2017

The modification of two tools to measure emotional intelligence in undergraduate student nurses: A mixed method pilot study

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Chapter Six

Discussion, Conclusion and Recommendations

Introduction

This chapter concludes the pilot study report. It presents significant findings from the study by juxtaposing them with pertinent literature and offers explanation and interpretation. The synthesis commences with a reiteration of the study’s purpose and includes a narrative on the research questions. The chapter concludes with the limitations of the study, together with recommendations for further studies and nursing education.

Purpose Statement

The intent of this study was to investigate a resource, which could assist student nurses to cope with their university studies. As a facilitator of Student Practicum at the School of Nursing and Midwifery at the University of Notre Dame Australia (ND), it has become increasingly evident that students were having significant difficulties in managing not only their practicum, but also their home and academic life. In order to assist students, as well as to decrease their attrition rates, it was proposed that understanding and practising emotional intelligence (EI) may be beneficial. This study aimed to investigate appropriate tools to measure EI and to further test their appropriateness by administering them, pre-and post-educational intervention, the aim being at enhance EI in a group of student nurses.

Identification of Tools

It was notable that, following an in-depth literature review, several tools that measured EI were available, but a lack of standardisation posed difficulty in finding EI tools appropriate to use with student nurses. Available recruitment tools being designed for the corporate world compounded this problem. By contrast, nursing is a service-oriented profession, based on the individual needs of patients in a variety of
situations, often being life threatening. Furthermore, the findings from this study were not intended for use in the recruitment of students. Consequently, many of the tools were inappropriate and unavailable to the researcher. However, two Australian tools could be modified to use on student nurses: the situational test of emotional management (STEM) and the situational test of emotional understanding (STEU). These tools reflect the Mayer and Salovey ability model of EI and were available to the researcher (MacCann & Roberts, 2008). The Mayer and Salovey ability model fitted the intention of conducting an educational intervention, since it emphasised cognitive components that could be utilised to facilitate learning and also was adaptable to objective measurement.

The STEU and the STEM have been tested on undergraduate psychology students (MacCann & Roberts, 2008). However, student nurses are uniquely different in their course of studies. They undertake clinical practicums, in addition to academic studies, every semester throughout their three years of study. Thus, the STEU and STEM needed modification and rigorous testing to be deemed appropriate for student nurses.

In order to modify these two tools, it was necessary to follow sequential steps to predict task and contextual performance. Within the embedded mixed method design of this study, the qualitative and quantitative data were collected concurrently, to allow for a greater understanding of the results. The large number of scenarios retained from the original tools indicated that university students experienced many common areas of stress. This finding concurs with other studies that suggest, whereas many factors influence students to withdraw from their studies, stress is a common factor (Arnekrans, 2015; Lee et al., 2010; Morrison & Brenneman, 2016; Stewart et al., 2015; Tinto, 2012; Woosley & Shepler, 2011). The use of Roseman’s (2004) appraisal theory to create responses (with its related veridical scoring system) enabled the scenarios to be altered, to reflect the nursing program, without changing the emotion and their responses.
Number of Participants Within the Phases

This study comprised three Phases: Within Phase One, 24 student nurses were recruited for focus groups, to create nursing scenarios, then a further 11 students were recruited to create responses to the scenarios. To validate the new questionnaires 15 subject matter experts (SMEs) were recruited. Within Phase Two, 20 students were recruited to establish reliability. In Phase Three 12 students were recruited. Thus, a total of 67 students and 15 SMEs were recruited for this research.

Critical Incidents to Create Scenarios

Scenarios used in the STEM and STEU were developed from the participants’ critical incidents identified in focus group discussions. These involved home life, clinical practicum and university studies, all elements that had emerged from the literature review as causing stress. The scenarios were authentic but could be verbalized only by the cohort of third year nursing students participating in the focus groups. Despite the large number of students who initially indicated they were interested in taking part in the educational intervention, only twelve student nurses completed the seminar series, all being over 21 years of age. Many factors impacted on the participants: assignments, mid-term examinations and the need to earn money. Difficulties encountered in attending the intervention were outweighed by perceived future rewards for the 12 participants. This finding correlates with Knowles’s (2005) principle of adult learning which suggests that adults ‘need to know’, often having to weigh up the negative and positive consequences.

Most of the female students who participated in the educational intervention were parents, in contrast with the literature, which suggested that mature aged students with family find it difficult to cope (Hamshire et al., 2013). Whereas participants managed their home-life, they found the practicum stressful. It could be argued that younger students have insufficient life experience compared to mature aged students and have different insights concerning their career aspirations. Prior to the educational intervention, however, all participants indicated the need for strategies that would make a difference to their future indicating a ‘readiness to
learn’. This principle of adult education is associated with needing to know strategies to cope with real-life situations (Knowles et al., 2005).

In terms of lifestyle stresses, it was the loss of time with friends that consistently distressed participants. They conveyed a sense of loss associated with other people’s lack of understanding about the demands of study. However, it was not uncommon for participants to find new friends and establish new relationships, as evidenced in the group discussions.

