

**An exploration of the relationship between emotional  
intelligence and stress, psychological distress and coping  
strategies for undergraduate nursing students**

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## ABSTRACT

**Background:** Undergraduate nursing students may experience high levels of stress during their study. This may lead to high attrition rates. Coping strategies used to deal with stress may not always be effective. A growing number of studies have examined the effects of emotional intelligence in handling stress. The primary aim of this study was to examine the relationship between emotional Intelligence, stress and psychological distress, and coping strategies for undergraduate nursing students.

**Methods:** A descriptive correlational design was used in this study. A convenience sample of 377 nursing students participated. Data were collected by self-report questionnaires. The Schutte Self-Report Emotional Intelligence Test, Perceived Stress Scale, Kessler Psychological Distress Scale, Coping Strategy Inventory – Short Form, and a demographic survey were utilised to obtain data. Data were analysed using descriptive statistics. The relationship between emotional intelligence, perceived stress, psychological distress and coping strategies was analysed by univariate analysis (independent samples t-test, one-way ANOVA, Pearson’s Correlation) and multiple regression. Completion and submission of questionnaires was implied consent. Institutional ethics approval was obtained.

**Findings:** Second and third year undergraduate nursing students (n=377) participated in this study. Most participants had average levels of emotional intelligence and were likely to be experiencing moderate to high levels of stress and some degree of psychological distress. The participants reported preference for utilisation of engagement, rather than disengagement, coping strategies. A negative correlation was found between emotional intelligence and perceived stress, while a positive correlation was found between emotional intelligence and coping strategies and psychological distress. Significant differences were identified in emotional intelligence level, perceived stress and utilisation of coping strategies based on individual characteristics.

**Conclusion:** While the majority of participants had an average level of emotional intelligence and were more likely to use engagement coping strategies rather than

disengagement coping strategies, a moderate proportion of students could have been experiencing moderate levels of stress and psychological distress which needed to be addressed. Future research may explore the development, application and evaluation of strategies to reduce stress and distress for students undertaking tertiary education in nursing. In particular, international students and migrants may require specific support to enhance their educational experience.

# STUDENT DECLARATION

## Master by Research Declaration

“I, Nerissa ASTURIAS, declare that the Master by Research thesis entitled ‘*An exploration of the relationship between emotional intelligence and stress, psychological distress and coping strategies for undergraduate nursing students*’ is no more than 60,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

Signature:

A solid black rectangular box redacting the signature of the student.

Date: 30 August 2017

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My independent editor Dr Kate White for editing selected parts of the thesis and making herself available at 24-hour notice & delivering the job within the following 24 hours.

Finally, the authors before me who published their works and became my references in this study.

## DEDICATION

This study is dedicated to all undergraduate nursing students.

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## GLOSSARY

- Burnout – “an affective reaction to on-going stress whose core content is the gradual depletion over time of individuals’ intrinsic energetic resources” (Shirom, 2011, p. 223).
- Coping – “the person's constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources” (Folkman, 1984, p. 5).
- Coping strategies – “refers to how individuals manage the demand of stressful events” (Montes-Berges & Augusto, 2007, p. 2).
- Disengagement coping strategy - one of the two tertiary subclass of the Coping Strategies Inventory developed by Tobin (Tobin, Holroyd, & Reynolds, 1984); type of coping strategies used by a person to actively detach themselves from the problem or stressful situation (Tobin, Holroyd, Reynolds, & Wigal, 1989).
- Emotional intelligence (EI) – “the capacity of an individual to monitor their own and others’ feelings and emotions, to discriminate among them and to use the information to guide their thinking and actions” (Fernandez, Salamonsen, & Griffiths, 2012, p. 2; Salovey, Peter & Mayer, 1990, p. 5).
- Engagement coping strategy – one of the two tertiary subclass of the Coping Strategies Inventory developed by Tobin (Tobin et al., 1989); refers to sets of coping strategies used by a person to actively manage problems, both problem or emotional aspect of a stressful situation (Tobin et al., 1989).
- Stressors are situations or events that negatively affect health outcomes (Khajehei, Ziyadlou, Hadzic, & Kashefi, 2011).
- Student attrition – “the difference between the numbers of students beginning each cohort and the numbers who completed that cohort” (Glossop, 2002, p.377).

- UGNS – undergraduate nursing students

# CHAPTER ONE

## Introduction

### 1.1 Introduction

Emotional intelligence has been found to be strongly associated with academic achievement, critical thinking, peer learning and help seeking (Fernandez et al., 2012). It is also helpful in improving mood and reducing the effects of stress (Ciarrochi, Deane, & Anderson, 2002; Landa, López-Zafra, Martos, & del Carmen Aguilar-Luzón, 2008).

This chapter presents an overview of the study. The chapter will begin with an introduction to Emotional intelligence (hereafter EI). This will be followed by the aim of the study, the research question, and justification for the study. It will conclude with a description of the structure of the thesis.

### 1.2 An Introduction to Emotional Intelligence

Emotional intelligence is said to be the capacity of an individual to “monitor one’s own and others’ feelings and emotion, to discriminate among them and to use the information to guide one’s thinking and action” (Salovey, Peter & Mayer, 1990, p. 189). It has been postulated that EI improves with age. EI is based on the model of emotion that is mostly governed by the limbic system in the brain which is responsible for impulses, drives and feelings (Goleman, 2004). Goleman (2014) suggests that EI can be improved through training, provided it includes the limbic system (Goleman, 2004). This system adapts better when receiving “motivation, extended practice and feedback” (Goleman, 2004, p. 86). It started gaining popularity when the book of the same title, *Emotional Intelligence*, written by a psychologist Daniel Goleman, was published in 1995. Goleman depicted EI using the following framework of five domains or competencies (Goleman, 1998, 2004):

1. Self-awareness: the ability to understand and/or recognise one's emotional state of being and how it affects others. It can be recognised by realistic self-appraisal, self-confidence, welcoming feedback and a self-deprecating sense of humour;
2. Self-regulation: the ability to control one's emotion and to redirect negative emotion into something positive. It can be distinguished by one's integrity, ease in adapting to changes and uncertainties, and trustworthiness;
3. Motivation: the driving force that helps an individual to persistently reach their goal. It can be recognised by one's commitment to an organisation, strong will to achieve something, and being positive even in the face of adversity;
4. Empathy: the individual's ability to understand the emotional state of someone and to treat them appropriately based on that emotional state. Its hallmark includes cultural sensitivity; and
5. Social skills: the ability to create or build rapport with other individuals or build or expand networks by effectively managing relationship with them. It is indicated by one's ability to persuade, to lead teams and to lead change.

Because of these competencies, EI has been found to be valuable in nursing practice (Fernandez et al., 2012). EI enables the promotion of healthy relationships between colleagues and patients by nurse being in tune with their own and others' emotions (Fernandez et al., 2012; Landa et al., 2008). EI enables nursing students to become aware of their expressed emotion (Mayer & Salovey, 1997) and helps them work harmoniously through their thoughts and feelings (Freshwater & Stickley, 2004). EI also helps nurse and nursing students reduce their stress and/or burnout, improves their health and positively impacts their patients' outcome (Akerjordet & Severinsson, 2008; Birks, McKendree, & Watt, 2009; Karim, 2009; Landa et al., 2008). EI has been found to assist with coping by focusing on the recognition of people's emotional state which can assist in regulating behaviour and solving problems (Ciarrochi et al., 2002; Salovey, Peter & Mayer, 1990; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002).

### **1.3 Aim**

The aim of this study was to examine the relationship between EI and stress, psychological distress and coping strategies for undergraduate nursing students (hereafter UGNS). Participants were students enrolled in the second and third year of a Bachelor of Nursing course at an Australian university.

### **1.4 Research questions**

This study had two main research questions:

1. Is there a significant correlation between emotional intelligence, stress, psychological distress and utilisation of coping strategies for undergraduate nursing students?
2. Is there a difference between the levels of emotional intelligence, stress, psychological distress and utilisation of coping strategies for undergraduate nursing students based on individual characteristics?

### **1.5 Justification of the study**

There are very few published studies that discuss the interrelationship between EI and perceived stress, distress, and utilisation of coping strategies. Inclusion of socio-demographic factors in the analysis and treating it as an influential factor in someone's EI level, perception of stress, predisposition to psychological distress and utilisation of coping strategies is not often done. There is a clear gap in this area of study that can be filled by the findings of this study. Furthermore, the result of this study will contribute to an enhanced understanding of the degree of stress and psychological distress that UGNS are experiencing. Prior to the conduct of this study, it had been observed (anecdotal evidence) that UGNS were experiencing stress and psychological distress when undertaking theoretical study and during professional practice (clinical practicum). It was also known that pressures from within the students' social context, for example, work and family commitments, had the capacity to negatively impact on their ability to succeed in their studies. Inability to cope with these competing demands may lead to stress, which can adversely affect academic performance and may result in

withdrawal or deferral in studies. Having a good level of EI is important in the nursing practice as well as the individual wellbeing of UGNS. Furthermore, it can also assist in improving the students' capacity to deal with stress, which may improve their academic and clinical performance. Understanding EI, stress and psychological distress, and utilisation of coping strategies for this cohort of students is important, as these findings may inform the development of strategies in the future to enhance the students' experience while enrolled in an undergraduate degree at a tertiary institution.

## **1.6 Structure of the thesis**

This thesis is divided into five chapters: introduction, literature review, methods, results, and discussion. A review of literature related to EI, stress, effects of stress among nurses and UGNS will be discussed, as well as the most commonly used strategies in alleviating stress. In the methods chapter, the instruments used in this study will be explored, as well as the rationale for the approach used in data collection and analysis. The results chapter contains all the findings. The discussion chapter will explore the significance of the findings, make recommendations for future research, outline the limitations of this study and make concluding statements.

## **CHAPTER TWO**

### **Literature Review**

#### **2.1 Introduction**

This chapter discusses the literature related to the study. The first section presents a brief history of nursing in Australia. This is followed by an overview of emotional intelligence and its application for nurses and undergraduate nursing students (UGNS), and a discussion about stress, including its causes, and how it affects the nursing profession and undergraduate education. Finally, the chapter will discuss how nurses cope and common strategies nurses and UGNS use to manage stress.

#### **2.2 Literature search**

Relevant literature was searched in the following search engines EBSCO Host, Scopus, and the university library general search function using the following criteria: published in the last ten years, and English language. The keywords 'emotional intelligence', 'nursing students' 'stress' 'coping strategies' and 'psychological distress' were used in the search. Truncations of key words were also used during the search.

#### **2.3 History of nursing in Australia**

In 1868, the Nightingale model of nursing was introduced in Australia (Lusk, Russell, Rodgers, & Wilson-Barnett, 2001; Russell, 1990). Prior to that time, there were no formal training programs for nurses. Nursing positions were taken up by female domestic staff who were mostly elderly women of 'questionable' class and often reported for duty intoxicated (Russell, 1990). Moreover, former male patients who could not get a job elsewhere were hired by an infirmary to care for male patients (Russell, 1990). The role of the nurse was similar to a housekeeper; they mostly followed doctor's orders and did not make autonomous decisions about patient care (Russell, 1990). The Nightingale model of nursing was first introduced by Lucy Osburn and five other

Nightingale trainees at the Sydney Infirmary, which later became Sydney Hospital (Lusk et al., 2001).

As the Nightingale system of nursing extended throughout Australia, a significant degree of change occurred in nursing training and the administration of hospitals (Russell, 1990). The matron was now viewed as the most skilled nurse in the hospital who was expected to lead and act as a good example to other nurses (Russell, 1990). Students were carefully selected by the matron and provided with training, uniform, board, and lodging with no extra cost (Russell, 1990). Training involved being rotated in different areas of the hospital to gain broad experience, and attendance at lectures delivered either by a doctor or head matron (Russell, 1990). During the earlier years of the Nightingale model of training, nursing was governed by the Australian Trained Nurses Association and the Victorian Trained Nurses Association (Lusk et al., 2001; Russell, 1990). These statutory authorities performed functions such as supervision of nurse training, accreditation of nurse education and state-wide registration (Lusk et al., 2001). In the 1960s, specialist areas were added to the training program, including midwifery, mothercraft, psychiatric, mental retardation and geriatric nursing (Lusk et al., 2001).

A significant change occurred in the nursing profession during the 1960s and 1970s, along with the proposal to transfer the hospital-based apprenticeship system to incorporate higher education (Lusk et al., 2001). These changes were in part influenced by factors such as advances in medical technology, increasing complexity of nursing skills and scope of practice, and lengthened nursing programs to facilitate extended nursing curriculum to meet the demands of new medical technologies (Margaret, Jennene, Madsen, & Godden, 2010; The Department of Health, 2013 (DoH)). International models of nursing education, particularly in the United Kingdom (UK) and United States of America (US), and general social concerns, such as women's changing role in the society, and lack of ongoing funding or government initiatives also influenced this change (Lusk et al., 2001). The Federal Government of Australia supported the transfer of basic nursing education to the higher education sector (Russell, 1990). The first Australian state to initiate higher education training as compulsory for all nurses was New South Wales (NSW) in 1985 (Russell, 1990).

Notable changes occurred after the transfer of nursing education from hospital-based to university-based systems of education. For instance, the hospital based education system provided benefits including a wage, cheap accommodation and meals, and provision of a uniform (Urwin et al., 2010). In contrast, students undertaking university study do not receive a wage, uniform or accommodation. University students were expected to pay for their tertiary education and could be required to travel away from home for clinical placement and classes (Glossop, 2002). According to Russell (1990), training in hospital-based systems was secondary to the hospital's service needs. The theoretical components of the course, often delivered by doctors, the matron or other healthcare workers, were limited and were accommodated within the student's busy hospital workload (Russell, 1990). Students provided services to meet hospital demands. The main learning environment was in the hospital setting and often based on trial and error (Russell, 1990).

In Australia, undergraduate nursing education is now mainly carried out in universities. UGNS are offered support during their first year of study to ensure that they are equipped with all the skills they require to undertake the curriculum (Cassar, Funk, Hutchings, Henderson, & Pancini, 2012). The bachelor course takes about three years to complete for full-time UGNS. Clinical placement or professional practice is undertaken alongside academic learning.

There is evidence that the structure of nursing education in the 21st century may be a source of additional stress for students (Urwin et al., 2010). Students are often required to work in addition to studying so they can support themselves financially. Some may also be responsible for supporting their families (Gibbons, 2010; Meachin & Webb, 1996). These competing demands can eventually take a negative toll on the students' academic progress, health and psychological well-being (Wheeler & Riding, 1993; Yamashita, Saito, & Takao, 2012). Having an effective stress management strategy are essential for UGNS to be able to cope with these demands. Enhancing emotional intelligence, can also help improve and develop individuals' coping strategies, which, can assist in stress management.

## 2.4 Emotional Intelligence

Emotional Intelligence is said to be the capacity of an individual to “monitor one’s own and others’ feelings and emotion, to discriminate among them and to use the information to guide one’s thinking and action” (Salovey, Peter & Mayer, 1990, p. 189). EI focuses on the recognition of people’s emotional state which can assist in regulating behaviour and solving problems (Salovey, Peter & Mayer, 1990). Individuals who can accurately express their emotions can easily recognise and handle them appropriately, making it easier to convey emotions to others (Salovey, Peter & Mayer, 1990).

In the past two decades there have been a growing number of studies focusing on the benefits of EI; however, this has also increased the confusion about terminologies used for EI. Previously there were five main models of EI in the literature, namely: “Emotional Intelligence-Mayer, Salovey and Caruso’s Conceptualisation; Bar-On’s Model of Emotional Intelligence; Daniel Goleman’s Model of Emotional Intelligence; The Four Cornerstone Model of Emotional Intelligence; and, the Six Seconds Model of Emotional Intelligence” (Rastogi, Kewalramani, & Agrawal, 2015, p. 178). These five models were later categorised into two models of EI: the ability and mixed model, suggested by Mayer, Salovey and Caruso (2002); and the trait and information processing model (Petrides & Furnham, 2000a). The Ability Model was interchangeably used with the Information Processing Model because both models were concerned with meaningful interactions between thoughts or cognitive abilities, and emotions (Caruso et al., 2002; Petrides & Furnham, 2000a). The Mixed Model and Trait Model, on the other hand, were often used interchangeably because both focuses more on other aspects of personalities that were not necessarily emotion related (Caruso et al., 2002; Petrides & Furnham, 2000a). This included typical behavioural patterns in different situations (Rastogi et al., 2015). A further study on the different models of EI indicates that the original five models, along with their branches or dimensions, agree on many aspects and suggests that EI gives rise to four main dimensions namely: understanding others, understanding self, managing others and managing self (Rastogi et al., 2015).

Knowing the four main dimensions of EI and what these dimensions are for is important. It can assist readers to better appreciate why, in some cases, a cohort of participants still experiences psychological distress despite having high EI level.

