

If you have any questions or concerns about this research project, you should contact the Principal Investigator, Professor Rick Ladyshevsky.

"This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR68/2012). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au."

We appreciate your support in your ongoing participation in this survey.

Yours sincerely,

Richard (Rick) Ladyshevsky

Ph.D (Education), M.H.Sc.(Health Administration), Bach. Med. Rehab. (Physical Therapy),
Foundation Fellow, Higher Education Research and Development Society of Australasia
Associate Fellow, Australian Institute of Management.
Professor, Managerial Effectiveness | Curtin Business School, Curtin Graduate School of Business

Profile: http://business.curtin.edu.au/courses/cgsb/staff_profiles.cfm/Rick.Ladyshevsky

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Email | rick.ladyshevsky@gsb.curtin.edu.au

Web | <http://curtin.edu.au>



Curtin University

B.4 For interview

PARTICIPANT INFORMATION SHEET

Interview

Project Title: The Influence of Work Integrated Learning Placements on the Emotional Intelligence of Therapy Students

Supervisors: Professor Rick Ladyshefsky and Dr Richard Parsons

Nigel Gribble, a PhD student at Curtin University, is investigating the influence fieldwork placements have on the emotional intelligence of students.

The purpose of the study is to understand the experiences that occur during fieldwork placements that are perceived to influence any changes in a student's emotional intelligence. The anticipated outcomes of the study will assist university staff in their planning and implementation of fieldwork placements. You have been invited to participate as you have completed your occupational therapy, physiotherapy or speech therapy course. You also completed the questionnaires during Phase 1.

The interview is the final phase of the study.

To thank you for participating, you will be paid \$30.

If you agree to participate you will be invited to attend an interview at a place and a time convenient to you. The interview will be approximately 30 minutes in length. Nigel Gribble will conduct the interview. During the interview you will be asked questions related to your 2014 fieldwork experiences. The interview will be recorded using two digital recorders (in case one fails). The interview will be transcribed by a professional transcription company. Your personal details will not be included in the transcription document - only a Subject ID number. Any names of fieldwork sites, staff or patients related to the fieldwork site or any other potentially identifying information will not be included in the transcription.

The risks associated with this study are minimal. Your participation in this study is **entirely voluntary and your responses are completely confidential**. You have the right to withdraw or discontinue participation at any time, and have the right to refuse to answer particular questions. There will be no negative consequences if you decide not to complete the interview or answer any questions.

The interview tapes and transcriptions will be kept and accessed by the researcher who will not release your personal information and interview responses to anyone. All information you provide will be kept **strictly confidential**. All data gathered from this study will be analysed as a group of participants. Your individual privacy will be absolutely maintained in all published materials resulting from this study.

If you have any questions or concerns about this research project, you should contact the Principal Investigator, Professor Rick Ladyshefsky by email: r.ladyshefsky@curtin.edu.au.

"This study has been approved by the Curtin University Human Research Ethics Committee (Approval Number HR 68/2012). The Committee is comprised of members of the public, academics, lawyers, doctors and pastoral carers. Its main role is to protect participants. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University of Technology, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784 or by emailing hrec@curtin.edu.au."

We appreciate your support for this study.


Yours sincerely,


Nigel Gribble
Ph.D Candidate
Curtin University

Appendix C Consent Forms

C.1 For T1, T2, and T3 online data collection

Q5 **CONSENT FORM**



 I have read the Participant Information (on the previous page) related to this research study.

I know I can change my mind and stop at any time. I understand that I can withdraw my consent at any time during or after responding to the questionnaire. I understand that all information I provide will be treated as confidential and my privacy will be maintained. I understand that data gathered for this study may be published as long as my name, or any other information which might identify me, is not used.

I CONSENT to PARTICIPATE IN THIS RESEARCH STUDY

I DO NOT CONSENT to PARTICIPATE IN THIS RESEARCH STUDY

C.2 For interviews

CONSENT FORM

Interview

I (the participant) have read the Participant Information Sheet related to the research study titled "The Influence of Work Integrated Learning Placements on the Emotional Intelligence of Therapy Students".

Any questions I have asked have been answered to my satisfaction. I agree to take part in this interview, however, I know that I may change my mind and stop at any time. I understand that all information I provide is treated as confidential and will not be released by the investigator unless required to do so by law. I agree that research data gathered for this study may be published provided my name or other information which might identify me is not used. I understand that I can withdraw my consent at any time during or after responding to the interview.

Participant Name: _____

Signature: _____

Date: _____

I, _____ (name) received \$30 cash for participation in this interview.