Some critical incidents presented by the participants caused distress. There appeared to be common links between participants’ distress and incidents of vulnerability. The stated negative experiences are consistent with studies detailing memory and emotion, that is, negative experiences are remembered to protect self (Edo-Gual et al., 2014). Fifty per cent of the critical incidents emanating from focus groups were concerned with clinical practicum and confirmed findings from the literature: students have more difficulty coping in practicum than any other area (J. Cameron et al., 2011; Crombie et al., 2013; Kenny et al., 2016; Kingston, 2008; Urwin et al., 2010).

Many participants’ comments indicated anger towards the university staff in relation to group assignments. This finding could be interpreted as participants’ lack of understanding about processes, or a fear of failure, either way, at the heart of this emotion was the lack of control over the situation. Cognitive theorists view emotion from the individual’s evaluation and interpretation of the event, rather than the event, as determining the resulting emotion (McCarthy et al., 1998; C. A. Smith & Ellsworth, 1985). Viewed from this perspective it was difficult to draw a conclusion without interviewing each student separately. It has been suggested that the individual academic levels students strive to attain may be compromised by group assignments. The critical incidents used reflect the fear of failure and suppression of thoughts and feelings towards others who were perceived as having power over their achievements. Variables such as academic demands are constantly changing the way students appraise situations, and the decisions they make on the strategy they need to cope with stress.
Significantly, students considered the focus group discussions as a final
debrief on their journey through their nursing degree. Straying from the topic may
indicate that the students felt safe to explore issues seemingly unconnected with the
purpose of the focus group. Conversation turned to criticisms and frustrations at
academic processes, as well as being directed at the researcher as a member of the
teaching staff. However, anonymity and confidentiality of responses provided
assurance that participants would not be held accountable for their grievances. They
acknowledged that the facilitator understood their journey through their studies and
appreciated individual difficulties, leading to a greater sharing of issues between
participants within the focus groups.

Some participants felt the journey through the ND system, although stressful,
would make them better nurses, ready to go into the workforce as critical thinkers,
with problem solving skills and more resilience. All participants stated they would
go through the experience again and recommend it to others, reinforcing the notion
that institutional actions of support affect the undergraduate experience and attrition
(Arnekrans, 2015; Lee et al., 2010; Morrison & Brennman, 2016; Stewart et al.,
2015; Tinto, 2012; Woosley & Shepley, 2011).

Rigor to Establish Validity and Reliability of Questionnaires

The developing questionnaires needed to be subjected to quantitative methods to
establish validity and reliability. The initial focus was on validity, rigour of the
researcher’s processes, and auditability of data, to ensure the study was accurate and
credible. By creating a clear and transparent pathway, this study may facilitate future
replication within other disciplines in the university. However, reliability was
tentative due to a small sample. A possible explanation of this problem may be
associated with the perceived instability of the concept EI, as reinforced in the
literature which acknowledged a need to identify sub elements of EI for objective
measurement (Anguiano-Carrasco et al., 2015; Copestake et al., 2013; Grubb &
McDaniel, 2007; Hartman & Grubb, 2011; Libbrecht et al., 2010; Libbrecht &
Lievens, 2012b; Rosete & Ciarrochi, 2005). The ability model of EI describes such
elements: 1. The perception, appraisal and expression of emotion; 2. Emotional
facilitative thinking; 3. Understanding and analysing employing emotional
knowledge, and 4. The conscious regulation of emotion to promote emotional and intellectual growth (Mayer et al., 2008). The researcher as a strategy for facilitating the educational intervention used these elements. A further study may benefit from modification of the model for teaching purposes.

**Educational Intervention to Measure Modified Tools**

The educational intervention was concerned with testing the reliability of the modified STEU and STEM, thereby gauging the subjective outcomes of the participants in terms of their ability to practice EI. It combined Roseman’s Grid of emotional appraisal with Plutchik’s evolutionary model of emotions. Since the measurement of emotions underpinned the STEM and STEU, Roseman’s theory of cognitive appraisal was deemed useful. It suggested a person, to determine the emotion felt, uses a set number of appraisal dimensions. These dimensions include: how much control one has over the event; the perception of the event as either negative or positive; and the possible outcomes in terms of appropriateness of that response (Roseman, 2013; C. A. Smith & Ellsworth, 1985; Tesser, 1990; Tesser, 1990). The appraisal dimensions indicate how a student could interpret a scenario. The researcher observed that Plutchik’s model assisted students to integrate many ideas of emotion and to describe the relations among emotional concepts (Plutchik, 2001).

Despite the systematic process undertaken to establish validity and reliability, prior to the educational intervention, some participants did not respond with the correct emotion, as dictated by Roseman. This may be associated with a limited emotional vocabulary, or the failure to recognize the facial expression of others. A possible explanation is that students were not used to being asked about how they are feeling, thereby indicating their inability to describe and differentiate between emotions. Alternatively, the participants in second semester were either unfamiliar with the scenarios, or had little clinical experience to respond with the correct emotion.