#### **2.4.1 Emotional intelligence and everyday stressors**

The relationship of EI to perceived stress, subjective wellbeing, coping strategies, nursing competency and academic performance was explored by Por, Barriball, Fitzpatrick, and Roberts (2011). One-hundred and thirty UGNS from different nursing programs in one higher education institute in the UK participated in the study. The authors found that UGNS with higher EI were less stressed and more capable of managing emotions that arose from the course demands. UGNS with high levels of EI were also found to have fewer symptoms of burnout, could easily recognise anxiety and/or anger, and could plan an effective solution to a problem. In addition, the authors found that the most commonly used problem-focused strategy by individuals with high EI scores was efficient planning. In another study, Ciarrochi, Deane and Anderson (2002) measured self-reported emotional intelligence, suicidal ideation, daily hassles, hopelessness, depression and major life events of 302 students using cross-sectional survey design. The notable findings of this study included: a statistically significant negative correlation between managing self-emotion, a factor of EI, and hopelessness; hopelessness, depression and suicidal ideation among people with high perception, also a factor of EI, was strongly associated with hassles, “the frustrations and irritation of everyday encounters that can range from minor annoyance to major pressure, problems or difficulty” (Ciarrochi et al., 2002, p. 202); there was a high relationship between suicidal ideation and hassles among people that were low in managing others’ emotion, another EI factor; and lower depression was associated with higher emotion regulation. Landa and colleagues conducted a study of the interrelationship between EI, health and work stress in nursing staff (n=180) in a hospital in Spain (Landa et al., 2008). The authors found that nurses who scored low in different dimensions of EI were easily stressed when there were sudden changes in their shift, when experiencing conflict with colleagues or when there was not enough support from superiors. In addition, the study indicated that nurses who scored high in different dimensions of EI were less likely to

report experiencing physical pain which could cause limitation to the nurses' productivity, and usually had better general and mental health status.

Two dimensions of EI, clarity and repair, have been found to have an inverse relationship with suicide risk in a descriptive cross-sectional study conducted by Aradilla-Herero et al. (2014) that involved 93 nursing students. This study aimed to establish the prevalence of suicide risk among nursing students, to investigate the relationship between perceived emotional intelligence, self-esteem, depression, trait anxiety and suicide risk; and to establish if differences in gender exist in relation to the aforementioned variables (Aradilla-Herrero et al., 2014). Additional results of this study showed that the EI dimension, attention, has a direct relationship with depression ( $p < .001$ ) and suicide risk ( $p < .001$ ) and anxiety ( $p < .001$ ), with women scoring higher in these variables than men.

There is also a correlation between EI and how students learn. Fernandez et al. (2012) examined the association between EI and learning strategies and their influence on academic performance for first-year accelerated nursing students. This Sydney-based study involved 81 students and used a prospective survey design. A statistically significant correlation was found between EI and critical thinking ( $p < .001$ ), help seeking ( $p .003$ ) and peer learning ( $p .004$ ). EI was strongly associated with academic achievement ( $p .023$ ). Rankin (2013) had similar findings in a study of 178 nursing and midwifery students that examined the capacity of EI in predicting the student's academic performance, clinical practice performance, and retention of first year students. This study found that both EI and age were good predictors of progression in the course (Rankin, 2013). EI was also a good predictor of academic performance, especially clinical performance, along with age.

#### **2.4.2 Emotional intelligence and its benefits to nursing**

Emotion is essential to nursing practice as it influences decision-making regarding patient care and interpersonal relationships with co-workers (Smith, Profetto-McGrath, & Cummings, 2009). EI theorists claim that when emotion is used while thinking or arriving at a decision, it is considered intelligence (Smith et al., 2009). Moreover, when cognition and emotion are used together, this can help manage

emotions, facilitate rational decision making and improve relationships (George, 2000), because assessing and accurately expressing emotion is said to be a part of EI (Salovey, Peter & Mayer, 1990).

EI can be beneficial in nursing practice. For nurses in the clinical setting, EI helps to develop and maintain positive relationships with patients, co-workers, new graduates and student nurses (Fernandez et al., 2012). EI has also been found to assist individuals in coping with environmental demands, and improving mood and self-esteem in stressful situations (Ciarrochi et al., 2002; Schutte et al., 2002). EI has also been associated with helping reduce stress and/or burnout and improves the health of nurses and student nurses, which positively impacts on patient care outcomes (Landa et al., 2008).

#### **2.4.3 Emotional intelligence can be developed**

EI develops through time and this has been shown in a study conducted by Foster et al. (Foster et al., 2017) involving 111 nursing students enrolled in an Australian university. The aim of this study was to assess the EI of the participants as they progressed through the course by employing a longitudinal repeated measure design. The results of the study showed a significant increase of 3.50 in the total EI score from Time1 to Time3. An increase in the score of one of the subscales of EI, managing others' emotion, was also seen to have a positive effect on the participant's weighted academic mark.

Some forms of life skills training had been found to be effective in developing the EI level of individuals. A total of 39 participants in medical related courses including nursing took part in a study conducted by Lolaty et al. (2012), which measured the EI level of participants before and after life skills training. Skills in the life skills training included self-awareness, emotion management, time management, interpersonal communication, determination, stress management and problem solving (Lolaty et al., 2012). The 39 participants were divided into two groups. The case group received training for four hours, once a week for eight weeks; and the control group only received training after the study was conducted in respect of some ethical considerations. The

study found a remarkable increase of 89.84 in the EI mean score of those in the case group after training.

Developing EI takes commitment and a conscious effort to improve (Goleman, 2004). It also require emotional awareness, practice, education, accepting feedback from the others and commitment (Clancy, 2014; Goleman, 2004). Other than these recommendations, there was a scarcity of published literature in this area of emotional intelligence.

## **2.5 Stress response**

Stress is a psychological response where an individual may view something as potentially threatening (Day & Livingstone, 2003). It has also been classified as a 'nonspecific response of the body to any demand made upon it' (Selye, 1973, p. 692). According to Lazarus and Folkman, it has a 'particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being' (1984, p. 19). With stress, there is always a demand for the body to adapt and re-establish its normal function regardless of the cause of the demand (Selye, 1973). Therefore, stress is a response rather than a stimulus.

In 1950, Selye pioneered research in stress and first called the stress response a 'General Adaptation Syndrome' (Selye, 1950). He found that when a body is in a state of stress, physiological changes take place in response to the perceived threat. This occurs in three stages, namely: 'Alarm Reaction' (AR), 'Stage of Resistance' or 'Stage of Adaptation' and 'Stage of Exhaustion' (Selye, 1950, p. 4667). During the alarm reaction stage, the part of the brain responsible for processing emotion, the amygdala, sends a signal to the command centre of the brain, the hypothalamus (Thompson, 2015). The hypothalamus communicates with other parts of the body via the autonomic nervous system and its two components, the sympathetic and parasympathetic nervous system. In the alarm reaction stage, it is the sympathetic nervous system that is active in the body (Thompson, 2015, p. 193). It triggers the fight-or-flight response (Thompson, 2015, p. 193). During this stage, the heart rate, breathing and blood pressure (BP) increase

(Thompson, 2015, p. 193). The body also uses stored sugar and fats as energy during this phase. When the person is exposed to ongoing stress, the body enters the stage of resistance or adaptation (Selye, 1973). In this stage, the hypothalamus releases corticotrophin-releasing hormone which triggers the release of adrenocorticotrophic hormone (ACTH) from the pituitary glands. ACTH prompts the release of cortisol from the adrenal glands (Thompson, 2015, p. 241). This causes the body to remain in a heightened alert state for an extended period of time, which is a compensatory mechanism to assist it to adapt to prolonged stress. Long term exposure to stress causes the body to enter the stage of exhaustion (Selye, 1973). In this stage, blood pressure may remain high, which is harmful to the cardiovascular system. Furthermore, the presence of cortisol in the bloodstream can affect sleep which leads to decreased concentration and low productivity.

### **2.5.1 Sources of stress among registered nurses**

Nursing is a stressful occupation (Montes-Berges & Augusto, 2007). Nurses are regularly exposed to stressful work environments and this can be influenced by work demands and relationships with colleagues. Often, nurses report that their hospitals are under staffed (Casey, Fink, Krugman, & Propst, 2004), and they are forced to work with limited resources to continually care for the growing number of patients in hospitals (Xianyu & Lambert, 2006). Having erratic work schedules, receiving physical and/or verbal abuse from patients and patients' relatives, dealing with death and/or dying, experiencing conflicts with other members of the multidisciplinary team including doctors, insufficient staffing and lack or inadequate emotional support from their superiors are the most common stressors which nurses' experience (Callaghan, Tak-Ying, & Wyatt, 2000; Muncer, Taylor, Green, & McManus, 2001). Coordinating with other members of the multidisciplinary team and undertaking post-graduate study for employment in critical care areas (Summers et al., 2009) can also add to their stress level.

In a quantitative study, Opie et al. (2011) compared the levels of occupational stress and workplace conditions of 277 nurses working in three major hospitals in South Australia and the Northern Territory (Group A) and 349 nurses working in remote

Australia (Group B). The authors found that nurses in Group A reported high levels of psychological distress and emotional exhaustion compared to the nurses in Group B. In addition, among nurses in Group A, psychological distress was strongly correlated with conflict with other nurses ( $r=.43$ ,  $p<.01$ ) and lack of support ( $r=.42$ ,  $p<.01$ ). The high workload was found to be the largest contributor to emotional exhaustion ( $r=.55$ ,  $p<.01$ ) among nurses in this group. In contrast with nurses in Group A, for nurses in Group B conflict with physicians was strongly correlated with psychological distress ( $r=.34$ ,  $p<.01$ ), while workload demands were found to be the main contributor of emotional exhaustion ( $r=.43$ ,  $p<.01$ ). Moreover, conflict with other nurses and supervisors was found to be a major contributor to psychological distress ( $r=.32$ ,  $p<.01$ ) and emotional exhaustion ( $r=.32$ ,  $p<.01$ ) among nurses in Group B. In 2000, Callaghan et al. conducted a quantitative study in Hong Kong with 168 nurses from different professional organisations (Callaghan et al., 2000). The study aimed to investigate the factors related to stress among nurses. The authors found the following to be major causes of stress: nursing issues (38.1%), interpersonal relationships (14.6%), hospital administration (12%), duty issues (11.7%), ward/clinic management issues (6.8%), promotion and career development issues (6.8%), and doctor-related issues (3.2%).

New nursing graduates can also experience stress, particularly in their first year of employment. A mixed method study by Casey et al. (2004) in six Denver (US) acute care hospitals from 1999 to 2001 identified the stresses and challenges for new graduate nurses within the first year of their employment after graduation. Some of the challenges that participants in this study experienced included feeling incompetent with caring for their patient load due to low self-confidence, feeling overwhelmed with the patient-nurse ratio, the hospital being understaffed, difficulty managing time and feeling undervalued by physicians. This study also found that 47% of participants reported experiencing stress in their personal life. A further 25% reported that financial matters including student loans added to stress. Approximately one-third (37%) reported not being comfortable caring for dying patients. Some participants reported experiencing burn out in the first year of employment (Casey et al., 2004).

### **2.5.2 Sources of stress among undergraduate nursing students**

It has also been identified that UGNS experience a significant amount of stress related to their study or personal life. There were several factors that contributed to stress for UGNS including: academic demands; balancing work, school and home demands; unpreparedness for clinical practice; and interpersonal and health issues (Gibbons, 2010; Meachin & Webb, 1996). In a quantitative study, Singh et al. (2011) measured the stress level and utilisation of coping strategies of 44 UGNS in India. The study found that 63.3% of the research participants reported experiencing a moderate amount of stress.

Several studies have examined stress in UGNS and how this affects their studies. A mixed method study in Northern Ireland involving 35 students, investigated the perceived stress and coping mechanisms for UGNS enrolled in a diploma of nursing (Hamill, 1995). Participants completed a paper-based questionnaire (N=35) and some were also interviewed (N=10). The author found the following factors cause stress: contrast between actual practice and students' expectations, students' perception that tutors may fail them based solely on the quality of submitted assignments, inconsistent advice from tutors regarding assessment tasks, and lack of preparation for clinical placement. In a similar study, Magnussen and Amundson (2003) explored the experience of being a nursing student by interviewing 12 nursing students in a public university in Hawaii (US). The study found four major themes: (1) difficulty in meeting conflicting demands between work, school and home, (2) being overwhelmed by the amount of learning materials, (3) feeling unprepared for clinical practice, and (4) seeking respect and support from one's faculty.

Mature aged students also face challenges when returning to university. An Irish-based qualitative study by O'Brien, Keogh and Neenan (2009) explored the experiences of 28 mature aged nursing students using focus groups. These students reported struggling with the academic component of the course. Respondents with children reported difficulties balancing family and university life. In the same study, female participants identified more challenges than male participants. For instance, female participants reported that they still performed the same household chores they did

before returning to formal education, alongside their university tasks. Furthermore, students also reported that the support they receive from their partners was more haphazard. In contrast, most male participants reported their partners or wives offered a significant amount of support during their academic study. In a similar qualitative study by Steele, Lauder, Caperchione and Anastasi (2005), mature aged students cited financial difficulties related to leaving the workforce in exchange for seeking a higher education qualification, re-entry into tertiary education as adult learners, and balancing academic, family and work commitments as factors which contributed to stress.

Stress for UGNS has been explored in Australia. A quantitative study in NSW followed a cohort of nursing students for three years of a nursing program to investigate their perception of sources of stress (Lo, 2002). It included a total of 120 first year students, 112 second year students and 101 third year students. The following factors were identified as contributors to stress in the final year of the nursing program: nursing studies (81.2%), finance (61.4%), family (48.5%), health (36.6%), relocation (23.8%), divorce or separation (19.8%), death in the family (16.8%), and marital issues (8.9%). International students studying nursing in Australia were found to have other sources of stress. A study by Khawaja, Chan, & Stein (2017) of 152 UGNS, explored the relationship between the stress experienced by international students and second language anxiety. The authors found that with academic-related stressors, fear of negative evaluation when using the English language, marginalisation or lack of social connection either to the host or original culture, and second language anxiety were the main contributors to stress, and for placement-related stressors, marginalisation and second language anxiety were found to be the main contributors to stress.

The professional practice experience component of undergraduate nursing education has been identified as another cause of stress for the UGNS (Beck, 1995; Brown & Edelman, 2000; Jones & Johnston, 2000; Lauder & Cuthbertson, 1998; Poorman, Webb, & Mastorovich, 2002). Students attend a variety of clinical placements throughout their course. In Australia, these placements can be in a block (e.g. four weeks full-time) or part-time (e.g. shifts spread over a longer period). Students are required to complete 800 hours of clinical practice and demonstrate a competent standard (ANMAC, 2014). In 2011, Blomberg et al. (2014) conducted a quantitative study in

Sweden to describe the experience of stress during clinical placement for 185 UGNS. The study revealed that 43% of UGNS experienced stress during their clinical placement. Furthermore, 57% reported high levels of stress if the clinical placement was in a hospital setting. A higher proportion (71%) reported experiencing a significant amount of stress if hospital placement coincided with their final exams.

Stress among UGNS engaging in clinical practice does not always arise from the clinical environment. A study conducted in Jordan from 2012 to 2013 among 65 UGNS enrolled in psychiatric/mental health nursing aimed to “determine the degrees of stress, the types of stressors and the coping strategies perceived by nursing students during pre- and post-clinical periods” (Al-Zayyat & Al-Gamal, 2014, p. 328). In contrast to other research (Beck, 1995; Brown & Edelman, 2000; Jones & Johnston, 2000; Lauder & Cuthbertson, 1998; Poorman et al., 2002), this study by Al-Zayyat & Al-Gamal (2014) found that stress was more likely to be caused by teachers and nursing staff, and assignments and workloads, than issues related to the clinical environment.

### **2.5.3 Effects of stress on registered nurses and undergraduate nursing students**

Exposure to stress can have negative consequences for the physical and mental health status of an individual, including UGNS (McGrath, Reid, & Boore, 1989; Silver & Glick, 1990). Research indicates that nurses have high rates of physical and mental health issues (Cheung & Yip, 2015) which can be attributed to stress.

#### **2.5.3.1 Physical health problems**

The physical health problems that are more prevalent in the nursing population include coronary vascular disease (CVD) (Byrne & Espnes, 2008; Muecke, 2005; Peate, 2007; Yamashita et al., 2012), fatigue (Callaghan et al., 2000; Muecke, 2005), headache (Callaghan et al., 2000), gastrointestinal upset (Callaghan et al., 2000; Muecke, 2005; Peate, 2007), type 2 diabetes (Yamashita et al., 2012) and respiratory tract infection (Callaghan et al., 2000). Causative factors for these health problems have been identified as shift work, particularly night shift, constant exposure to stress and maladaptive coping mechanisms (Byrne & Espnes, 2008; Callaghan et al., 2000; Muecke, 2005).

The majority of nurses working in clinical areas undertake shift work, including night shift which has been associated with poor health and fatigue for Registered Nurses (RN) (Peate, 2007). There is strong evidence that the regular sleep-wake pattern of the body is disrupted while undertaking shift work (Muecke, 2005). Accumulated sleep deprivation has been identified among nurses (Muecke, 2005; Peate, 2007) and UGNS (Yamashita et al., 2012). A study by Yamashita's et al. (2012) examined the stress and coping styles of 1324 Japanese UGNS. It showed that students experiencing high levels of stress have difficulties with sleeping. Harmful effects of sleep deprivation occur because the body performs its full function in times when a person is usually resting and recovering (Muecke, 2005; Peate, 2007). In the long term, this can lead to systemic health issues for the CVS, gastrointestinal tract and endocrine system (Muecke, 2005; Peate, 2007; Yamashita et al., 2012). In addition, sleep deprivation coupled with a high stress level can lead to fatigue (Muecke, 2005; Peate, 2007). Fatigue can be described as the amount of function a body can perform depending on the amount of sleep it receives at any given time (Muecke, 2005).

Constant exposure to stress can also have an effect on the health of UGNS. Chan et al. (2011) undertook a quantitative study using a survey and cluster analysis of 112 full-time UGNS in Singapore to "determine whether definable profiles exist in a cohort of students with regard to factors associated with their demographic, perceived EI, social support and stress levels" (Chan et al., 2011, p. 3555). The authors found higher levels of stress for clinical placement related stress, self-confidence related stress and financial stress from students from cluster 2 compared to those in cluster 1. Students from cluster 2 were older in age ( $mean = 21.7, SD = 1.2$ ) and in year 3 of their studies while students from cluster 1 were younger ( $mean = 20.4, SD = 1.6$ ) and either in year 1 or 2 in their studies.