Signature: _____

Date: _____

Appendix D Demographic questionnaires

D.1 For T1

Q27 Which university are you studying at?

Curtin University

Notre Dame University

University of Queensland

University of South Australia

Other - which university?

Q42 What is your university Student Identification (ID) Number?

This is required to link your responses in this survey to your responses in the two surveys in 2014. The ID number will never be used to identify any identifying information about you.

Q27 Re-enter your Student Identification (ID) Number

Q43 What is your university email address?

This is requested so the research team can contact you to request you participate in brief interviews in early 2015 (payments will be made for all interviewees).

Q41 Gender

Male

Female

Q41 What is your age (in years)?



Q38

What course are you studying at university? Tick one only

- Occupational therapy
- Physiotherapy
- Speech pathology
- Business - which course?
- Other - which?



Q12

Type of study? Tick one only

- Undergraduate
- Postgraduate or Graduate Entry Master or PhD



Q13

Year of study in your current course? Tick one only

- 1st year
- 2nd year
- 3rd year
- 4th year
- Other year - which year?



Q17

Since 2008, have you undertaken any specific courses related to emotional intelligence?

i.e. specific training associated with developing emotional intelligence skills.



Emotional intelligence 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".

- Yes
- No

Q18

What type of emotional intelligence courses have you done - since 2008? Tick all that apply



- Short lecture/s or seminars on the topic of emotional intelligence e.g. at university
- Extended emotional intelligence course/workshop e.g. 4 hours of more
- Extended emotional intelligence course/workshop PLUS an emotional intelligence test
- Extended emotional intelligence course PLUS an emotional intelligence test PLUS individual feedback about your emotional intelligence test

Q19

When was your most recent emotional intelligence course? Tick one only



- in the last 2 months
- 2 – 6 months ago
- 7 – 12 months ago
- more than 12 months ago

Q20

What was the length of the most recent emotional intelligence course? Tick one only



- less than 4 hours
- 4 – 7 hours
- 1 – 2 days
- More than 2 days

Q21

Have you completed fieldwork or clinical placements in your current course?

Fieldwork placements are defined as experiences where you are immersed in authentic environments (e.g. hospital, private practice, community organisation) as part of your current course.



- Yes
- No

Q22

Types of fieldwork or clinical placements experiences completed up until today? Tick all that apply



- Supervised full-time placement: 3 - 5 days per week. Supervised by a therapist in a hospital, private practice etc.
- Observation only placement: 1/2 day - a few days. Observing a therapist
- Agency visit or workplace visit i.e. visits for a few hours or a few visits for the purpose of completing an assignment
- Self-directed fieldwork project
- Interprofessional placement (IPE) i.e. a specific IPE fieldwork placement working with multiple other therapy or health disciplines
- Rural placement e.g. in rural Western Australia
- International placement: which country?
- Other type of fieldwork placement - describe briefly:

Q23


Total length of fieldwork or clinical placements completed in your course up until today? Tick one only



Add up all your placements in days or weeks.

- Nil
- 1 - 5 days
- 6 - 10 days
- 2 - 4 weeks
- 5 - 8 weeks
- 8 or more weeks

Q40

Click '**NEXT PAGE**' and you will be re-directed to a new webpage - the Multi Health Systems website with this symbol on it:  EQ-i^{2.0}




IMPORTANT: when asked for your ***ID number***, please insert your ***Curtin University Student ID number*** - so we can link your above responses to the emotional intelligence responses.


If you complete the 133 questions in the next part of the survey, you will go into the running to win a \$300 iTunes or \$300 Coles/Myer gift voucher.

D.2 For T2 and T3

Q27 Which university are you studying at?

 Curtin University

Notre Dame University


 University of Queensland


University of South Australia

Other - which university?


Q42 What is your university Student Identification (ID) Number?


This is required to link your responses in this survey to your responses in the two surveys in 2014. The ID number will never be used to identify any identifying information about you.






Q27 Re-enter your Student Identification (ID) Number






Q43 What is your university email address?

This is requested so the research team can contact you to request you participate in brief interviews in early 2015 (payments will be made for all interviewees).








Q41 Gender


Male

Female

Q41 What is your age (in years)?





Q38 What course are you studying at university? Tick one only

Q38



- Occupational therapy
- Physiotherapy
- Speech pathology
- Business - which course?
- Other - which?

