Emotional intelligence and perceived stress of Australian pre-registration healthcare students: A multi-disciplinary cross-sectional study

Kim Foster[a,*], Judith Fethney[b], Desirée Kozlowski[c], Romano Fois[d], Fareen Reza[e], Andrea McCloughen[f]

[a] *Australian Catholic University & NorthWestern Mental Health, Royal Melbourne Hospital, Grattan St., Parkville, VIC 3032, Australia*
[b] *Biostatistician, Sydney Nursing School, University of Sydney, 88 Mallett St, Camperdown, NSW 2006, Australia*
[c] *Discipline of Psychology, School of Health and Human Sciences, Southern Cross University, Coffs Harbour, NSW 2450, Australia*
[d] *Faculty of Pharmacy (A15), University of Sydney, NSW 2006, Australia*
[e] *University of Sydney, Psychology for Kids, Bella Vista, NSW 2153, Australia*
[f] *Sydney Nursing School, University of Sydney, 88 Mallett Street, Camperdown, NSW 2050, Australia*

ARTICLE INFO

ABSTRACT

Background: Healthcare students can experience high levels of stress. Emotional intelligence can moderate stress and increase wellbeing however there has been no prior research on the relationship between emotional intelligence and stress in Australian healthcare students.
Objectives: To measure emotional intelligence (EI) and perceived stress (PS) in final year healthcare students (nursing, pharmacy and dentistry), and to explore the relationships between EI, PS and discipline.
Design and Setting: A cross sectional survey of pre-registration healthcare students at a metropolitan university in Australia.
Participants: 203 pre-registration final year healthcare students ($n = 58$ nursing; $n = 112$ pharmacy; $n = 34$ dentistry).
Methods: Emotional Intelligence was measured using the GENOS Emotional Intelligence Inventory (Concise Version) and stress was measured using the Perceived Stress Scale (PSS).
Results: A significant negative correlation was found between EI and PS in nursing and pharmacy students. No difference was found in EI across disciplines. Mean EI scores were lower than normative means. PS was significantly higher than the normative mean for pharmacy and dentistry students and higher than nursing students.
Conclusions: Emotional intelligence can have a protective effect against stress for healthcare students and can be increased via targeted educational interventions. To support student wellbeing there is a clear need for pre-registration healthcare curricula to include educational components on strengthening EI.

1. Introduction

Interpersonal work can be stressful for healthcare clinicians due to the emotional demands involved in caring for patients and their families (Ito et al., 2014) and the complex environments in which this work occurs (Hurley, 2008). Extended periods of emotional labour in pressured clinical settings is associated with negative outcomes including burnout and compassion fatigue (Berger et al., 2015), and decreased quality of patient care (McHugh et al., 2011). In their clinical placements, healthcare students are exposed to the realities of interpersonal work in demanding environments (Por et al., 2011). Students can experience high levels of stress associated with this work (Birks et al., 2009), as well as current life challenges and academic requirements (Pryjmachuk and Richards, 2007).

Emotional intelligence (EI) involves the ability to perceive and effectively use self and others' emotions, and to integrate emotion to facilitate thinking, and understand and regulate emotions to promote personal development (Birks et al., 2009). EI behaviours are essential for healthcare workers as they include the relational skills to effectively manage the interpersonal demands of practice (Mayer and Salovey, 1997). Increasing EI is an effective strategy to mediate stress and decrease burnout (Görgens-Ekermans and Brand, 2012). EI behaviours

---

* Corresponding author.
  E-mail addresses: kim.foster@acu.edu.au (K. Foster), Judith.fethney@sydney.edu.au (J. Fethney), Desiree.Kozlowski@scu.edu.au (D. Kozlowski), romanofois80@gmail.com (R. Fois), fareen.reza@psychologyforkids.com.au (F. Reza), andrea.mccloughen@sydney.edu.au (A. McCloughen).

such as perceived emotional self-control and emotional competence have helped undergraduate nursing students manage stress and increase their subjective well-being (Por et al., 2011). Higher levels of EI are also associated with reduced stress in dentistry students (Pau et al., 2007) and better psychological health in pharmacy students (Othman et al., 2016).

2. Background

EI comprises skills associated with distinguishing, understanding, managing and using emotions in self and others (Mayer and Salovey, 1997). Measures of EI ability capture maximal performance on skills associated with EI (Roberts et al., 2008), however, it has been argued that a measure of typical EI performance provides a more useful index, particularly when assessing EI skills in workplace settings (Gignac, 2010).

The majority of EI research in healthcare has focused on nurses (Birks et al., 2009; Marvos and Hale, 2015). In nursing students, higher EI is associated with higher clinical and academic performance (Rankin, 2013), better practice performance (Beauvais et al., 2011) and improved patient healthcare outcomes (Quoidbach and Hansenne, 2009). EI has been investigated to a more limited extent with other healthcare students. In dental undergraduates, higher EI is associated with lower stress levels (Pau et al., 2007) and burnout (Görgens-Ekermans and Brand, 2012), and higher patient satisfaction (Azimi et al., 2010) and predicts subjective well-being (Montasem et al., 2013).