### **2.5.3.2 Psychological health problems.**

Psychological health problems, such as depression and/or anxiety, have also been linked to burnout, depression and anxiety, deliberate self-harm, suicidal thoughts and actions (Cheung, Lee, & Yip, 2016; Tully, 2004; Yamashita et al., 2012). For UGNS,

psychological health problems can affect their overall well-being, and academic and clinical performance.

The association between mental distress, social demographic factors and coping was examined in 1324 Japanese nursing students by Yamashita et al. (2012) . Factors such as feeling stress, not eating breakfast every day, having no regular exercise and poor sleep were identified as having a strong correlation with psychological distress. Furthermore, a significantly higher prevalence of distress was found for those who slept <5 hours (<4 hrs = mean  $6.6 \pm SD 3.2$ ; 5 hrs = mean  $5.9 \pm SD 3.1$ ) compared with those who slept 8 hours (8 hrs = mean  $4.7 \pm SD 3.1$ ). Omigbodun et al. (2006) examined psychological morbidity, including stressors of students taking up medical courses. The authors found that some stressors were associated with psychological disorders, including: fear of rapists/males terrorising at night, lack of laboratory equipment, inadequate holiday periods and the way female students dress in class. In addition, several stressors were strongly associated with psychological distress, including: family problems, excessive school work and financial problems. This study also revealed that female participants feared for their personal safety.

Another manifestation of prolonged stress is burnout, a condition which results from constant exposure to a stressful work environment and can eventually cause a person 'to distance oneself emotionally and cognitively from one's work' (Maslach, 2001, p. 403). A quantitative study at a public university in Southern Brazil investigated the relationship between burnout and academic variables among 168 UGNS (Tomaschewski-Barlem et al., 2014). It used an adaptation of the Maslach Burnout Inventory Student Survey, which has three subclasses: Disbelief, Emotional Exhaustion and Professional Effectiveness. The study found that students scored high in the Emotional Exhaustion and Professional Effectiveness subclasses and low in the Disbelief subclass. The overall finding was that students were at risk of developing burnout due to the high score for the emotional exhaustion subscale.

Depression and anxiety can result from excessive stress, and this can lead to suicide (Cheung et al., 2016), and somatic illnesses (Lindop, 1999). This in turn can result in frequent absences from work or university (Wheeler & Riding, 1993) which can lead

to a student withdrawing from the nursing program or developing maladaptive coping strategies such as drug and/or alcohol consumption (Birks et al., 2009; Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013; Shields, 2001). The prevalence of depression, anxiety and stress among 850 nurses was examined in a qualitative study by Cheung and Yip (2015) in Hong Kong. The authors found the following rates of depression (35.8%), anxiety (37.3%) and stress (41.1%). Similarly, an American-based study by Reeve et al. (2013) identified the stress experienced by 107 nursing students in 2011. It revealed high levels of anxiety (95.7%), worry (87.8%) and depression (42.1%) for students.

It has also been suggested that suicide is one of the top five causes of death among nurses (Peipins, Burnett, Alterman, & Lalich, 1997). A study in Queensland, Australia, examined suicide rates between 1990 and 2006 among people engaged in medical and non-medical professions. Data for suicide mortality was obtained from the Queensland Suicide Register and the Australian Bureau of Statistics (ABS) (Andersen, Hawgood, Klieve, Kølves, & De Leo, 2010). Their findings showed that nurses had a higher rate of suicide compared to other professions (Andersen et al., 2010). There has been similar findings in Hong Kong. In a cross-sectional survey, Cheung et al. (2016), explored the prevalence of suicidality among 850 registered nurses. Several factors were found to be associated with suicide contemplation including: femininity, having a partner, being a ward manager or advanced practice nurse, marital disturbance, experience of patients' self-harm, alcohol consumption, depressive symptoms, poor physical health, and poor mental health. Factors associated with suicide attempts included: attachments to a religious belief, chronic illness, have debts, previous self-harm, shift work, and being psychologically distressed (anxiety). Their univariate and multivariate analysis also suggested that severity of depressive symptoms is a strong predictor of suicidality. Their study found that "nurses think about and attempt suicide twice as much as the general population (p. 842)". A similar study in Coimbra, Portugal, identified suicidal behaviour, use of medication, social support and protective factors for 1,130 nursing students (Leal & Santos, 2016). The authors found that 5.2% of respondents had experienced suicidal behaviour in the past. Furthermore, the use of medications such as anxiolytics and antidepressants was common (19.47%) among respondents.

### **2.5.3.3 Effect of stress on academic progress**

Prolonged exposure to stress can lead to attrition, which is defined as 'as the difference between the numbers of students beginning each cohort and the numbers who completed that cohort' (Glossop, 2002, p.377). A study at a university in Wales (UK) aimed to reduce the number of student nurses discontinuing their course (Glossop, 2002). It used school records and exit interviews of former UGNS that withdrew from the course between April 1992 to April 2000 to determine why they withdrew (Glossop, 2002). The author found the following reasons for attrition: family difficulties (17%); failing to meet the course requirements (11%), financial difficulties (11%), health problems (11%) and wrong career choice (11%); low attendance at school or clinical placement (9%); and changed circumstances (5%). Urwin et al. (2010) undertook an integrated review of different academic literature to better understand the causes of student nurse attrition. They identified probable causes of attrition and grouped these into three levels. One was that self-supporting students may not be able to meet some of their course requirements; for example, timely submission of assignments due to work commitment, which adds to stress (Muspratt as cited in Urwin et al., 2010, p. 204). In the UK, O'Donnell (2011) interviewed 15 ex-nursing students who had voluntarily withdrawn from undergraduate study between 2004 and 2007 to identify reasons for leaving the program. The following themes were identified: unrealistic student expectations, i.e. the students expected the programme to be more vocational and social rather than academic; and difficulty adjusting to the academic demands of the course, e.g. difficulties coping with independent study expectations.

Different factors can influence academic performance. Critz and Feagai (2014) conducted a mixed methods study in Hawaii (US) to explore the sociological and demographic profile, lived experiences and academic habits of nursing students. The quantitative component of the study revealed that level 1 students reported time management (32%) to be the main barrier to their academic success, followed by academic difficulties (16%), work (14%), family obligations (13%), financial problems (4%) and distractions at home (3%). These results indicate a connection between stress, poor concentration, and academic performance.

## **2.6 Coping and coping strategies**

Coping and coping strategies are two terms that are commonly associated with stress or stressful situation. Coping is defined as the person's "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding" the person's resources (Lazarus & Folkman, 1984, p. 141). On the other hand, coping strategies refer to 'how individuals manage the demand of stressful events' (Montes-Berges & Augusto, 2007, p. 2). An individual's coping strategy is therefore contextual, whereby it moves through a continuous process of appraising and re-appraising the relationship between oneself and the environment (Lazarus & Folkman, 1984). High levels of stress can lead to a variety of negative health and academic consequences for UGNS. Specific strategies have been identified to lower and manage stress (Montes-Berges & Augusto, 2007). Individuals use both positive and negative strategies to deal with stress; the most common include: academic and counselling support; social and family support; stress management; and EI (Montes-Berges & Augusto, 2007).

### **2.6.1 Academic and/or counselling support**

Stress experienced by UGNS can be caused by study-related or interpersonal issues. Accessing academic and counselling support offered by universities to students can be helpful in managing stress. A study in Iran using a quasi-experimental design aimed to investigate the effect of a supportive counselling program (SCP) among 60 midwifery and UGNS with poor academic performance during a three month period in 2008 and 2009 (Jannati, Khaki, O Sadat Samadi Sangtarashani, Peyrovi, & Amiri Nojadedh, 2012, p. 117). Participants were divided into two groups: the intervention group attended the SCP, and the control group did not attend the SCP. The study found an improvement in academic grades for students in the intervention group. Similarly, a study in the UK measured the psychological effects of structured tutorial support on the level of stress and self-esteem for 50 UGNS, to ascertain its influence on cognitive coping (Gammon & Morgan-Samuel, 2005). The study showed a decrease in stress levels among 25 participants in the experimental group after receiving structured tutorial support for an academic year, compared to the students in the control group.

### **2.6.2 Social and/or family support**

Support networks assist individuals in difficult times. For nurses (Callaghan et al., 2000) and UGNS (Steele et al., 2005), talking to their colleagues and/or classmates who are going through similar circumstances is often helpful. A qualitative study in Scotland (UK) aimed to explore the problems encountered by eight mature-aged UGNS and how they used coping strategies (Steele et al., 2005). The authors found that financial difficulties and re-entry into tertiary education were the main concerns. Students reported that support networks, prioritising and organising, and positive expectations and attitudes for the future, assisted them in coping with problems associated with their study. A qualitative study describing the experience of fourteen UGNS in the final year of the nursing program and how they coped and met the demands of the undergraduate clinical program (Chapman & Orb, 2001), found that “talking things over” and “student grapevine” were the two most useful strategies the participants utilised when coping with the program’s demands (Chapman & Orb, 2001). Other strategies included determination to finish the program, “playing the game: don’t rock the boat”, and “only doing what you have to do” (Chapman & Orb, 2001).

The coping strategies of 150 Hong Kong based Chinese nurses when dealing with stress were examined by Callaghan et al. (2000). The study identified that respondents utilised various coping strategies including: support from other people (38%), cognitive management (19.3%), leisure activities (17.3%), resting and sleeping (9%), and spirituality (4.6%). A quantitative study by Jimenez-Jimenez et al. (2013) of 357 first year UGNS in Spain in 2008-2009 aimed to identify differences in coping strategies of novice and experienced UGNS. The authors found that the most commonly utilised coping mechanism was social support, especially during difficult periods of clinical placement.

### **2.6.3 Stress management**

Nurses and UGNS have reported the benefits of coping strategies in dealing with stress (Folkman & Lazarus, 1980; Gibbons, Dempster, & Moutray, 2011; Montes-Berges & Augusto, 2007; Tully, 2004). These can be divided into two types: problem-based and emotion-based (Folkman & Lazarus, 1980; Gibbons et al., 2011; Hamill, 1995), and are

used depending on the situation and severity of the stress felt by the individual (Folkman & Lazarus, 1980).

The problem-based coping strategy is used by a person in stressful situations by actively looking for ways of solving the problem in a constructive way (Folkman & Lazarus, 1980). In problem-based coping, an individual is said to be able to develop strategies to address the cause of a problem either with the help of a learned skill or from past experience (Folkman & Lazarus, 1980). A quantitative study by Jimenez-Jimenez et al. (2013) found that problem-based coping was utilised by most study participants. Coping mechanisms included having a positive attitude, being optimistic and seeing things objectively, sourcing new information, seeking support and collaborating with others (Jimenez-Jimenez et al., 2013). In another study by Steele (2005), students reported using prioritisation and organisation. Tully (2004) found that students who used problem-focused strategies, such as seeking and following advice or seeking help and talking to others, had lower stress levels compared to those who used emotion-focused strategies.

In contrast to the problem-based coping strategy, avoiding the situation is an emotion based strategy (Folkman & Lazarus, 1980). Some commonly used emotion-based strategies include binge eating, crying, being irritable, socialisation (Hamill, 1995) and alcohol consumption (Hawkins, White, & Morris, 1982; Hingley & Cooper, 1986). Interestingly, in the study by Jimenez-Jimenez et al (Jimenez-Jimenez et al., 2013), second year nursing students reported commonly using avoidance strategies compared to first and third year students who preferred to utilise problem-based strategies; whereas the least emotion-based strategy used by students in Yamashita et al.'s (2012) study was substance abuse.

Substance use is said to be “the inappropriate consumption of medicines, drugs, or other materials including prescription drugs, over-the-counter drugs, street drugs, alcohol and tobacco” (Dziegielewski, 2014, p. 428). Substance use seems to be the most commonly observed form of coping among people experiencing stress, with smoking most commonly used, possibly due to the stress relieving properties of nicotine (Byrne & Mazanov, 2008). A quantitative study in Brazil to evaluate the relationship between

smoking and social, demographic and behavioural factors among students enrolled in various health disciplines including nursing in 2008 (Granville-Garcia et al., 2012) showed a 5.7% prevalence in smoking among the 492 students. The primary reason for smoking was stress (36.8%). Furthermore, 75% of the participants reported drinking alcohol as well as smoking (Granville-Garcia et al., 2012). Interestingly, the prevalence of smoking in this study was lower than alcohol consumption because of awareness campaigns regarding the negative effect of tobacco on the body (Granville-Garcia et al., 2012). Similarly, Tully (2004) found that drinking alcohol and smoking was identified as a common strategy for dealing with high levels of stress by UGNS in Ireland.

## **2.7 Summary**

Nursing is a profession associated with stress. There have been many changes in the preparation of nurses between the 1800s and the present time. Some of these changes have resulted in the removal of privileges such as free education, cheap accommodation, meals, and a regular wage. Meanwhile, nursing has grown and is now highly technical and multifaceted. For UGNS, exposure to the clinical setting, coupled with factors such as competing financial and family demands, and study workload, have placed additional stress on students. UGNS who manage their stress and cope effectively are less likely to have serious health problems. This study measures levels of students' stress and explores the relationships between emotional intelligence, coping strategies and psychological distress. Registered nurses were also included in this chapter to illustrate that both UGNS and registered nurses experience the same amount of stress. .

## **CHAPTER THREE**

### **Design and Methods**

#### **3.1 Introduction**

Students enrolled in the Bachelor of Nursing course at one Australian university in which this study was undertaken may be experiencing high levels of stress which impact on their coping strategies. This study was conducted to better understand the relationship between emotional intelligence (EI), stress, psychological distress, and utilisation of coping strategies for second and third year undergraduate nursing students (UGNS). The chapter discusses the research design, eligibility, recruitment process, and setting. It also discusses the research scales utilised for data collection and their validity and reliability, as well as ethical considerations and strategies to uphold rigour. Finally, the chapter presents data analysis techniques.

#### **3.2 Research Aim, Question and Hypothesis**

In this section the aim of the study, research questions and hypothesis will be presented.

##### **3.2.1 Aim**

The aim of this study was to examine the relationship between EI and stress, psychological distress and coping strategies for UGNS. Participants in this study were students enrolled in the second and third year of a Bachelor of Nursing course at one Australian university.

##### **3.2.2 Research Question**

1. Is there a significant correlation between emotional intelligence and stress, psychological distress and utilisation of coping strategies for undergraduate nursing students?

2. Is there a difference between the levels of emotional intelligence, stress, psychological distress and utilisation of coping strategies for undergraduate nursing students based on individual characteristics?

### **3.3 Research design**

A descriptive correlational design was used in this study. This non-experimental, quantitative research design is used to investigate “phenomena that lend themselves to precise measurement and quantification, often involving a rigorous and controlled design” (Polit & Beck, 2010a, p. 565). Data was systematically collected with the use of valid and reliable instruments (Polit & Beck, 2010a). Often, this is in number form and requires statistical analysis to obtain information (Polit & Beck, 2010a). In using descriptive correlational design, the researcher can obtain numerical data gathered by questionnaires and apply descriptive analysis (Polit, Beck, & Polit, 2008; Rebar & Macnee, 2011). The relationship between two or more variables can then be explored through univariate and multivariate analysis.

Self-report questionnaires, which involve collecting information directly from the participants, was used to collect data in this study (Taylor, Kermode, & Roberts, 2006). A self-report method was considered suitable because of its practicality and ease of interpretation (Paulhus & Vazire, 2007). This topic was considered sensitive and therefore the anonymity related to a de-identified approach was deemed appropriate. Self-report questionnaires are one of the most common quantitative data collection methods, utilising a structured approach and pre-established instruments (Lehane & Savage, 2013).

### **3.4 Setting**

The study took place in one Australian university which provides access to persons from culturally, socially (including in terms of socio economic) and linguistically diverse backgrounds. The bachelor course takes three years to complete for UGNS studying full-time. Clinical placement or professional practice is undertaken alongside academic learning. Learning support is offered to all students throughout the duration of the course, for both academic and clinical aspect of learning. This is achieved through

a one on one session with an academic support lecturer or simulation laboratory that mimics real hospital environment and/or actual hospital scenarios.

### **3.5 Ethical considerations**

Ethics approval was obtained from the academic institution's Human Research Ethics Committee (HREC) (HRE16-045) (Appendix 1). Participation in the study was voluntary and the participants were informed verbally and via Participation Information Form (PIF) (see Appendix 2), that they were free to leave the data collection venue at any time. Submission of the completed questionnaires was deemed as implied consent, hence written consent was therefore not required.

Hard copies of the questionnaire were kept in a locked cupboard, in a locked office of the student researcher's supervisor at the academic institution. These questionnaires will be kept for five years from submission of the thesis before being deleted from electronic devices and shredding of any hard copies. Participants were advised that due to the anonymous nature of data collection, they could not retract their questionnaire after submission. They were also advised that involvement in the study would have no impact on their progress or enrolment in the course.

Additionally, the researchers were not part of the teaching team for the tutorial classes in which data were collected. This step was taken to minimise any possibility that students felt coerced to take part in the study. Also, lecturers teaching the class were asked to leave the room while data were being collected to ensure that participants would not feel obligated to participate in the study for fear of any consequence in relation to their progress in the course.

Participants were also advised of possible risks, including anxiety when completing the questionnaire, and were made aware of the availability of psychological and/or emotional support from university counsellors if required. No identifiers were included in the questionnaire in order to protect students' anonymity.

For taking part in the survey, participants were eligible to enter a raffle draw. Raffle prizes included an iPad mini (first prize), shopping centre gift card valued at \$75

(second prize) and cinema movie experience package (third prize) (two adult movie tickets and refreshments). The participants who wished to enter the raffle were asked to provide a contact mobile phone number. To protect the privacy of the participants, the section where their phone numbers were recorded was detached from the questionnaire prior to commencement of data processing. These were used only for the raffle and were destroyed after the raffle was drawn.