Q12 Type of study? Tick one only

Q12



- Undergraduate
- Postgraduate or Graduate Entry Master or PhD

Q13 Year of study in your current course? Tick one only

Q13



- 1st year
- 2nd year
- 3rd year
- 4th year
- Other year - which year?

Q17 Since 2008, have you undertaken any specific courses related to emotional intelligence?

Q17



i.e. specific training associated with developing emotional intelligence skills.

Emotional intelligence 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".

- Yes
- No

Q18

What type of emotional intelligence courses have you done - since 2008? Tick all that apply



- Short lecture/s or seminars on the topic of emotional intelligence e.g. at university
 - Extended emotional intelligence course/workshop e.g. 4 hours of more
 - Extended emotional intelligence course/workshop PLUS an emotional intelligence test
 - Extended emotional intelligence course PLUS an emotional intelligence test PLUS individual feedback about your emotional intelligence test
-

Q19

When was your most recent emotional intelligence course? Tick one only



- in the last 2 months
 - 2 – 6 months ago
 - 7 – 12 months ago
 - more than 12 months ago
-

Q20

What was the length of the most recent emotional intelligence course? Tick one only



- less than 4 hours
 - 4 – 7 hours
 - 1 – 2 days
 - More than 2 days
-

Q21

Have you completed fieldwork or clinical placements in your current course?

Fieldwork placements are defined as experiences where you are immersed in authentic environments (e.g. hospital, private practice, community organisation) as part of your current course.



- Yes
- No

Q28

How MANY fieldwork or clinical placements have you completed since **1 October 2013**?



Nil
 1
 2
 3
 4
 5
 6
 7
 8 or more

Q32

For each fieldwork or clinical placement completed since **1 October 2013**, please answer the following questions.



	LENGTH How many total DAYS was this placement?	FULL or PART TIME			SITE TYPE (select all that apply)								INTERNATIONAL		
		5 days/ week	3 - 4 days/ week	1 - 2 days/ week	Hospital	School	Private practice	Community organisation	Inter-professional	Self directed project	Rural	International	Other	If international - which country?	
Placement #1	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #2	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #3	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #4	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #5	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #6	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #7	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
Placement #8	<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Q40



Click 'NEXT PAGE' and you will be re-directed to a new webpage - the Multi Health Systems website with this symbol on it:



IMPORTANT: when asked for your ID number, please insert your University Student ID number - so we can link your above responses to the emotional intelligence responses.

If you complete the 133 questions in the next part of the survey, you will go into the running to win a \$500 Visa Gift Card.

Appendix E Sample EQ-i^{2.0} questions

NB: the full set of EQ-i^{2.0} questions cannot be reproduced due to copyright restrictions from the publisher.



Please answer the following questions.

Answer openly and honestly by indicating how you actually are and not how you would like to be or how you would like to be seen.

The EQ-i 2.0 provides you with an opportunity to describe yourself by indicating the frequency with which you feel, think, or act in the way described by each statement.

There are five response options for each statement ranging from *Never/Rarely* to *Always/Almost Always*.

Read each statement and decide which ONE of the five response options best describes the frequency of your thoughts, feelings, or actions. Indicate your response choice by selecting the appropriate response. If a statement does not apply to you, respond in such a way that will give the best indication of how you would possibly feel, think, or act.

Although some of these statements may seem unclear or vague to you, choose the response option that seems to describe you best. There are no "right" or "wrong" answers and no "good" or "bad" choices.

Although there is no time limit, work at a steady pace and make sure that you consider and try to respond to each statement.

	Never/ Rarely	Occasionally	Sometimes	Often	Always/ Almost Always
1. I keep calm in difficult situations.	1	2	3	4	5
2. I make rash decisions when I'm emotional.	1	2	3	4	5
3. I back down even when I know I am right.	1	2	3	4	5
4. It's hard for me to make decisions on my own.	1	2	3	4	5
5. I interrupt when others are speaking.	1	2	3	4	5
6. It's difficult for me to change my opinion.	1	2	3	4	5
7. I say "no" when I need to.	1	2	3	4	5
8. I accomplish my goals.	1	2	3	4	5
9. It's easy for me to make friends.	1	2	3	4	5
10. Looking at both my good and bad points, I feel good about myself.	1	2	3	4	5
11. I act in an environmentally friendly way.	1	2	3	4	5
12. It's hard for me to enjoy life.	1	2	3	4	5
13. I'm aware of how others feel.	1	2	3	4	5
14. I see situations as they really are.	1	2	3	4	5

Continued on the next page...