In the UK, Birks et al. (2009) examined the relationship between EI and perceived stress (PS) in pre-registration students. Higher EI was significantly associated with lower PS. Schneider et al. (2013) propose that EI facilitates stress resilience but males and females may differ in the mechanisms by which this occurs. A number of factors, for example, self-efficacy (Yefei et al., 2016) and achievement motivation (Magnano et al., 2016), co-vary with EI and are likely to be involved or even mediate the relationship between EI and PS. EI has also EI has been positively related to age (Scheibe and Carstensen, 2010) with higher EI scores occurring in older adults. Birks et al. (2009), however, found no systematic gender or age differences on EI scores or on PS and no difference in EI scores across disciplines.

Effective relational skills and emotional competence are fundamental capabilities for healthcare students to promote their wellbeing and strengthen their professional practice (McCloughen and Foster, 2017). Pre-registration healthcare curricula have been criticised for inadequately preparing students for the inter/personal demands of practice (Hurley and Rankin, 2008). There is a need for teaching and learning that equips students to be self-aware and emotionally competent (Foster et al., 2015). This is particularly relevant as undergraduate healthcare students experience high levels of stress (Alzahem et al., 2011; Geslani and Gaebelein, 2013) and EI may moderate stress (Birks et al., 2009). High levels of stress in students in health-related disciplines have been reported from an Australian perspective (Leahy et al., 2010) although there is no prior reporting of the relationship between EI and PS in a multidisciplinary group of Australian healthcare students. In Australian dentistry students, a cross-cultural comparison of the relationship between EI and PS revealed a weaker correlation between them than for dentistry students in some other countries (Pau et al., 2007). It is unclear whether that finding was discipline-specific, country-specific, or for other reasons. Given the widely reported relationship between EI and PS in healthcare students, a cross-disciplinary examination of an Australian sample was undertaken as there was no prior reporting of the relationship between EI and PS in this group.

2.1. Aims and Hypotheses

The primary aim of the study was to investigate the relationship between EI behaviours and PS in pre-registration healthcare students in

an Australian university. Based on prior literature it was hypothesised there would be a negative correlation between EI and PS.

Secondary objectives were to determine whether there was:

- A relationship between demographic variables and EI and PS
- A difference in EI and PS scores between pre-registration nursing, pharmacy and dentistry students
- A difference in EI and PS in the student samples compared with normative means

3. Method

As this study is observational in nature and involves exploring associations between EI, PS and demographic/educational variables, a correlational cross-sectional survey design was used (MacDonald et al., 2015).

3.1. Participants

A convenience sample of final year pre-registration nursing, pharmacy and dentistry students participated. The sample comprised pre-registration Master of Nursing degree or combined Master of Nursing degree students with Bachelor of Arts, Science or Health Science degrees, and pre-registration Master or Bachelor of Pharmacy, and Bachelor of Dentistry, students. Final year students were selected for inclusion as they had experienced most of their theory units and clinical placements, and previous literature (e.g. Birks et al., 2009; Pau et al., 2007) indicates a gap in knowledge on final year students' levels of stress and EI.

3.2. Pre-registration Program

Master of Nursing students had completed approximately 360 h of clinical placement prior to the study. Students in a combined Master of Nursing and Bachelor degree (Arts, Science, or Health Science) had completed approximately 400 h. Master of Pharmacy students had completed around 105 h of placement. Bachelor of Pharmacy students had completed around 145 h of placement. Dentistry students had completed approximately 968 h of placement.

3.3. Instruments

Participants received a survey booklet comprising demographic questions and two self-report measures: the GENOS Emotional Intelligence Inventory – Concise Version (Gignac, 2008) and the Perceived Stress Scale (Cohen et al., 1983).

3.3.1. Demographic Questions

Demographic information included age, gender, nationality, level of education completed and clinical placements.

3.3.2. GENOS Emotional Intelligence Inventory – Concise Version

The 31-item GENOS Emotional Intelligence (EI) Inventory (concise version) (Gignac, 2008) measures typical EI functioning in the workplace according to a 7-factor conceptualisation of EI behaviour comprising emotional self-awareness; emotional expression; emotional awareness of others; emotional reasoning; emotional self-management; emotional management of others; and emotional self-control (Gignac, 2010). Respondents rate how they think, feel and act in their work. For example, "*I demonstrate to others that I have considered their feelings in decisions I make at work.*" Responses are scored on a five-point Likert scale, ranging from '1 = *Almost Never*' to '5 = *Almost Always.*' Higher scores indicate greater levels of EI behaviours. The Concise version has sound internal consistency reliability, with Cronbach's $\alpha = 0.93$. Normative data based on adult populations in a range of industries ($N = 4775$) and countries, indicated a mean EI score of 121.86