### **3.6 Sample**

A convenient sample participants of second and third year undergraduate students, enrolled in the Bachelor of Nursing course at one Australian university, participated in this study. First year undergraduate nursing students were not included in the study because this research was primarily interested in exploring the students' experience after engagement in academic study for at least 12 months. All participants were at least 18 years of age.

Formal sample size calculations were not performed prior to conducting the study. The sample was limited due to the number of potential participants at the time of data collection, and by the student's candidature period (e.g., < 2 years' full-time study). However, similar research in this field (Chan et al., 2011; Chernomas & Shapiro, 2013; Gurbinder Kaur, Hamidah, Blackman, Wotton, & Belan, 2011; Lo, 2002; Walton, 2002) included cohorts in the range of 112 to 437.

### **3.7 Data collection process**

In this section, steps taken in data collection, including the recruitment procedure and the scales used to gather the data, are explained in detail.

#### **3.7.1 Recruitment**

Data collection occurred over a one-week period in April 2016. The purpose of the study was explained to participants using a PIF. The form was posted on the UGNS' online learning platform two weeks prior to the data collection period. The PIF explained

the purpose of the research, participants' involvement and management of data including privacy and confidentiality.

Over a one-week period, the student researcher attended all second and third year tutorial classes to recruit participants and collect data. At the beginning of each tutorial class, an explanation was given to the students about the purpose of the proposed research, the voluntary nature of their participation, and management of data. During this time, the student researcher also answered all questions regarding the study.

The questionnaire was distributed as a hard copy survey (e.g., paper form). Students who agreed to participate completed the questionnaires during the tutorial class, which on average took 20 minutes to complete. Up to twenty minutes is the recommended period for data collection time for most quantitative research work (Fowler, 2009). On completion, student placed the questionnaires in a sealed box for storage.

### **3.7.2 Data collection forms**

The study utilised questionnaires consisting of a demographic survey (Appendix 3) and four reliable scales namely:

1. The 'Schutte Self-Report Emotional Intelligence Test' (SSEIT) (Appendix 4);
2. The 'Perceived Stress Scale' (PSS) (CSI-SF) (Appendix 7);
3. The 'Kessler Psychological Distress Scale' (Appendix 8); and,
4. The 'Coping Strategy Inventory – Short Form' (K6) (Appendix 5).

Paper-based questionnaires were utilised in this study as it has been shown to generate a higher response rate (Nulty, 2008).

### **3.7.2.1 Demographic survey**

The *demographic survey* sought to gather information about socio-demographics data including gender, age, marital status, number of dependents, employment status (casual/part/fulltime), residential status (Australian citizen, migrant, or international student), country of birth, primary language spoken and year level. Regarding past study, students were asked about any prior educational qualification. Residential status, in this context, pertains to the status of an individual's stay in the country. For instance, the term 'Australian citizen' is usually referring to a natural born Australian or anyone who has acquired citizenship after migration. The term 'migrants' or 'permanent residents' usually pertains to those individuals who are permitted to stay in the country permanently but still remain a citizen of their country of origin, while, 'international students' or 'temporary residents' are those permitted to stay in the country within the validity of their visa, usually for purposes of obtaining a higher education qualification. Additional information was collected regarding their academic performance including self-reported number of units completed, number of units failed and number of units which required supplementary assessment.

### **3.7.2.2 Schutte Self-Report Emotional Intelligence Test**

The *Schutte Self-Report Emotional Intelligence Test (SSEIT)* was used to measure the participants' general emotional intelligence. It is a self-administered scale containing 33-items. Each item is rated on a five-point Likert-type scale ranging from '1' (Strongly Disagree) to '5' (Strongly Agree). The 33 items represented the conceptual model of emotional intelligence (EI) espoused by Salovey and Mayer (1990), namely: 'appraisal and expression of emotion', 'regulation of emotion' and 'utilization of emotion'. The total EI score that can be obtained from *SSEIT* ranges from 33 to 165, which is the sum of all responses in this scale. Scores below 110 are usually considered lower than average EI and scores higher than 138 are usually considered above average EI (Malouff, 2014). The validity and reliability of this scale has been ascertained in several studies showing a Cronbach's alpha of 0.90 (Ciarrochi, Chan, & Bajgar, 2001; Jonker & Vosloo, 2008; Schutte et al., 1998).

### **3.7.2.3 Perceived Stress Scale**

The *Perceived Stress Scale (PSS)* was used to measure the participants' level of perceived stress. It is a 10-item scale that is designed to explore the extent to which the participants found their lives uncontrollable, overloaded or unpredictable over the past 30 days (Cohen, Kamarck, & Mermelstein, 1983). Each item is rated on a five-point Likert-type scale, from '0' (Never) to '4' (Very Often), to indicate how many times the participant had encountered a stressful situation. The total score is achieved by combining the score for each question. Other studies categorise the results into three groups, interpreted as follows: a score of '0 to 13' signifies low stress, '14 to 26' signifies moderate stress and '27 to 40' signifies high perceived stress. This short survey instrument was suitable for the study due to its reliability and shortened version (Cohen et al., 1983). The validity and reliability of this scale has been ascertained in three different studies (Cohen et al., 1983) showing reliability with an alpha coefficient of .84, .85, and .86.

### **3.7.2.4 Kessler Psychological Distress Scale**

The *Kessler Psychological Distress Scale (K6)* was used to measure the participants' level of psychological distress. It is a six-item scale and is the shortened version of the 10-item Kessler Psychological Distress Scale (K10). The scale has shown sensitivity in screening mood and/or anxiety disorders (Furukawa, Kessler, Slade, & Andrews, 2003). Each item rates the participant's feelings in the past month on a five point Likert-type scale ranging from '0' (None of the time) to '4' (All of the time). The total score that can be obtained from *K6* ranges from 0 to 24, where a score of 0 to 12 means that the individual is 'likely to be well'; and, 13 to 24 indicating that an individual is 'likely experiencing psychological distress' (Kessler et al., 2010). The *K6* compared favourably with its predecessor (*K10*) and another scale, General Health Questionnaire (*GHQ-12*), in a study that assessed the performance of self-administered questionnaires (Furukawa et al., 2003). Furthermore, in a study that compared the effectivity of four scales used for screening mental illness, *K6* was found to be the most reliable and the shortest to administer (Kessler et al., 2003). *K6* has a Cronbach coefficient of 0.76 (Arnaud et al., 2010). Again, a short questionnaire was preferable because of the brief

period in which data could be collected and because it would reduce the burden on participants.

### **3.7.2.5 Coping Strategy Inventory – Short Form**

The *Coping Strategy Inventory – Short Form (CSI-SF)* was used to assess the participants' preferred coping strategies and their behaviours during stressful situation (Tobin et al., 1984). This scale is the shortened version of the original 72-item 'Coping Strategies Inventory' (CSI) self-report questionnaire. This scale has eight primary subscales: problem solving, cognitive restructuring, express emotions, social contact, problem avoidance, wishful thinking, self-criticism and social withdrawal; four secondary subscales: problem focused engagement, emotion focused engagement, problem focused disengagement and emotion focused disengagement; and two tertiary subscales: engagement and disengagement. The scale utilised a five-point Likert-type scale ranging from '1' (Not at all) to '5' (Very much) to indicate the degree that participants elicited a specific response. Cronbach's alpha for the eight primary subscales of CSI-SF was determined as  $\alpha = .70$  (Tobin et al., 1984), with a Cronbach's alpha of  $\alpha = .80$  for the four secondary subscales, and  $\alpha = .90$  for the two tertiary subscales. This version of the scale was chosen because of its reliability and shortened design. All eight primary subscales were employed.

The utilisation of these scales allowed the researcher to achieve the study aim, which examine the relationship between EI, stress, psychological distress and utilisation of coping strategies. The quantifiable data gathered from these scales were measured and compared using statistical tools.

## **3.8 Rigour of the study**

Rigour is "a strict process of data collection and analysis as well as a term that reflects the overall quality of that process" in any research (Rebar & Macnee, 2011, p. 153). It is important to ensure that a rigorous process has been followed when conducting research in order to preserve the integrity and quality of the study. Therefore, the following strategies were implemented to uphold rigour: reliable scales; pilot of the scale; and inter-rater reliability.

All research scales used in this study were reliable, having a reported Cronbach's alpha of at least .70 or above. Cronbach's alpha, often called alpha coefficient, is a measure of the internal consistency of a scale and includes a statistical calculation of how closely related the items in a certain scale are to each other and is an indication of a scale's reliability (Rebar & Macnee, 2011). Reliability means that a certain scale is consistent and/or dependable and will give the same result each time it is used, provided the variable does not change significantly (Belli, 2009; Rebar & Macnee, 2011). The normal value of an alpha coefficient ranges from .00 to 1.00 (Polit & Beck, 2010b; Rebar & Macnee, 2011). Scales that have an internal consistency value of greater than .70 are considered to have high reliability (Rebar & Macnee, 2011, p. 163).

To enhance readability, the demographic scale was trialled in a small sample (n=15) of students prior to conducting the main study. Minor amendments were made to improve usability and readability.

To ensure that data entry was consistent and accurate, 10% of the data was checked for accuracy by two researchers (e.g. n=38). Data were entered by one researcher and checked by another researcher for accuracy.

### **3.9 Data Analysis**

Various statistical analyses were utilised to address the research question of this study. In this section, the different approaches to data analysis will be presented including: descriptive analysis, independent samples T-test, One-way Analysis of Variance (ANOVA) and multiple regression analysis.

#### **3.9.1 Descriptive analysis**

Each set of scales was given a unique study identification code. The data was then imported into a Statistical Package for the Social Sciences (SPSS) for analysis (IBM® SPSS® Statistics v23.0). Socio-demographic data was analysed using descriptive statistics including proportion, total numbers, range, mean and standard deviation (SD).

Responses were entered into the database using a numeric code to enable data analysis. Responses to country of birth were coded into continents and primary

languages were reduced to either 'English' or 'Non-English'. Missing or invalid (i.e. two or more options selected for one question) entries were labelled 'Undisclosed'. Information regarding number of units completed, number of units failed and number of units which required supplementary assessment, were not included in the final dataset or analysed, as this data was determined to be unreliable after collection. For instance, in the number of units completed alone, the number of units that a participant should declare if straight from secondary school should be eight and zero if they went straight to second year of their bachelor of nursing course. This was not the case in this cohort.

### **3.10.1.1 Emotional Intelligence Scale**

Responses to each of the 33 questions of the Emotional Intelligence Scale were entered into the database as recorded. Individual responses to questions 5, 28 and 33 were reverse coded before calculating the sum of each case (Schutte et al., 1998). These sums were collated, and then the mean (*M*) and standard deviation (*SD*) were computed and subsequently used for all data analysis involving emotional intelligence. The scale has a strong first factor model scoring system and the method identified by Schutte et al (2009) was used in this study. Since this scale is not used for diagnostic purposes, the ranked version of the scoring system was only used for descriptive purposes to further illustrate the level of emotional intelligence among the study participants. This was achieved either by subtracting or adding the value of the standard deviation to the value of the mean to be able to get the lower or higher end value of the 'average' EI (Malouff, 2014).

### **3.10.1.2 Perceived Stress Scale**

Responses to each of the ten questions of the Perceived Stress Scale were entered into the database as recorded. Responses to questions 4, 5, 7 and 8 were reverse coded before calculating the sum of each case (Cohen et al., 1983). These sums were collated, and the *M* and *SD* were computed and used for analysis. The ranked version of the scoring system for this scale was also used for descriptive purposes only to further illustrate the level of stress experienced by the study participants. This ranked

version of the scoring system originated from another study wherein participants who were highly stressed often scores 20 or more; while least stressed often scored 13 or below (Daubenmier et al., 2011).

### **3.10.1.3 Kessler Psychological Distress Scale**

Responses to each of the six questions of the Kessler Psychological Distress Scale were entered into the database as recorded. Responses to all six questions were reverse coded before calculating each sum. The scores were categorised into two where a score of 0 to 12 means that the individual is *likely to be well*; and, '13 to 24' indicating that an individual is *likely to be suffering from a mental health disorder*. This dichotomous scoring system was also used in the descriptive analysis to further illustrate the level of psychological distress experienced by the second and third year students.

### **3.10.1.4 Coping Strategies Inventory**

Responses to each of the 32 questions of the Coping Strategies Inventory were entered into the database as recorded and grouped into the eight primary subscales (Tobin et al., 1984). A subscale score is derived by adding the scores obtained by each question under the same subscale. For instance, for the subscale 'problem solving', scores for the individual responses to questions 1, 9, 17, 25 were combined as a total score (Tobin et al., 1984) (see Appendix 6 for a complete list describing the combination of scores for each sub-score). These sums were collated, and then the *M* and *SD* were calculated and used for analysis purposes.

## **3.9.2 Independent samples T-test**

*The independent samples T-test* is used to compare the mean scores of two continuous variables or one continuous and one categorical variable with two groups or categories (Pallant, 2016). In this study, it was used to compare the mean score of EI, coping strategies, stress and psychological distress with year level, gender, and ethnicity/cultural variables (Born in Australia, English as Primary Language, English Spoken at Home). These variables were selected because they were categorical variables with two subcategories; thus meeting one of the assumptions for this test.

Other assumptions for this test were also met by the data. Significance (*2-tailed*) was based on .05 level for differences between EI, stress, psychological distress and coping strategies for second and third year students.

### **3.9.3 One-way Analysis of Variance (ANOVA)**

Similar to the *independent samples T-test*, *one-way ANOVA* was used to compare the mean scores in this study. Unlike the *independent samples T-test*, however, *one-way ANOVA* compares the mean of one continuous dependent variable and one independent categorical variable with more than two groups or categories (Pallant, 2016). In this study, it was used to compare the mean scores of emotional intelligence, coping strategies, stress and psychological distress with individual characteristics (e.g., *age, marital status, residential status and employment status*) as a basis of comparison because these categorical variables each had more than two subcategories; thus meeting one of the assumptions for this test. Other assumptions for this test were also met by the data. The significance value (*2-tailed*) was based on .05 and was used as a reference to analyse differences between EI, coping strategies, stress and psychological distress among these groups.

### **3.9.4 Multiple regression analysis**

*Multiple regression analysis* is a type of correlational analysis that uses techniques which enable advanced exploration of the interrelationship between variables (Pallant, 2016). In this study, the type of *multiple regression* analysis used was *Standard Multiple Regression analysis*. Standard multiple regression analysis explained how much unique variance the independent variable contributed to the dependent variable both individually and as a whole model (Pallant, 2016). Overall, multiple regression analysis was used in this study to examine the relationship of EI with stress, psychological distress and the eight primary subscales of coping strategy.

#### **3.10.4.1 Screening of data**

Before interpreting the result generated by SPSS, the data was first screened and checked to ensure that it met all the assumptions for this analysis. This was done by

utilising the data screening tools used in multiple regression analysis that were incorporated in the SPSS v23 package (IBM® SPSS® Statistics v23.0). Assumptions that were checked included multicollinearity, outliers, normality, linearity and homoscedasticity, independence of residuals and outliers. Assumptions for multiple regression analysis were met by the data in this study.

#### **3.10.4.2 Evaluating the model**

In this study, the value listed under *Adjusted R Square* ( $R^2$ ) was used. This was preferred over the *R Square* owing to the number of independent variables used. *Adjusted R Square* correctly adjusted the value of *R Square* for the number of independent variables to provide a better estimate of the sample population value (Pallant, 2016). Both *R Square* and *Adjusted R Square* indicated how much variance of the dependent variable, emotional intelligence, was explained by the independent variables, coping strategies, stress and/or psychological distress.

#### **3.10.4.3 Evaluating the independent variables**

The independent variables were evaluated using the values listed under the *Standardised Coefficients Beta*. This was preferred because the values had already been standardised or converted to the same scale making it easier to compare variables with each other (Pallant, 2016). Furthermore, this also indicates how much an individual variable in a group uniquely contributed to the dependent variable.

### **3.10 Summary**

This chapter described the research design and methods used in the study and ethical procedures to ensure privacy of each participant. It outlined how the rigour of the study ensured that quality sampling and materials were used, including verified questionnaires. The chapter explained the scales used in the study and described all analyses used to scrutinise the data. As the study explores the relationship of EI with coping mechanisms, stress, and psychological distress, a descriptive correlational design was chosen that incorporated quantitative methods in the form of a questionnaire, using reliable and validated scales. The chapter described the measures employed to

ensure the rigour and ethical standards for this research project. Analysis included descriptive techniques, independent samples T-test, and multiple regression analysis. The findings are presented in the next chapter.

## CHAPTER FOUR

### Results

#### 4.1. Introduction

This chapter presents the findings of the study. It describes the socio-demographic characteristics of the participants and the summary statistics for the four outcome measures: emotional intelligence (EI), stress, psychological distress and coping strategies. The chapter concludes with a presentation of the findings from the univariate and multivariate analyses.

#### 4.2. Descriptive Analysis

##### 4.2.1 Sample

Eligible participants for this study were second year (n = 346) and third year (n = 262) undergraduate nursing students (UGNS), enrolled in one Australian university. From this population, a total of 77% (n = 268) of the second year and 42% (n = 109) of the third-year students participated. This represented a 62% response from the second and third year cohorts.

##### 4.2.2 Characteristics of the Sample

The socio-demographic characteristics of the sample participants are shown in Table 1. Most of the participants were female (81.9%) and employed (79.5%). The highest concentration of participants was between 18 to 24 years of age (47%) and single (60.9%), spoke English as their primary language (58.8%) and had dependents (44.4%). Fewer students were born in Australia (41.1%) than outside of Australia (58.9%).