Appendix F EQ-i^{2.0}: summary of internal consistencies

	Total number of test items used	Cronbach's alpha from total sample
Total EI Score	118	0.97
SELF PERCEPTION	24	0.93
Self-regard	8	0.91
Self -actualization	9	0.88
Emotional self- awareness	7	0.81
SELF EXPRESSION	23	0.88
Emotional expression	8	0.84
Assertiveness	7	0.77
Independence	8	0.81
INTERPERSONAL	23	0.92
Interpersonal relationships	7	0.86
Empathy	9	0.88
Social responsibility	6	0.80
DECISION MAKING	24	0.88
Problem-solving	8	0.85
Reality testing	9	0.81
Impulse control	8	0.77
STRESS MANAGEMENT	24	0.92
Flexibility	8	0.80
Stress tolerance	8	0.87
Optimism	8	0.89
Happiness	8	0.92

N= 4000 subjects

Example B

Fieldwork Days since 1 Oct 2013	Internati onal prac	EI Training at T3 - ext since 1 Oct 2013	OT, Physio or Speech	Year of Study	TOT_T EI SCORE	SP_T SELF PERCE PTION	SR_T Self Regard	SA_T Self Actuali sation	ES_T Emotio nal Aware ness	SE_T SELF EXPRE SSION	EE_T Emotio nal Expres sion	AS_T Asserti veness	IN_T Indepe ndence	IS_T INTER PERSD MAL	IR_T Interpe rsonal Relatio nships	
140		0	1	4	T1	102	106	97	105	116	92	103	94	85	104	99
					T2	100	108	100	102	123	88	103	94	77	107	105
					T3	108	115	105	110	126	103	110	101	93	106	105
					Change T1 - T2	-2	2	3	-3	7	-4	0	0	-8	3	6
					Change T2 - T3	8	7	5	8	3	15	7	7	16	-1	0
					OVERALL Change T1 - T3	6	9	8	5	10	11	7	7	8	2	6

EM_T	RE_T	DM_T	PS_T	RT_T	IC_T	SM_T	FL_T	ST_T	OP_T	HA_T	
Empath y	Social Respo nsibilit y	DECISI ON MAKING	Problem Solving	Reality Testing	Impulse Control	STRES S MANA GEMENT	Flexibilit y	Stress Tolerance	Optimi sm	HAPPI NESS	
T1	109	101	104	94	103	112	101	91	104	106	112
T2	109	104	102	89	110	109	94	97	79	108	112
T3	109	101	108	97	117	106	103	97	101	108	112
Change T1 - T2	0	3	-2	-5	7	-3	-7	6	-25	2	0
Change T2 - T3	0	-3	6	8	7	-3	9	0	22	0	0
OVERALL Change T1 - T3	0	0	4	3	14	-6	2	6	-3	2	0

Appendix H Contribution of each co-author

This thesis includes five original papers published in peer-reviewed journals (Chapter 4), as well as one chapter of additional data analysis (Chapter 5) and a chapter devoted to the recommendations (Chapter 6). The ideas, development, and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the then Graduate School of Business, and now School of Management, Faculty of Business and Law, under the supervision of Professor Richard Ladyshevsky and Dr Richard Parsons in the Faculty of Health Sciences. The inclusion of co-authors reflects the fact that the work came from an active collaboration between researchers and acknowledges input into team-based research.



Nigel Gribble 29 January 2019

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author, I have consulted with the responsible author to agree on the respective contributions of the authors.



Professor Rick Ladyshevsky 29 January 2019



Dr Richard Parsons 29 January 2019

Appendix I Permission to reproduce journal articles

Below are the reproduction permissions from the journal where the articles in Chapter Four are published.

Paper 1: Written permission to reproduce the original article in this thesis was received from the editor of the Asia-Pacific Journal of Cooperative Education on 12 December 2018. NB: the Asia-Pacific Journal of Cooperative Education changed its names to International Journal of Work-Integrated Learning in January 2018.

Paper 2 and 3: Written permission to reproduce two original articles in this thesis was received from the editor of the Journal of Interprofessional Care on 15 December 2018.

Paper 4: Written permission to reproduce two original articles in this thesis was received from the editor of BMC Medical Education on 28 March 2019.

Paper 5: Written permission to reproduce the original article in this thesis was received from the editor of the British Journal of Occupational Therapy on 12 December 2018.

"I am watching. I'm not looking. No point moving for once.

Dry grass blowing. Slowly breathing.

No need for thinking for once.

Relax, relax, lay down next to me."

The Rosemary Beads

from the song

'Breath'

1994