**Table 1.** Socio-demographic characteristics of the participants (N = 377)

	Y2 Students n (%)	Y3 Students n (%)	Total N (%)
<b>Gender (n = 375)</b>			
Female	219 (82.02)	88 (81.48)	307 (81.87)
Male	48 (17.98)	20 (18.52)	68 (18.13)
<b>Age (years) (n= 370)</b>			
18 - 24	123 (46.24)	51 (49.04)	174 (47.03)
25 - 29	65 (24.44)	23 (22.12)	88 (23.78)
≥ 30	78 (29.32)	30 (28.84)	108 (29.19)
<b>Country of Birth (n = 377)</b>			
Australia	110 (41.04)	45 (41.28)	155 (41.11)
Philippines	40 (14.93)	15 (13.76)	55 (14.59)
India	37 (13.81)	18 (16.51)	55 (14.59)
Other	81 (30.22)	31 (28.44)	112 (29.71)
<b>Residential status (n = 376)</b>			
Citizen/Permanent Residents	225 (83.96)	97 (89.81)	322 (85.64)
International student/Temporary visa	43 (16.04)	11 (10.19)	54 (14.36)
<b>Marital status (n = 373)</b>			
Single	161 (60.75)	66 (61.11)	227 (60.86)
Married/De facto	104 (39.25)	42 (38.89)	146 (39.14)
<b>Employment status (n = 366)</b>			
Employed	205 (77.95)	86 (83.50)	291 (79.51)
Unemployed	58 (22.05)	17 (16.50)	75 (20.49)
<b>Primary language (n = 371)</b>			
English	154 (58.56)	64 (59.26)	218 (58.76)
Non-English	109 (41.44)	44 (40.74)	153 (41.24)
<b>Dependents (n = 259)</b>			
Without	103 (54.79)	41 (57.75)	144 (55.60)
With	85 (45.21)	30 (42.25)	115 (44.40)
<b>Highest educational attainment (n = 370)</b>			
Completed Secondary School	76 (29.12)	36 (33.03)	112 (30.27)
Certificate/ Diploma	123 (47.13)	40 (36.70)	163 (44.05)
Bachelor degree	47 (18.01)	22 (20.18)	69 (18.65)
Post Graduate Degree	15 (5.75)	11 (10.09)	26 (7.03)
<b>Entry pathway (n = 356)</b>			
Direct from Secondary School	65 (25.29)	33 (33.33)	98 (27.45)
Certificate 4 <sup>1</sup> , Enrolled Nurse <sup>2</sup>	113 (43.97)	31 (31.31)	145 (40.62)
Returning to study	79 (30.74)	35 (35.35)	114 (31.93)

**Note.** Not all participants provided complete information for all questionnaire items, hence N = 377 was not always achieved.

**1.** Certificate 4 requires six months of vocational studies to complete. **2.** Enrolled Nurse requires 18 to 24 months to complete.

### 4.2.3 Emotional Intelligence

The level of emotional intelligence (EI) was measured using the *Schutte Self-Report Emotional Intelligence Test*. This scale has 33 questions, and the total score that can be obtained ranges from 33 to 165. The minimum score obtained in this study was 60 and the maximum score was 154, with a mean score of 123.87 ( $SD = 12.48$ ) (see Table 2).

**Table 2:** Descriptive data for emotional intelligence, stress, psychological distress and coping strategies

	Range	Minimum	Maximum	Mean	SD
<b>Emotional Intelligence (n=376)</b>	94	60	154	123.87	12.48
<b>Stress (n=377)</b>	36	3	39	20.55	6.06
<b>Psychological distress (n=371)</b>	28	2	30	14.28	4.91
<b>Coping Strategy</b>	100	48	148	102.62	14.35
<b>Engagement Coping Strategies (n=377)</b>					
Problem solving	14	6	20	13.99	3.03
Cognitive restructuring	15	5	20	14.64	3.10
Express emotion	16	4	20	13.46	3.59
Social contact	16	4	20	14.24	3.95
<b>Disengagement Coping Strategies (n=377)</b>					
Problem avoidance	19	1	20	11.18	3.19
Wishful thinking	17	3	20	12.86	3.78
Self-criticism	17	3	20	11.78	4.00
Social withdrawal	18	2	20	10.47	4.05

**Note.** Not all participants provided complete information for all questionnaire items, hence N = 377 was not always achieved

**Table 3.** Distribution of Emotional Intelligence level between second and third year students

	M	SD	Emotional Intelligence		
			Low EI <sup>1</sup>	Ave. EI <sup>2</sup>	Abv. Ave. EI <sup>3</sup>
			n (%)	n (%)	n (%)
<b>Y2<sup>4</sup> Students (n = 267)</b>	123.70	11.80	28 (10.49)	204 (76.40)	35 (13.11)
<b>Y3<sup>5</sup> Students (n = 109)</b>	124.27	14.06	11 (10.09)	85 (77.98)	13 (11.93)
<b>Total</b>	123.87	12.48	39 (10.37)	289 (76.86)	48 (12.77)

**Note.** Not all participants answered this scale, hence N = 377 was not achieved.

The values of *Mean* and *standard deviation* reflected under 'Total' represents the emotional intelligence level of the entire cohort.

**1. Low EI:** Lower than average EI score = 0 to 110; **2. Ave. EI:** Average EI score = 109 to 137; **3. Abv. Ave. EI:** Above average EI score = 138 to 165; **4.** Year 2 students; **5.** Year 3 students

EI scores were further classified into three groups: ‘above average’, ‘average’ and ‘below average’ (see Table 3). The majority of participants (89.7%) had either an ‘average’ or ‘above average’ level of EI. To determine if a statistically significant difference existed between the EI levels across the two-year levels, an independent sample t-test was conducted. No statistically significant difference in EI was found between second year and third year participants ( $t = -.40, p = .693$ ).

#### 4.2.4 Perceived Stress

The *Perceived Stress Scale (PSS)* questionnaire was used to measure the level of perceived stress for the participants. This scale has ten questions, and the total perceived stress score that can be obtained ranges from 0 to 40. The overall mean score for the total cohort of students was 20.55 ( $SD = 6.06$ , range 3 to 39) (see Table 2).

To compare the stress levels experienced by participants, the sum scores were grouped into three categories: ‘low stress’, ‘moderate stress’ and ‘high stress’ (please refer to 3.7.2.3) as shown in Table 4. Analysis showed that most the cohort (88.60%) was experiencing moderate to high levels of stress.

**Table 4.** Distribution of perceived stress level between second and third year participants (N=377)

	<i>M</i>	<i>SD</i>	Stress		
			Low stress <sup>1</sup> n (%)	Moderate stress <sup>2</sup> n (%)	High stress <sup>3</sup> n (%)
<b>Y2<sup>4</sup> Students (n = 268)</b>	20.40	6.01	30 (11.20)	198 (73.90)	40 (14.90)
<b>Y3<sup>5</sup> Students (n= 109)</b>	20.92	6.20	13 (11.90)	72 (66.10)	24 (22.00)
<b>Total</b>	20.55	6.06	43 (11.40)	270 (71.60)	64 (17.00)

**Note.** The values of *Mean* and *standard deviation* reflected under ‘Total’ represents the perceived stress level of the entire cohort.

1. Low stress score = 0 to 13; 2. Moderate stress score = 14 to 26; 3. High stress score = 27 to 40; 4. Year 2 students; 5. Year 3 students

#### 4.2.5 Psychological distress

The Kessler Psychological Distress Scale (K6) is a screening tool for mood and/or anxiety disorders. This scale has six questions, and the total score that can be obtained ranges from 0 to 24. The minimum score obtained in this study was two and the

maximum was 24. The overall mean score for the entire cohort was 14.28 ( $SD = 4.91$ ) (see Table 2). The scores for psychological distress level were grouped into two categories: 'likely to be well' and 'likely experiencing psychological distress'. A person that is 'likely experiencing psychological distress' means they are either at risk of developing a mental illness (e.g., depression and/or anxiety) or they already are manifesting early signs (Kessler et al., 2010). Analysis showed that a total of 98 (26.40%) participants were likely to be well, while 273 (73.60%) were likely to be experiencing psychological distress (see Table 5).

**Table 5.** Distribution of Psychological Distress level between second and third year participants

	<i>M</i>	<i>SD</i>	Psychological distress	
			Likely to be well <sup>1</sup>	Likely exp. Psych. Distress <sup>2</sup>
			n (%)	n (%)
<b>Y2<sup>3</sup> Students (n = 263)</b>	15.59	4.98	67 (25.50)	196 (74.50)
<b>Y3<sup>4</sup> Students (n = 108)</b>	15.34	4.86	31 (28.70)	77 (71.30)
<b>Total</b>	14.28	4.91	98 (26.40)	273 (73.60)

**Note.** A person that is *Likely experiencing Psychological Distress* means either they are at risk of developing mental illness like depression and/or anxiety, or they already are manifesting the earliest sign of it.

The values of *Mean* and *standard deviation* reflected under 'Total' represents the perceived stress level of the entire cohort.

Not all participants completed the scale in its entirety; hence N = 377 was not achieved.

1. Likely to be well score = 0 to 12; and, 2. Likely experiencing Psychological Distress score = 13 to 24;
3. Year 2 students; 4. Year 3 students

#### 4.2.6 Coping strategies

The *Coping Strategy Inventory – Short Form (CSI-SF)* was used to measure the coping strategies utilised by participants. This scale has 32 questions and the minimum score that can be obtained is 48 and the maximum score is 148. The overall mean score for the total cohort of participants was 102.62 ( $SD = 14.35$ ) (see Table 2).

The final score of CSI-SF was grouped into eight categories which corresponded to the eight types of coping strategies (primary subscales), as shown in Table 2. These subscales were: problem solving, cognitive restructuring and express emotion or collectively known as 'engagement coping strategies'; and social contact, problem avoidance, wishful thinking, self-criticism and social withdrawal or collectively known as

‘disengagement coping strategies’. Among the eight subscales, participants were found to have a higher score in cognitive restructuring ( $M = 14.64, SD = 3.10$ ) and social contact ( $M = 14.25, SD = 3.95$ ). In contrast, participants were found to have lower scores for social withdrawal ( $M = 10.47, SD = 4.05$ ) and problem avoidance ( $M = 11.18, SD = 3.19$ ).

**Table 6.** Distribution of Coping Strategies for second and third year participants

	Y2 Students (n=268)		Y3 Students (n=109)		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i> <sup>†</sup>	<i>SD</i> <sup>†</sup>
<b>Coping Strategies</b>	102.63	14.44	102.57	14.2	102.62	14.35
<b>Engagement CS</b>						
Problem Solving	14.10	3.07	13.72	2.91	13.99	3.03
Cognitive Restructuring	14.74	3.13	14.39	3.03	14.64	3.10
Express Emotion	13.26	3.63	13.94	3.44	13.46	3.59
Social Contact	14.27	3.84	14.17	4.22	14.24	3.95
<b>Disengagement CS</b>						
Problem Avoidance	11.17	3.10	11.20	3.42	11.18	3.19
Wishful Thinking	12.86	3.73	12.84	3.91	12.86	3.78
Self-Criticism	11.84	4.04	11.63	3.93	11.78	4.00
Social Withdrawal	10.39	4.01	10.67	4.17	10.47	4.05

**Note.** Coping Strategies (CS) are different sets of actions a person carries out to meet the demand of a stressful situation.

Engagement and Disengagement coping strategies are the two main subclasses in the coping strategy inventory, each of which were further subdivided into four more subclasses.

The values of mean and standard deviation reflected under ‘Total’ represents the value of coping strategy when computed as an entire cohort.

This section presented a descriptive analysis. The results revealed that most participants possessed average to above average levels of EI. Despite this, many participants could be experiencing moderate levels of stress and could also be experiencing psychological distress. Most participants tended to utilise engagement coping strategies, in contrast to disengagement coping strategies.

### 4.3 Comparative Analysis of the Variables

#### 4.3.1 Comparison of Emotional Intelligence

To determine if a significant difference exists in the level of EI based on the participants’ demographic information, comparative analyses were conducted using an

independent samples t-test (e.g. gender, country of birth, primary language and language spoken at home) and one-way analysis of variance (ANOVA) (e.g. age group, marital status, residential status and employment status). A statistically significant difference was found for EI level and primary language spoken at home ( $t = 2.29$ ;  $p = .023$ ) (see Table 7). This indicates that participants who spoke English at home have higher EI levels compared to participants who do not spoke English at home. Other demographic variables were also compared using t-test and ANOVA; however, no statistically significant differences were found.

**Table 7.** Comparison in the level of Emotional Intelligence based on demographic characteristics of the participants.

	Variables	<i>t</i>	<i>p</i>	<i>d</i>
<b>Emotional Intelligence</b>	Language Spoken at Home <sup>1</sup>	2.29	.023*	.24

**Note.** The participants' demographic data was used as a basis of comparison for emotional intelligence

The variable, language spoken at home, was tested using *t-test (t)*, with Cohen's *d (d)* for effect size.

1. Language spoken at home was originally a continuous variable. It was converted in to a dichotomous variable so that it could be compared using t-test.

\*  $p = \leq .05$

#### 4.3.2 Comparison of Perceived stress

Further analyses were conducted for perceived stress to establish if there were any differences in the level of stress experienced by participants based on their individual characteristics. A statistically significant difference was found for stress related to gender ( $t = 2.33$ ,  $p = .032$ ), country of birth ( $t = 2.49$ ,  $p = .013$ ), and primary language ( $t = 2.78$ ,  $p = .006$ ) (see Table 8). This indicates that female participants, those who were born in Australia, those who had English as their primary language, and younger participants were more likely to experience higher levels of perceived stress. A statistically significant difference was also noted in the level of stress experienced by participants based on their age group ( $F = 3.12$ ,  $p = .017$ ) and marital status ( $F = 3.68$ ,  $p = .030$ ) (see Table 8). Analysis by ANOVA revealed that younger age and single status were related to higher stress levels.

**Table 8.** Differences in Perceived Stress based on demographic characteristics

Variables		<i>T</i>	<i>p</i>	<i>d</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
<b>Perceived Stress</b>	Gender	2.33	.021*	.32	-	-	-
	Age Group	-	-	-	3.12	.017*	.03
	Marital Status	-	-	-	3.68	.030*	.02
	Country of Birth <sup>1</sup>	2.49	.013*	.26	-	-	-
	Primary Language <sup>1</sup>	2.78	.006**	.29	-	-	-

**Note.** The participants' demographic data was used as a basis of comparison for perceived stress. Gender, country of birth and primary language was tested using t-test (*t*); while, age and marital status was tested using ANOVA (*F*)

Cohen's *d* and partial eta squared ( $\eta_p^2$ ) were used here to indicate effect size. Cohen's *d* was used when comparing means using t-test and partial eta squared was used when comparing ANOVA. Their values were only provided to statistically significant results in this table.

1. Country of birth and primary language was originally a continuous variable. It was converted in to a dichotomous variable so that it could be compared using t-test.

\*  $p \leq .05$ ; \*\*  $p \leq .01$

### 4.3.3 Comparison of Psychological distress

Table 9 presents the results of the additional analyses conducted to establish if there were any differences in psychological distress based on participants' year level or other demographic characteristics. Results of analyses (t-test and ANOVA) showed no statistically significant differences in psychological distress for these variables (see Table 9).

**Table 9.** Differences in Psychological Distress based on demographic characteristics

Variables		<i>t</i>	<i>p</i>	<i>F</i>	<i>p</i>
<b>Psychological Distress</b>	Gender	-.40	.693	-	-
	Age Group	-	-	2.16	.058
	Marital Status	-	-	2.76	.065
	Residential Status	-	-	1.15	.323
	Employment Status	-	-	0.71	.544
	Country of Birth <sup>1</sup>	-.42	.672	-	-
	Primary Language <sup>1</sup>	.04	.970	-	-
	Year Level <sup>1</sup>	.44	.658	-	-
	Language Spoken at Home <sup>1</sup>	.63	.531	-	-

**Note.** The participants' demographic data was used as a basis of comparison for psychological distress.

All variables presented in this table were tested using t-test (*t*) and ANOVA (*F*) and showed no statistically significant results; hence no effect size value is presented.

1. Country of birth, primary language, year level and language spoken at home were originally a continuous variable. It was converted in to a dichotomous variable so that it could be compared using t-test.

#### 4.3.4 Comparison of coping strategies

Further analyses were conducted to compare utilisation of coping strategies based on year level and other demographic data of the participants. Analysis showed that there was a statistically significant difference in the utilisation of coping strategies based on the language spoken at home ( $t = -2.79, p = .006,$ ) (see Table 10). This indicated that participants who preferred to use their non-English native language at home tended to utilise more coping strategies compared to those who spoke English at home. A statistically significant difference was also observed for marital status ( $F = 3.87, p = .022,$ ) of the participants (see Table 10). This indicated that single and married participants utilised more coping strategies compared to those in a de facto relationship. There was also a statistically significant difference found in the residential status ( $F = 4.35, p = .014,$ ) of participants (see Table 10). This indicated that participants who were international students tended to utilise more coping strategies compared to local students.

**Table 10.** Differences in Coping Strategies based on demographic characteristics

	Variables	<i>T</i>	<i>p</i>	<i>d</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
<b>Coping Strategies</b>	Marital Status	-	-	-	3.87	.022*	.02
	Residential Status	-	-	-	4.35	.014*	.02
	Language Spoken at Home <sup>1</sup>	-2.79	.006*	-.29	-	-	-

**Note.** The participants' demographic data was used as a basis of comparison for coping strategy; Marital status and residential status was tested using ANOVA; while language spoken at home was tested using t-test (*t*).

Cohen's *d* and partial eta squared ( $\eta_p^2$ ) were used here to indicate effect size. Cohen's *d* was used when comparing means using t-test and partial eta squared was used when comparing ANOVA.

1. Language spoken at home was originally a continuous variable. It was converted in to a dichotomous variable so that it could be compared using t-test.

Further analysis was also conducted to test if there were differences in the utilisation of coping strategies based on individual characteristics, as shown in Table 11. A statistically significant difference was found for gender related to problem solving ( $t = -2.15, p = .032$ ), social contact ( $t = 2.16, p = .032$ ), self-criticism ( $t = -3.15, p = .002$ ), and social withdrawal coping strategies ( $t = -2.68, p = .008$ ). This indicated that problem solving, self-criticism and social withdrawal coping strategies were more likely to be utilised by male participants compared to female participants.

Statistically significant differences were also found, based on the participants' country of birth, in the utilisation of cognitive restructuring ( $t = -2.60$ ;  $p = .010$ ) and problem avoidance coping strategies ( $t = -3.81$ ,  $p = <.001$ ); and participants' primary language in the utilisation of problem avoidance ( $t = -3.04$ ,  $p = .003$ ) (see Table 11). This indicates that participants born outside Australia and those who utilise English as a second language tend to employ these two coping strategies more often than those born in Australia and those who utilised English as their primary language. A statistically significant difference also existed in the utilisation of problem avoidance ( $t = -4.54$ ,  $p = <.001$ ) and wishful thinking ( $t = -3.36$ ,  $p = .001$ ) based on the participants' language spoken at home (see Table 11). These results suggest that participants who used their non-English native language at home tended to utilise problem avoidance and wishful thinking coping strategies more than their counterparts who used English at home.

A statistically significant difference also existed with the utilisation of cognitive restructuring ( $F = 9.05$ ,  $p = <.001$ ), problem avoidance ( $F = 5.76$ ,  $p = .003$ ) and social withdrawal ( $F = 3.88$ ,  $p = .022$ .) based on marital status (see Table 11). The results suggest that married individuals tended to utilise problem avoidance more than those who identified themselves as single or in de facto relationship. Married or single participants on the other hand tended to utilise cognitive restructuring coping strategy more than those in a de facto relationship. There was also a statistically significant difference in the utilisation of cognitive restructuring based on residential status ( $F = 4.56$ ,  $p = .011$ ). This result suggested that international students were more likely to utilise cognitive restructuring compared to local students. Lastly, a statistically significant difference was noted in the use of the express emotion coping strategy based on the participants' residential status ( $F = 3.49$ ,  $p = .034$ ).

**Table 11.** Comparison of Coping Strategy sub-scales based on demographic characteristics

Coping Strategy Subscales	Variables	<i>T</i>	<i>p</i>	<i>d</i>	<i>F</i>	<i>p</i>	$\eta_p^2$
Problem Solving	Gender	-2.15	.032	-.30	-	-	-
Cognitive Restructuring	Marital Status	-	-	-	9.05	<.001	.05
	Residential Status	-	-	-	4.56	.011	.02
	Country of Birth <sup>1</sup>	-2.60	.010	-.28	-	-	-
	Primary Language <sup>1</sup>	-2.66	.008	-.28	-	-	-
Express Emotion	Residential Status	-	-	-	3.49	.034	.01
Social Contact	Gender	2.16	.032	.29	-	-	-
Problem Avoidance	Marital Status	-	-	-	5.76	.003	.03
	Country of Birth <sup>1</sup>	-3.81	<.001	-.40	-	-	-
	Primary Language <sup>1</sup>	-3.04	.003	-.32	-	-	-
	Language Spoken at Home <sup>1</sup>	-4.54	<.001	-.47	-	-	-
Wishful Thinking	Language Spoken at Home <sup>1</sup>	-3.36	.001	-.36	-	-	-
Self-Criticism	Gender	-3.15	.002	-.44	-	-	-
Social Withdrawal	Gender	-2.68	.008	-.37	-	-	-
	Marital Status	-	-	-	3.88	.022	.02

**Note.** The participants' demographic data was used as a basis of comparison for coping strategy

Gender, country of birth and primary language were tested using t-test (**t**); while marital status and residential status were tested using ANOVA (**F**)

Cohen's **d** and partial eta squared ( $\eta_p^2$ ) were used here to indicate effect size. Cohen's **d** was used when comparing means using t-test and partial eta squared was used when comparing ANOVA.

1. Country of birth, primary language, and language spoken at home were originally a continuous variable. It was converted in to a dichotomous variable so that it could be compared using t-test.

This section presented a comparison of EI, stress, distress and coping strategies. The results showed that demographic characteristics of the participants partly influenced their level of EI, perceived stress and coping strategies. For instance, participants who used their native, non-English language at home were more likely to utilise problem avoidance and wishful thinking; while those who spoke English at home tended to have higher EI levels.

#### 4.4. Multiple Regression Analysis

As no statistically significant difference was found in EI levels between the year levels for stress, psychological distress and coping strategies, using the independent

samples t-test, data for the two groups was combined for the *Multiple Regression Analysis*. Preliminary analyses were conducted prior to commencing statistical analyses to ensure there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

#### **4.4.1 Emotional intelligence and engagement coping strategies**

The relationship between EI and the four engagement coping strategies (problem solving, cognitive restructuring, express emotion and, social contact) was analysed using Pearson's Product-moment correlation and is presented in Table 12. This analysis revealed a statistically significant positive relationship between EI and the four engagement coping strategies. Among the four coping strategies, cognitive restructuring was found to have the strongest relationship with EI ( $r = .52, p = <.001$ ), followed by problem solving ( $r = .47, p = <.001$ ). Further analysis using multiple regression revealed that the four engagement coping strategies explained 32.6% ( $F(4, 369) = 46.05, p = <.001$ ) of the variance in EI, with cognitive restructuring having the highest standardised coefficient beta value of .32 ( $p = <.001$ ). This finding suggests that participants with higher EI levels are more likely to utilise effective coping strategies (e.g., cognitive restructuring, problem solving).

**Table 12.** Multiple regression analysis for engagement coping strategies as a predictor of emotional intelligence

Variables	Correlations <sup>1</sup>					Coefficients		
	El	Prob. Sol.	Cog. Res.	Exp. Emo.	Soc. Con.	Unstandardized B	SE	Standardized Beta
El <sup>2</sup>	1					83.44	3.05	
Prob. Sol. <sup>3</sup>	.47**	1				.79**	.24	.19
Cog. Res. <sup>4</sup>	.52**	.68*	1			1.30**	.24	.32
Exp. Emo. <sup>5</sup>	.35**	.30*	.34*	1		.40*	.20	.12
Soc. Cont. <sup>6</sup>	.33**	.28*	.31*	.65*	1	.34	.18	.11
<i>Mean</i>	123.91	14.01	14.67	13.50	14.21	<i>Adj. R sq.</i> = .33		
<i>SD</i>	12.50	3.00	3.08	3.56	3.95	<i>F for Adj. R sq.</i> = 46.05 <i>p</i> = <.001		

**Note.** The Pearson's correlation was used to test the relationship between EI and engagement coping strategies and utilised a one-tailed test.

*p* value for R squared or adjusted R squared was two-tailed.

**1. Correlations:** Pearson's Product- moment Correlation; **2. El:** Emotional Intelligence; **3. Prob. Sol.:** Problem Solving; **4. Cog. Res.:** Cognitive Restructuring; **5. Exp. Emo.:** Express Emotion; **6. Soc. Cont.:** Social Contact; \**p* ≤ 0.05; \*\* *p* ≤ 0.01

#### 4.4.2 Emotional intelligence and disengagement coping strategies

The four disengagement coping strategies (problem avoidance, wishful thinking, self-criticism and social withdrawal) are presented in Table 13. Pearson's correlation analysis showed a statistically significant negative relationship between EI and the four disengagement coping strategies. Among the four strategies, self-criticism had the strongest correlation with EI ( $r = -.18, p = <.001$ ), while the weakest correlation was found for problem avoidance ( $r = -.09, p = .048$ ). Further analysis using multiple regression showed that disengagement coping strategies explained 6.2% ( $F(4, 371) = 7.19, p = <.001$ ) of the variance for EI. Among the four disengagement coping strategies, only social withdrawal was found to have a statistically significant relationship with EI, with a standardised coefficient beta value of  $-.25 (p = <.001)$  (see Table 13). This indicates that participants with higher EI levels are less likely to utilise ineffective coping strategies, such as social withdrawal.

**Table 13.** Multiple regression analysis for disengagement coping strategies as a predictor of emotional intelligence

Variables	Correlations <sup>1</sup>					Coefficients		
	EI	Prob. Avoid.	Wish Think	Self-Crit.	Soc. With.	Unstandardized B	SE	Standardized Beta
EI <sup>2</sup>	1					132.75	2.75	
Prob. Avoid. <sup>3</sup>	-.09*	1				-.05	.22	-.01
Wish Think <sup>4</sup>	-.11*	.48	1			.12	.21	.04
Self-Crit. <sup>5</sup>	-.18**	.26	.44	1		-.16	.20	-.05
Soc. With <sup>6</sup>	-.26**	.31	.46	.57	1	-.77**	.20	-.25
<i>Mean</i>	123.87	11.18	12.86	11.77	10.46	<i>Adj. R sq. =</i> .06		
<i>SD</i>	12.48	3.19	3.78	4.00	4.05	<i>F for Adj. R sq. =</i> 7.19		
								<i>p =</i> <.001

**Note.** Pearson's correlation was used to test the relationship between EI and disengagement coping strategies and utilised a one-tailed test.

*p* value for R squared or adjusted R squared was two-tailed.

**1. Correlations:** Pearson's Product-moment Correlation; **2. EI:** Emotional Intelligence; **3. Prob. Avoid.:** Problem Avoidance; **4. Wish Think:** Wishful Thinking; **5. Self-Crit.:** Self-Criticism; **6. Soc. With:** Social Withdrawal; \**p* ≤ 0.05; \*\* *p* ≤ 0.01

#### 4.4.3 Emotional intelligence, perceived stress and psychological distress

The relationship between EI and the two stress factors, stress and psychological distress, was analysed using Pearson's Product-moment correlation. A statistically significant negative correlation was found for EI and stress ( $r = -.22, p = <.001$ ), and a statistically significant positive correlation was found for EI and psychological distress ( $r = .25, p = <.001$ ) (see Table 14). Further analysis using multiple regression showed that stress and psychological distress explained 6.4% ( $F(2, 364) = 13.60, p = <.001$ ) of the variance in EI. However, among the two, only psychological distress was found to be statistically significant with a standardised coefficient beta value of .19 ( $p = .005$ ). This result suggests that participants who had higher levels of EI (average to high) were less stressed; however, they were also more likely to be experiencing psychological distress.

**Table 14.** Multiple regression analysis for stress and psychological distress as a predictor of emotional intelligence

Variables	Correlations			Coefficients		
	EI	Stress	Psych. dist.	B	Standard Error	Beta
EI <sup>1</sup>	1			120.41	5.08	
Stress	-.22**	1		-.20	.14	-.10
Psych. Dist. <sup>2</sup>	.25**	-.66**	1	.49**	.17	.19
Mean	123.91	20.52	15.59			Adj. R <sup>2</sup> = .06**
SD	12.51	6.11	4.85			F for Adj. R <sup>2</sup> = 13.60
						p = <.001

**Note.** The Pearson's correlations in this table was used to test the correlation of EI with the other variables and utilised a one-tailed test.

p value for R squared or adjusted R squared was two-tailed.

1. EI: emotional intelligence; 2. Psych. Dist. Psychological distress

\*\* p ≤ 0.01

#### 4.4 Summary

This chapter presented the findings of the study. The study achieved a 62% response rate from the original target of 608 students. Of those who participated, the majority were female; aged between 18 and 24 years; employed; of single status and born outside of Australia. No statistically significant differences were found between second and third year students for EI, coping strategies, stress and psychological distress levels. Approximately three quarters of the sample reported an average level of EI. However, a large proportion were found to have a moderate or high degree of stress and were likely to be experiencing psychological distress. Engagement coping strategies explained more variance in EI than disengagement coping strategies, stress and psychological distress. In particular, cognitive restructuring contributed the most variance in EI among the ten independent variables, followed by social withdrawal and psychological distress. Further discussion of these findings will be presented in the next chapter.

## **CHAPTER FIVE**

### **Discussion**

#### **5.1 Introduction**

The aim of this research was to examine the relationship between emotional intelligence (EI), stress, psychological distress and coping strategies of undergraduate nursing students (UGNS). No literature was identified that examined the relationship between EI, stress, psychological distress and coping strategies for students enrolled in an undergraduate nursing course, which makes this study unique. The chapter will begin with a discussion of the overall findings. The strengths and limitations of the study will also be discussed, as well as implications and recommendations for practice and future research. The chapter will end with a concluding statement.

#### **5.2 Socio-demographic characteristics of the participants**

Similar with other studies involving UGNS (Beauvais, Brady, O'Shea, & Griffin, 2011; Fernandez et al., 2012; Klainin-Yobas et al., 2014; Yamashita et al., 2012), the participants in this study were predominantly female. This supports historical findings that nursing is a female dominated profession (Russell, 1990). In this study, however, the proportion of male participants was larger than in other studies conducted by Beauvais et al. (2011), Fernandez et al. (2012), Klainin-Yobas et al. (2014), and Yamashita et al. (2012), where the proportion of male participants was smaller than 68 or 18%. This difference can be attributed to the growing interest in the nursing profession by males. This may have affected the results of this study because males, in theory, are known to have lower EI level compared to their female counterparts (Petrides & Furnham, 2000a). However, after controlling for gender, the results remained statistically significant.

The majority (79%) of students who participated in this study reported that they were employed. Additional responsibilities related to employment may increase stress for students, particularly when work commitments compete with academic studies. As

reported in similar studies (e.g., 47%) (Beauvais et al., 2011; Klainin-Yobas et al., 2014; Mahat, 1998; Yamashita et al., 2012), most participants were in the younger age group (between 18 and 24 years old). Younger adults are more likely to experience stress (Yamashita et al., 2012), attributed to lower levels of EI (the highest level is in the 40 to 44-year age group) and/or utilisation of ineffective coping strategies (participants from the 18-24 age group reported a higher tendency to utilise disengagement coping strategy compared to other age groups).

Consistent with Mahat's (1998) and Fernandez's (2012) research, more than 50% of the students who participated in this study reported they were born outside of Australia and more than 50% reported English as their primary language. This differed from Beauvais et al.'s (2011) and Foster et al.'s (2017) findings where the majority of participants were born in the country in which they were studying. This difference in the number of participants born outside of the host country can be attributed to the fact that different areas has different ratios of migrants. For instance, the city where the participants of this study were recruited is considered to be one of the 'melting pot' in the country (Australian Bureau of Statistics, 2014). This could also mean that this may have affected the result of the study because of the diverse cultural background of the participants.

Research indicates that the level of EI improves as one grows older (Goleman, 1998, 2004). It has also been found to have an inverse relationship with stress (Extremera, Fernández-Berrocal, & Durán, 2003; Goleman, 2006; Nikolaou & Tsaousis, 2002). In the current study, the level of EI was not seen to be related to the age of the participants; however, the level of EI was inversely related to the level of stress.

The other characteristics with reported higher EI levels for participants included the following: age (40 to 44-year age group), gender (female), residency (international students) and employment status (full time). Some of these factors (e.g., age, international status, employment) might be explained by Goleman's theory (1998) which states that EI is a skill that develops as individuals progress in life. Goleman (1998) also explained that the EI framework has competencies or domains. In the case of international students and those working full-time, living in another country and paid

employment might have helped the further development of their EI by being exposed to different cultures and interacting with people.

### **5.3 Emotional intelligence in the nursing profession**

Emotional intelligence is critical in the nursing profession because it enables an individual “to monitor their own and others’ feelings and emotions, to discriminate among them and to use the information to guide their thinking actions” (Salovey, Peter & Mayer, 1990, p. 189). The current study found that approximately three quarters of the sample had average levels of EI. This is comparable to the findings of Beauvais et al. (2011) who also found that participants had average levels of EI. It is desirable for nurses and UGNS to have higher EI, as this can help them engage with patients, patients’ carers and family members, as well as with their colleagues (Fernandez et al., 2012; Foster, McCloughen, Delgado, Kefalas, & Harkness, 2015; Shanta & Connolly, 2013) especially in stressful situations. In a clinical setting for instance, a nurse who’s aware of their own emotion and those of the others, will be able to manage a situation calmly and more effectively (Cherniss & Adler, 2000; Salovey, Peter & Mayer, 1990). They can acknowledge and/or validate the frustrations of the patients and their relatives, hence not taking circumstances personally; and, be able to offer support when needed. Furthermore, if they were placed in a difficult position, they can easily express to colleagues or superiors what they truly feel, making it easier to ask for help or find a solution to a problem (Salovey, Peter & Mayer, 1990).

In previous research, high levels of EI have been found to be associated with fewer symptoms of stress and/or burnout (Ciarrochi et al., 2002; Por et al., 2011). These researches also suggested that individuals with high level of EI were more capable of managing emotions emerging from the demands of the course, can easily recognise anxiety and/or anger, and can effectively plan a solution to a problem (Ciarrochi et al., 2002; Por et al., 2011). Furthermore, EI can assist students with adjustment to university life (Schutte et al., 1998), and increase their resilience (Schutte et al., 2002). Interestingly, the students participating in this current study who reported higher levels of EI also reported to be experiencing psychological distress. This finding contradicts that of Salovey et al. (2002) where participants who demonstrated a high level of ‘Emotional

Repair' and 'Clarity' – another factor or subclass of emotional intelligence – were less depressed and/or anxious. A possible explanation for the result in this cohort might be due to an already existing psychological disorder, like depression or anxiety, for some of the participants. Utilisation of ineffective coping strategies can also cause a situation or problems to escalate or accumulate which often leads to stress and/or anxiety (Chang et al., 2006). Another possible explanation would be, since many of the participants came from a non-English speaking background, that they did not fully understand the Kessler Psychological Distress scale. The latter explanation deserves a study of its own as it may affect academic progress for some students.

The relationship and/or influence of EI with stress varies and is dependent on the different types of factors or dimensions of EI (Ciarrochi et al., 2001; Petrides & Furnham, 2000b; Saklofske, Austin, Mastoras, Beaton, & Osborne, 2012). For instance, nurses with low 'emotional clarity' are more likely to experience stress when 'they do not get enough support', while those with high emotional clarity are more likely to get stressed when they relieve someone from another department due to short-staffing (Landa et al., 2008). Landa et al. (2008) also found that nurses who scored low on the EI dimension 'attention to emotions' were more likely to have higher pain threshold and/or tolerance. However, these factors or dimensions of EI were explored using a different scale from the one used in this study. The current study, on the other hand, revealed that participants were less likely to experience stress when they had average to high EI levels. This could be attributed to the link between EI and coping strategies in dealing with stress, as partly explained in the study by Klainin-Yobas (2014) and partly explained in the current study. In the Klainin-Yobas (2014) study, participants who utilised effective coping strategies reported being less stressed compared to those who utilised ineffective coping strategies. In the current study, participants with average to above average EI levels reported employing effective coping strategies more frequently. Combined, these two studies support the notion that high levels of EI lead to the utilisation of effective coping strategies in dealing with stress. Another explanation, already discussed earlier, was that an emotionally intelligent person can easily detect changes in their emotional state enabling them to deal with the problem at its earliest onset or seek help if required (Salovey, Peter & Mayer, 1990).

There have been attempts to enhance EI for nurses. One study found that the level of EI can be improved through life skills training in the fields of problem-solving, stress management, time management, self-awareness, emotion management, determination and interpersonal communication (Lolaty et al., 2012). Por et al. (2011) also found that EI was strongly correlated to educational background, perceived nursing competency and age. In addition, some nursing performances measured by nursing performance subscales have also been associated with EI namely: teaching and collaboration; planning and evaluation; interpersonal relations and communication; and professional development (Beauvais et al., 2011).\*

#### **5.4 Perceived stress and nursing students**

Stress has been described as a “particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p. 19). With stress, there is always a demand for the body to adapt and re-establish its normal function regardless of the cause of the demand, making stress more of a type of response rather than a stimulus (Selye, 1973). Part of an individual’s response to high levels of stress may include physical illness, social behaviour symptoms and emotional symptoms among nursing students (Singh et al., 2011). In the current study, a large proportion of the participants were found to be experiencing moderate amounts of stress. This finding is congruent with that of Chernomas & Shapiro’s (2013) study of nursing students who demonstrated extreme levels of depression, anxiety and stress.

Stress levels for participants in this current study may have been influenced by impending assessments, due within a month of data collection. Also, some of the students were engaged in professional practice units at the time of the study. These factors have been shown to enhance anxiety and stress for students enrolled in undergraduate nursing study (Al-Zayyat & Al-Gamal, 2014). There may have been other stressors for participants in the study that were not measured. As previously mentioned, a large proportion of students were employed and were from families where English was not the first language. Therefore, competing factors such as employment and family responsibilities may also have increased stress levels for participants in this study.

Nursing students are often stressed by the demands of the course, either in class (Tully, 2004) or clinical settings (Blomberg et al., 2014); by balancing work, school and home demands (Meachin & Webb, 1996; O'Brien et al., 2009); and by personal issues (Lo, 2002). On the other hand, new graduate nurses may experience a lack of confidence in their nursing practice and struggle with nurse-patient ratios (Casey et al., 2004). For nurses in professional practice, workload demand, lack of support and conflict with colleagues are seen to be stressful (Callaghan et al., 2000; Opie et al., 2011). Continuous exposure to stress can lead to study burnout (Rudman & Gustavsson, 2012) which affects the student's learning ability in class, and their preparedness and competency skills after entering professional practice (Rudman & Gustavsson, 2012). Burnout can have an adverse effect on physical and psychological health (Klainin-Yobas et al., 2014); healthy lifestyle and job satisfaction (Chernomas & Shapiro, 2013).

## **5.5 Psychological Distress among nursing students**

Psychological distress is defined as “the unique discomforting, emotional state experienced by an individual in response to a specific stressor or demand that results in harm, either temporary or permanent, to the person” (Ridner, 2004, p. 539). It is characterised by anguish and stress, social withdrawal, somatisation, self-deprecation, irritability, and depression (Massé, 2000). In the current study, three quarters of the participants reported that they were likely to be suffering from psychological distress. This supports the findings of Chernomas and Shapiro (2013) where a quarter of their participants were experiencing extreme levels of depression and anxiety (severe and/or extremely severe form). In addition, in the current study participants who reported to be experiencing low levels of stress also reported to be experiencing psychological distress. This occurrence can be due to factors like an untreated mental condition, a life event that coincided with the stressful time of university life, or utilisation of ineffective coping strategies (Tavsanlı & Celasin, 2014). Furthermore, participants that were sensitive to their own emotion or that of others tend to manifest higher levels of psychological distress like depression and/or anxiety (Ciarrochi et al., 2002).

Psychological distress can also be a result of prolonged exposure to excessive stress (Cheng, Liou, Tsai, & Chang, 2015). When not addressed appropriately, this can

lead to depression and anxiety, deliberate self-harm, and suicidal ideation and actions (Cheung et al., 2016; Tully, 2004; Yamashita et al., 2012). This in turn, can affect the overall well-being and academic and clinical performance of the student nurse (Wheeler & Riding, 1993), and work performance of registered nurses (Roelen et al., 2014).

## **5.6 Coping strategies and how they relate to EI, stress and psychological distress of nursing students**

There are many types of coping strategies that a person can utilise at any given time. In this study, two main groups of coping strategies were evaluated: engagement coping strategies and disengagement coping strategies. Engagement coping strategies are used by a person to actively manage problems in a stressful situation, while disengagement coping strategies enable an individual to actively move away and avoid the problem or stressful situation (Tobin et al., 1989). In this study, more participants preferred to utilise engagement coping strategies than disengagement coping strategies. Among the engagement coping strategies, cognitive restructuring and social contact were the most commonly utilised coping strategies by participants. With cognitive restructuring, the person experiencing stress is able to identify irrational or intrusive thoughts, enabling them to develop a more adaptive way of responding to a situation (Johnco, Wuthrich, & Rapee, 2015).

Female participants in this study tend to have utilised social contact, while their male counterparts tend to have utilised problem solving. Similar studies by Al-Zayyat & Al-Gamal (2014), Fernandez et al. (2012), Jimenez-Jimenez et al. (2013), Lo (2002), and Yamashita, et al. (2012) have found that students prefer to utilise problem solving skills, have positive attitudes, see things objectively, and seek out social support either from friends, family members or professional counsellors. Another study involving Korean nurses, reported that male nurses utilised 'challenging coping strategy' to manage stress experienced in some area of nursing (Lee & Cho, 2016). This was evident for male nurses who were working for more than five years in one area of nursing where the turnover of male nurses was usually high.

Other coping strategies employed by participants of other studies included smoking and alcohol consumption (Granville-Garcia et al., 2012; Tully, 2004) and avoidance strategies (Jimenez-Jimenez et al., 2013). Utilisation of less ineffective coping strategies should be avoided because they can contribute to the development of stress and psychological distress (Chernomas & Shapiro, 2013).

As mentioned earlier in this chapter, EI and coping strategies compliments each other when dealing with stressful situations. Participants in this study who tend to use engagement coping strategies were often those who had supportive networks, who knew what they felt and could manage their emotion at any given time and who had a lot of life experiences. These findings were congruent with the study conducted by Por et al (2011).

## **5.7 Discussion of overall findings**

In this study, some demographic characteristics of the participants were observed to have some influence on their EI and stress levels. For example, females scored a slightly higher level of EI than males. Another interesting finding was that native English speakers scored a higher level of EI than native non-English speakers. This can probably be due to language barrier that non-English speakers might encounter when in a foreign land. They tend to rely on their 'gut instinct', especially in the presence of other people or in public places, to 'decode' the real message behind a person's action or message, or to just simply understand what is happening around them. It would be worthwhile taking a further look into this in future studies.

The current study also found that being born in Australia and a native English speaker, young, female, and single were among the characteristics of the participants who were more susceptible to experiencing stress than the other characteristics. This could be explained by either low level of EI or the utilisation of ineffective coping strategies (Chernomas & Shapiro, 2013; Klainin-Yobas et al., 2014). Result of another study found that participants who migrated to Australia; those on student visas; or, from non-English speaking background (NESB), were more adaptable to changes and/or in culturally diverse environment, compared to their local counterparts who might find

these changes or environment as stressful (Salamonson, Everett, Andrew, Koch, & Davidson, 2007).

This current study found a strong relationship between EI and stress, whereby the level of EI was inversely proportional to the level of stress. Students who participated in the study and reported higher levels of EI, also demonstrated lower stress levels. This finding is consistent with studies by Fernandez (2012) and Birks (2009) that demonstrated the relationship of EI with stress and how EI can help manage or lower stress levels.

In this study, average to above average EI levels were associated with psychological distress, whereby the level of EI was directly proportional to the level of psychological distress. This finding contradicts that of Ciarrochi (2002) and others specialising in the same field of study, where participants with a high level of EI had better control over their psychological health. Both studies used the same scale to measure the level of EI of their respective participants. Ciarrochi (2002), however, utilised the four branches of the scale that originated from a factor analytic study of Petrides and Furnham (2000b) while the current study only utilised the single factor version. This finding is interesting as it is not commonly reported in other studies. This might be brought about by several factors, such as pre-existing or untreated mental condition, utilisation of ineffective coping strategies, or a life event that coincided with the stressful time of university life (Tavsanlı & Celasin, 2014). Participants who were sensitive to their own emotion and/or of others can also present higher levels of psychological distress like depression or anxiety compared to others (Ciarrochi et al., 2002).

Individual demographic characteristics influenced utilisation of coping strategies for participants in the current study. For example, international students reported they were more likely to utilise cognitive restructuring than students who were either Australian citizens or permanent residents. This latter group of participants reported preference for utilisation of disengagement coping strategies. Married students who participated in the current study reported problem avoidance as the commonly utilised coping strategy while social withdrawal was the least preferred. The male student

participants reported that they tended to utilise self-criticism and social withdrawal more than other strategies. This finding supports those of several other studies (Al-Zayyat and Al-Gamal (2014), Gibbons (2010) and Yamashita et al (2012) where participants reported utilisation of ineffective coping strategies, problem avoidance and self-destruction.

The aim of the current study predicted that there is a significant relationship between EI and the four engagement coping strategies. Among the four coping strategies, cognitive restructuring was found to have the strongest relationship with EI, followed by problem solving. This was consistent with the research of Por et al. (2011) who established a positive correlation between EI and perceived stress, subjective wellbeing, coping strategies, nursing competency and academic performance. Their study found that high levels of EI were associated with planful problem solving, positive reappraisal, self-control and seeking social support (Por et al., 2011). Fernandez et al. (2012) also examined the association between EI and learning strategies and their influence on academic performance for first-year accelerated nursing students. They found that students with high levels of EI were more likely to engage in peer learning, seek help and utilise critical thinking (Fernandez et al., 2012) than those with lower levels of EI.

In the study of Por et al. (2011), participants with poor levels of EI often corresponded to the utilisation of escape-avoidance coping strategies. This is consistent with the findings of the current study, whereby participants who reported a low level of EI were more likely to utilise disengagement coping strategies, in particular the problem avoidance coping strategy. In this study, in the cohort of students with high stress levels, utilisation of disengagement coping strategies was also seen to be associated with higher stress levels. This elevated level of stress is particularly evident in participants who utilised wishful thinking and self-criticism coping strategies. In a quantitative study, Lo (2002) followed a cohort of nursing students for three years of a nursing program to investigate their perception of sources of stress. The study found avoidance coping behaviour was significantly associated with stress.

## 5.8 Strengths and Limitations

There is a scarcity of literature on this type of research currently available, therefore making this study unique and its findings very useful. In this section, the strengths and limitations of this study are presented.

### 5.8.1 Strengths

This study had several strengths. An adequate sample (N=377) was achieved, which was 62% of the total cohort of students enrolled in the second or third year of the Bachelor of Nursing course. Similar studies achieved a sample size in the range of 112 to 437 (Chan et al., 2011; Chernomas & Shapiro, 2013; Foster et al., 2017; Gurbinder Kaur et al., 2011; Lo, 2002; Walton, 2002). A large sample size such as in this study has the obvious advantage of contributing more data for the researcher to analyse. A large sample size also minimizes the effects of invalid or unusable data which can jeopardise the reliability and accuracy of findings in studies with smaller sample sizes. At 62%, the second and third year undergraduate nursing students in the Australian university where this study was conducted were well represented.

The study utilised valid, tested and reliable questionnaires including the *Schutte Self-Report Emotional Intelligence Test (SSEIT)*, the *Coping Strategy Inventory – Short Form (CSI-SF)*, *Perceived Stress Scale (PSS)*, and the *Kessler Psychological Distress Scale (K6)*. These scales are established and validated tools, with Cronbach alpha scores of 0.89, .79, .84 and .84 denoting strong construct validity and consistency of the psychometric tools used.

### 5.8.2 Limitations

There were several limitations to this study.

The data were collected towards the end of the first semester in 2016. This timeframe was dictated by the release of the ethics clearance and the amount of time left to collect the data before classes concluded for the first semester. The end of the semester can be a stressful period for students. There is preparation for exams, submission of assignments and competing demands with clinical placement. These

circumstances may have influenced stress and distress levels. It is advisable for any future study of this nature to collect data at a time that does not coincide with assessment in order to avoid stressful periods.

The study surveyed participants on one occasion. As previously mentioned, this may have introduced some bias, in that students may have been experiencing more stress at the time of the study. Moreover, this study only utilised a quantitative research design. There is a lack of deeper exploration of students' opinions about sources of stress related to enrolment in a Bachelor of Nursing course. Future research may utilise qualitative methodologies to examine the UGNS' experience in more depth.

There was a large proportion of missing data. It is unclear why participants did not complete all questions for survey items. They may have felt overwhelmed by the length of the surveys, which had a total of 96 questions and took at least 20 minutes to complete. Another reason may be that participants did not fully understand some of the questions and therefore did not provide a response. Diversity in language was a prominent characteristic of this cohort. More than half of the participants were born outside Australia and almost half came from a non-English speaking background; hence, some participants may not have understood the questions. Future research may consider smaller questionnaires. For example, a purely multiple-choice questionnaire, where all possible answers are already provided for the participant to choose from, may have enhanced completion.

There were fewer participants for the third-year cohort. For added convenience, an online survey is suggested so that students who would like to contribute to the study, but may not be on campus on the day of data collection, could still participate in the study. A large proportion of absences during the data collection period coincided with clinical placements for some students.

Data relating to academic progress of the participants was not analysed. This data was deemed unreliable due to many inconsistencies and therefore was not used. Future studies may collect data from formal university records to obtain accurate data for academic progress.

## 5.9 Implications, recommendation of the findings and conclusion

The benefits of having a high level of EI have already been documented in the past twenty years and these benefits continue to increase. Among these benefits include effective stress management. This study found that although a large proportion of students had average to above average EI levels, many participants still experienced having high levels of stress and psychological distress. While stress has been shown to affect physical and psychological health of nurses and students negatively (Klainin-Yobas et al., 2014), a healthy EI level helps manage stress (Landa et al., 2008), and improve coping strategies (Ciarrochi et al., 2002; Schutte et al., 2002).

Emotional intelligence develops with age; however, it can also be learned through proper training (Goleman, 2004). An example of a training program that can improve an individual's EI was one conducted by Lolaty et al (2012) on two groups of students (refer to 2.3.3). Improving the EI level of UGNS can assist them cope with environmental demands, improve mood and self-esteem in stressful situation (Ciarrochi et al., 2002; Schutte et al., 2002), develop and maintain positive relationships with patients, co-workers, new graduates and fellow student nurses (Fernandez et al., 2012). Emotionally intelligent UGNS will be able to focus on the recognition of people's emotional state which can assist in regulating behaviour and solving problems (Salovey, Peter & Mayer, 1990). By improving or further developing the EI level of UGNS, their leadership and/or management skills will also be developed and will be very useful when they enter the workforce (Bennett & Sawatzky, 2013).

EI level can be a good predictor of academic progress. Studies have shown that students with high EI level exhibits good academic performance (Rankin, 2013). Additionally, an improved EI can also assist in building the individuals' leadership qualities. This quality can assist nursing students while undertaking their studies and when they join the workforce after graduating. This is ideally done by incorporating the necessary skills required to help improve EI in the nursing curriculum (Bellack et al., 2001). By doing this, educational institutions are not only helping their students become empathic, which is an ideal trait of nurses, they are also preparing their students to become good leaders (Rankin, 2013).

Identifying causes of stress and psychological distress for UGNS may lead to the development of strategies to enhance health and psychological well-being, which in turn may enhance academic performance. A good example strategies that can be used to teach stress management among UGNS was presented in the work of Jannati, entitled 'Supportive Counselling Program' (Jannati et al., 2012), the students in the intervention group had improved study outcomes. This program comprised of "problem identification and resolution, planning for the future, monitoring academic progress, applying study skills, concentration while studying, and communication skills" (Jannati et al., 2012, p. 115). The findings of this study suggested a supportive counselling program for students is beneficial, especially for those with poor academic performance.

This study examined the relationship between EI, stress, psychological distress, coping strategies and social demographics of the participants. The majority of participants had an average level of emotional intelligence and were more likely to use engagement coping strategies rather than disengagement coping strategies. Undergraduate nursing students are at risk of experiencing stress in the course of their academic studies, and during professional practice experience. They may also have challenges from within their social context. Stress can adversely affect not only the students' health, but their academic performance.

This study was also able to confirm that a relationship between emotional intelligence, coping strategies, stress and psychological distress exists. Sources of stress and/or psychological distress should be examined in more detail so that strategies can be developed to enhance the students' academic experience. In addition, the identification of stress and distress for student cohorts may provide an opportunity to intervene, and this may positively affect student retention and improve academic performance.

The findings of the study answered the first research question that emotional intelligence is significantly related to stress, psychological distress and the utilisation of coping strategies. The study also addressed the second research question which interrogates the influence of individual background in the level of stress and utilisation of coping strategies. The results reported the strongest relationship between EI and

cognitive restructuring, then problem solving, as coping strategies for stress and psychological distress.

### **5.10 Summary**

The current study examined the relationship between emotional intelligence and stress, psychological distress and coping strategies for undergraduate nursing students. This study found that student participants were experiencing moderate to high level of stress despite having good level of EI and they tended to utilised engagement coping strategies. The study also found that some socio-demographic factors had some influence on the person's level of EI, perception of stress and utilisation of coping strategies. There is a lack of research that has investigated the relationship between EI and coping strategies, stress and psychological distress, and how these factors impact on academic progress for undergraduate students. Further exploration to better understand the interrelationships of EI, stress, psychological distress and coping strategies to help develop students' EI and coping strategies is needed. Inclusion of strategies to enhance EI in the nursing curriculum may be beneficial to UGNS as this can help improve their academic performance and develop leadership skills. This study also found that some socio-demographic factors had some influence on the person's level of EI, perception of stress and utilisation of coping strategies. In Australia, the number of students with a multicultural background and/or on a temporary residency status who are studying in Australia, has been steadily increasing in recent years. Because of this, socio-demographic factors should also be explored as they may also influence the development of EI among individuals, perception of stress, being vocal to experiences of psychological distress and utilisation of coping strategies.

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# APPENDIX 1

## Quest Ethics Notification - Application Process Finalised - Application Approved



quest.noreply@vu.edu.au

Mon 11/04/2016, 12:57 PM

Deb.Kerr@vu.edu.au; Nerissa Asturias; gayelene.boardman@vu.edu.au



Reply all | v

Masters

Dear ASPR DEBRA KERR,

Your ethics application has been formally reviewed and finalised.

- > Application ID: HRE16-045
- > Chief Investigator: ASPR DEBRA KERR
- > Other Investigators: DR GAYELENE BOARDMAN, MISS Nerissa Asturias
- > Application Title: Emotional intelligence and its impact on academic performance for undergraduate nursing students.
- > Form Version: 13-07

The application has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007)' by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the approval date, 11/04/2016.

Continued approval of this research project by the Victoria University Human Research Ethics Committee (VUHREC) is conditional upon the provision of a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at: <http://research.vu.edu.au/hrec.php>.

Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious events or adverse and/or unforeseen events that may affect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that it is the Chief Investigators' responsibility to ensure the research project is conducted in line with the recommendations outlined in the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007)'.

On behalf of the Committee, I wish you all the best for the conduct of the project.

Secretary, Human Research Ethics Committee  
Phone: 9919 4781 or 9919 4461  
Email: [researchethics@vu.edu.au](mailto:researchethics@vu.edu.au)

-----  
This is an automated email from an unattended email address. Do not reply to this address.

## APPENDIX 2

### Participant Information Form



#### INFORMATION TO PARTICIPANTS INVOLVED IN RESEARCH

##### You are invited to participate

---

You are invited to participate in a research project entitled **Emotional intelligence and its impact on academic performance for undergraduate nursing students**.

This project is being conducted by a student researcher, Nerissa Asturias, as part of a Masters by Research study at Victoria University, under the supervision of Associate Professor D Kerr and Dr G Boardman from the College of Health and Biomedicine.

##### Project explanation

---

The aim of the study is to examine the association between emotional intelligence and perceived stress on academic performance for undergraduate nursing students; and, to explore coping mechanisms when dealing with stress and anxiety. There is anecdotal evidence that the current student cohort at Victoria University have high levels of stress and anxiety, and this may be impacting on their academic performance. This survey aims to help the researchers more thoroughly understand the sources of stress and emotional intelligence for this cohort of students. This information may inform the development of strategies in the future to improve the students' experience at VU.

##### What will I be asked to do?

---

You will be asked to voluntarily complete the demographic survey [which includes gender, age, marital status, number of dependents, employment status(permanent/part/casual), residency status (citizen/int'l student), country of birth, languages spoken, study pathway, educational attainment and academic performance], 'Self-Report Emotional Intelligence test', 'Perceived Stress Scale', 'Kessler Psychological Distress Scale' and 'Coping Strategies Inventory' during tutorial time. It is estimated that it will take about 10 to 15 minutes to complete. On completion you will be asked to submit the completed survey into a sealed box. No identifying information will be requested. However, if you wish to be eligible for a prize, you will need to provide your mobile phone number. Completion of the survey and submission into the box will be taken as consent to participate in the study.

##### What will I gain from participating?

---

You may not gain anything from participating in the survey. The information may lead to future developments that could help future students enrolled in the Bachelor of Nursing course at VU.

##### How will the information I give be used?

---

The information collected in this survey will be summarised and reported in a nursing journal, thesis report and conference presentations. It is possible that the information will be used to inform the development of strategies, to be implemented in the future, which can help improve students' capacity to deal with stress and anxiety, which may academic and clinical performance.

The reports and journal articles will no contain identifying information. All reports will be written in a de-identified manner.

### **What are the potential risks of participating in this project?**

---

It is possible that you may feel anxious when you are completing the survey. If you experience anxiety, you may wish to speak with your year coordinator about any issues you have related to your study and stress and anxiety. The year coordinator may refer you to student services for assistance.

### **How will this project be conducted?**

---

You will be asked to voluntarily complete this survey in class time during semester 1. All survey data will be stored in an electronic database for analysis. Hard copy forms will be stored in a locked office at VU. Only the investigators (Kerr, Boardman and Asturias) will have access to the survey forms. The forms do not collect any identifying information.

### **Who is conducting the study?**

---

This study is being conducted by two academic (Debra Kerr and Gayelene Boardman) staff and a student researcher (Nerissa Asturias) in the discipline of Nursing from the College of Health and Biomedicine at Victoria University.

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Any queries about your participation in this project may be directed to the Chief Investigator listed above. If you have any queries or complaints about the way you have been treated, you may contact the Ethics Secretary, Victoria University Human Research Ethics Committee, Office for Research, Victoria University, PO Box 14428, Melbourne, VIC, 8001, email [researchethics@vu.edu.au](mailto:researchethics@vu.edu.au) or phone (03) 9919 4781 or 4461.

## APPENDIX 3

### Demographic Survey

Demographics	
Sex/Gender:	
<input type="checkbox"/> Female	<input type="checkbox"/> Male <input type="checkbox"/> Transgender
Age:	
<input type="checkbox"/> 18 – 24	<input type="checkbox"/> 25 – 29 <input type="checkbox"/> 30 – 34 <input type="checkbox"/> 35 – 39 <input type="checkbox"/> 40 – 44 <input type="checkbox"/> 45 and up
Marital status:	
<input type="checkbox"/> Married	<input type="checkbox"/> Single <input type="checkbox"/> De facto
Number of dependents: _____	
Residency status:	
<input type="checkbox"/> Citizen	<input type="checkbox"/> Permanent resident <input type="checkbox"/> International Student
Employment status:	
<input type="checkbox"/> Casual	<input type="checkbox"/> Part time <input type="checkbox"/> Fulltime <input type="checkbox"/> None
Country of birth: _____	
Primary Language: _____	
Language spoken at home: _____	
Course level:	
<input type="checkbox"/> 2nd year	<input type="checkbox"/> 3rd year
Study pathway:	
<input type="checkbox"/> Direct from year 12	<input type="checkbox"/> Diploma / Advanced Diplomas <input type="checkbox"/> Returning to study
<input type="checkbox"/> Others (please specify) _____	
Highest educational attainment:	
<input type="checkbox"/> Year 12	<input type="checkbox"/> Bachelor
<input type="checkbox"/> Certificate	<input type="checkbox"/> Graduate Certificate / Diploma
<input type="checkbox"/> Diploma	<input type="checkbox"/> Masters / Doctoral
How many units have you completed? _____	
How many units have you failed, if any? _____	
How many units were you required to submit a supplementary assessment to pass the unit, if any? _____	

## APPENDIX 4

### Emotional Intelligence Scale

#### Emotional Intelligence Scale

**Instructions:** Indicate the extent to which each item applies to you using the following scale:

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1) I know when to speak about my personal problems to others.	<input type="checkbox"/>				
2) When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	<input type="checkbox"/>				
3) I expect that I will do well on most things I try.	<input type="checkbox"/>				
4) Other people find it easy to confide in me.	<input type="checkbox"/>				
5) I find it hard to understand the nonverbal messages of other people.	<input type="checkbox"/>				
6) Some of the major events of my life have led me to re-evaluate what is important and not important.	<input type="checkbox"/>				
7) When my mood changes, I see new possibilities.	<input type="checkbox"/>				
8) Emotions are some of the things that make my life worth living.	<input type="checkbox"/>				
9) I am aware of my emotions as I experience them.	<input type="checkbox"/>				
10) I expect good things to happen.	<input type="checkbox"/>				
11) I like to share my emotions with others.	<input type="checkbox"/>				
12) When I experience a positive emotion, I know how to make it last.	<input type="checkbox"/>				
13) I arrange events others enjoy.	<input type="checkbox"/>				
14) I seek out activities that make me happy.	<input type="checkbox"/>				
15) I am aware of the nonverbal messages I send to others.	<input type="checkbox"/>				
16) I present myself in a way that makes a good impression on others.	<input type="checkbox"/>				
17) When I am in a positive mood, solving problems is easy for me.	<input type="checkbox"/>				
18) By looking at their facial expressions, I recognize the emotions people are experiencing.	<input type="checkbox"/>				
19) I know why my emotions change.	<input type="checkbox"/>				
20) When I am in a positive mood, I am able to come up with new ideas.	<input type="checkbox"/>				
21) I have control over my emotions.	<input type="checkbox"/>				
22) I easily recognize my emotions as I experience them.	<input type="checkbox"/>				
23) I motivate myself by imagining a good outcome to tasks I take on.	<input type="checkbox"/>				
24) I compliment others when they have done something well.	<input type="checkbox"/>				
25) I am aware of the nonverbal messages other people send.	<input type="checkbox"/>				
26) When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.	<input type="checkbox"/>				
27) When I feel a change in emotions, I tend to come up with new ideas.	<input type="checkbox"/>				
28) When I am faced with a challenge, I give up because I believe I will fail.	<input type="checkbox"/>				
29) I know what other people are feeling just by looking at them.	<input type="checkbox"/>				
30) I help other people feel better when they are down.	<input type="checkbox"/>				
31) I use good moods to help myself keep trying in the face of obstacles.	<input type="checkbox"/>				
32) I can tell how people are feeling by listening to the tone of their voice.	<input type="checkbox"/>				
33) It is difficult for me to understand why people feel the way they do.	<input type="checkbox"/>				

Source: Salovey, N. S., Sluyter, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dickerson, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25, 167-177.

## APPENDIX 5

### Coping Strategy Inventory, Short-Form (CSI-S) Scale

#### Coping Strategies Inventory – Short Form

Take a few moments and think about an event or situation that has been very stressful for you during the month. By stressful I mean a situation that was troubling you, either because it made you feel bad or because it took effort to deal with it. It might have been with your family, with school, with your job, or with your friends.

With your chosen event in mind, read each item below and determine the extent to which you used it in handling your chosen event.

Strategies	Not at all	A little	Some-what	Much	Very much
1) I worked on solving the problems in the situation.	<input type="checkbox"/>				
2) I looked for the silver lining, so to speak; I tried to look on the bright side of things.	<input type="checkbox"/>				
3) I let out my feelings to reduce stress.	<input type="checkbox"/>				
4) I found somebody who was a good listener.	<input type="checkbox"/>				
5) I went along as if nothing is happening.	<input type="checkbox"/>				
6) I hoped a miracle would happen	<input type="checkbox"/>				
7) I realized that I was personally responsible for my difficulties and really lectured myself.	<input type="checkbox"/>				
8) I spent more time alone.	<input type="checkbox"/>				
9) I made a plan of action and followed it.	<input type="checkbox"/>				
10) I looked at things in a different light and tried to make the best of what was available.	<input type="checkbox"/>				
11) I let my feelings out somehow.	<input type="checkbox"/>				
12) I talked to someone about how I was feeling.	<input type="checkbox"/>				
13) I tried to forget the whole thing.	<input type="checkbox"/>				
14) I wished that the situation would go away or somehow be over with.	<input type="checkbox"/>				
15) I blamed myself.	<input type="checkbox"/>				
16) I avoided my family and friends.	<input type="checkbox"/>				
17) I tackled the problem head on.	<input type="checkbox"/>				
18) I asked myself what was really important, and discovered that things weren't so bad after all.	<input type="checkbox"/>				
19) I let my emotions out.	<input type="checkbox"/>				
20) I talked to someone that I was very close to.	<input type="checkbox"/>				
21) I didn't let it get to me; I refused to think about it too much.	<input type="checkbox"/>				
22) I wished that the situation had never started.	<input type="checkbox"/>				
23) I criticized myself for what happened.	<input type="checkbox"/>				
24) I avoided being with people.	<input type="checkbox"/>				
25) I knew what had to be done, so I doubled my efforts and tried harder to make things work.	<input type="checkbox"/>				
26) I convinced myself that things aren't quite as bad as they seem	<input type="checkbox"/>				
27) I got in touch with my feelings and just let them go.	<input type="checkbox"/>				
28) I asked a friend or a relative I respect for advice.	<input type="checkbox"/>				
29) I avoided thinking or doing anything about the situation.	<input type="checkbox"/>				
30) I hoped that if I waited long enough, things would turn out OK.	<input type="checkbox"/>				
31) Since what happened was my fault, I really chewed myself out.	<input type="checkbox"/>				
32) I spent some time by myself.	<input type="checkbox"/>				

Source: Tobin, D. L., Holroyd, K., & Reynolds, R. (1984). Coping strategies inventory. *CSI Manual*.

## APPENDIX 6

### Scoring Information for CSI-SF

#### SCORING INFORMATION FOR THE CSI-S

##### Primary Subscale Items (alpha average .70)

Problem Solving = 1, 9, 17, 25

Cognitive Restructuring = 2, 10, 18, 26

Express Emotions = 3, 11, 19, 27

Social Contact = 4, 12, 20, 28

Problem Avoidance = 5, 13, 21, 29

Wishful Thinking = 6, 14, 22, 30

Self Criticism = 7, 15, 23, 31

Social Withdrawal = 8, 16, 24, 32

To calculate the secondary and tertiary subscale scores, simply add together the primary scales that make up that subscale (see users manual).

##### Secondary Subscale Items (alpha average .80)

Problem Focused Engagement = Problem-Solving + Cognitive-Restructuring

Emotion Focused Engagement = Social Contact + Express Emotions

Problem Focused Disengagement = Problem Avoidance + Wishful-Thinking

Emotion Focused Disengagement = Social-Withdrawal +Self Criticism

##### Tertiary Subscale Items (alpha average .90)

Engagement = Problem Focused Engagement + Emotion Focused Engagement

Disengagement = Problem Focused Disengagement + Emotion Focused Disengagement

# APPENDIX 7

## Perceived Stress Scale

### Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

Feelings and/or thoughts	Never 0	Almost Never 1	Some- times 2	Fairly Often 3	Very Often 4
1. In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="checkbox"/>				
2. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="checkbox"/>				
3. In the last month, how often have you felt nervous and "stressed"?	<input type="checkbox"/>				
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="checkbox"/>				
5. In the last month, how often have you felt that things were going your way?	<input type="checkbox"/>				
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	<input type="checkbox"/>				
7. In the last month, how often have you been able to control irritations in your life?	<input type="checkbox"/>				
8. In the last month, how often have you felt that you were on top of things?	<input type="checkbox"/>				
9. In the last month, how often have you been angered because of things that were outside of your control?	<input type="checkbox"/>				
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="checkbox"/>				

Source: The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.

Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Cokano, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

## APPENDIX 8

### Kessler Psychological Distress Scale (K6)

#### The Kessler 6 Scale (K6)

The following questions ask about how you have been feeling during the past 30 days. For each question, please tick the box that best describes how often you had this feeling.

During the past 30 days, about how often did you feel ...	All of the time	Most of the time	Some of the time	A little of the time	None of the time
...nervous?	<input type="checkbox"/>				
...hopeless?	<input type="checkbox"/>				
...restless or fidgety	<input type="checkbox"/>				
...that everything was an effort?	<input type="checkbox"/>				
...so depressed that nothing could cheer you up?	<input type="checkbox"/>				
...worthless?	<input type="checkbox"/>				

Source: Kessler, R.C., Green, J.G., Gruber, M.J., Sampson, N.A., Bromet, E., Cuitan, M., Furukawa, T.A., Gursic, O., Jinbay, H., Hu, C., Lara, C., Lee, S., Mneinneh, Z., Myer, L., Oakley-Browne, M., Posada-Villa, J., Sagar, R., Viana, M.C., & Zaslavsky, A.M. (2010). Screening for serious mental illness in the general population with the K6 screening scale: results from the WHO World Mental Health (WMH) survey initiative. *International Journal of Methods in Psychiatric Research*, 19, 4-22. doi: 10.1002/mpr.310