An alternative explanation for the discrepancy in participants’ responses may be that emotion is a personal experience, often a combination of several emotions.
experienced in one situation. Psychoanalysts suggest that introspection is difficult and mixed emotions are not easy to describe in an unequivocal manner (Plutchik, 2001). All theorists agree that there are an infinite number of situations, which elicit a finite number of fundamentally different emotions (Hofmann, 2014; Plutchik, 2001; Roseman et al., 1990a; C. A. Smith & Ellsworth, 1985).

Given that the quantitative analysis was inconclusive, the qualitative analysis did attribute answers to the research questions. During the educational intervention participants demonstrated an increase in their vocabulary, through the listing of emotions as well as group discussions. This reflects Plutchik’s (2001) research, in which subjective feeling states of emotion are usually more ambiguous and obscure than the associated impulses to action.

In regard to emotional management, participants chose the responses that were safe, and avoided confrontation. A possible explanation for this outcome is that participants attempt to please as many people as possible. Many in the focus groups verbalized compliance: ‘do what needs to be done to avoid failure’, their approach being from the negative perspective of avoiding failure. Fear of failure appeared to be a common thread in the discussion groups but may be considered as a motivating force for learning. Knowles suggests that adults are more ‘motivated to learn’ by internal pressures, but can be blocked by such things as a negative self-concept associated with being a student (Knowles et al., 2005). Maintaining a negative outlook may be a factor that contributes to student stress. Future study groups may help identify the source of this negative perception.

Choosing a response that was non-confrontational may also be associated with feelings of not belonging, or participants not understanding their role in the workplace. Studies argue that social acceptance, and a sense of belonging to a team, increases a student’s confidence and competence in-patient care (Blomberg et al., 2014; Gibbons, 2010; Gibbons et al., 2011; Pulido-Martos et al., 2012). Importantly, being accepted and respected by colleagues is identified as related to being able to focus on patient relationships (Andersson et al., 2010; Mohamed et al., 2014; Walker et al., 2014). Within a clinical placement, the student’s relationships with their designated mentor and the mentor’s preparedness to support the student, were identified as major stressors (Alzayyat & Al-Gamal, 2014; Blomberg et al., 2014; J.
Cameron et al., 2011; Gibbons, 2010; Gibbons et al., 2011; Hamshire et al., 2013; Pulido-Martos et al., 2012). Mentors in the workplace have a responsibility to assist students in their learning needs and to create a learning environment. Given these aforementioned issues, students need self-confidence in the way they appraise situations and select an appropriate strategy to cope.

Discrepancies between participants’ scores may indicate a lack of strategy in decision-making and/or a lack of understanding concerning the context of the situation in the scenarios. Alternatively, responses may reflect a lack of strategies in dealing with emotions and situations, causing the answers to appear to be random. It is argued that teaching students strategies on how to gather emotional information may aid in managing emotionally laden or stressful situations.

The problem-based learning (PBL) format was deemed appropriate, as it is learner-centered and may facilitate the enhancement of EI. As participants articulated their thoughts, they made sense of the topic, validating each other and increasing their self-confidence. They also demonstrated a broader view of EI, even though they had difficulty in recognizing the correct emotion in the scenarios. Although they felt angry towards group assignments, they enjoyed the PBL. A possible explanation was the achievable common goal, completed in class time. Moreover, the voluntary homework was undertaken individually, with no collective scoring. This strategy correlates to Knowles’s principle, that adult learners have a need to be seen and treated by others as capable of self-direction (Knowles et al., 2005).

Benefits of the educational intervention include participants identifying strategies to recognize and manage emotions in themselves and others, thereby increasing their confidence and ability in using EI as a strategy to cope with stress. The established a link, between cognitive ability and emotion, impacts on student nurses through their ability to manage stressful situations and regulate emotions. Whilst it may be impossible to change a situation, an individual can appraise it as a learning experience, thereby turning into a positive rather than a negative experience (Gross, 1998; Haines et al., 2016; Quoidbach et al., 2015; Vogt & De Houwer, 2014). This demonstrates a participant’s ability to recognize and monitor the emotions in both self and others and, to facilitate thinking and problem solving.
One of the research questions concerned the strategies that could be taught to students to enhance EI. Whilst one of the limitations of the study was the small number of participants undertaking the educational intervention, their feedback suggested that they felt it was helpful, useable and transferable between the areas of university, home-life and practicum. Strategies used in the educational intervention for example, reflection, relaxation and teaching EI theory, were similar to those listed in other studies (Foster et al., 2015; Goff, 2011; Nooryan et al., 2011; Orak et al., 2016). The researcher used these strategies as they were considered effective in identifying emotions in the participants and in managing such emotions. Furthermore, the inclusion of strategies to anticipate future stress through the redirect of attention, such as Gross’s Social Processing Model (2013), added another dimension to managing stressful situations. Thus, raising self-confidence by empowering students to feel control.

Participants’ emotional vocabulary increased also the ability to identify what emotions they felt under certain circumstances and why they felt that emotion. In terms of the effectiveness of the educational intervention for enhancing students EI, participants commented that they spent time reflecting on the neurophysiology and neuropsychology of their stress response. They also indicated they were beginning to see their own and others stress triggers, by mindful listening and noticing the effects of emotional transference between themselves and others. These findings suggest a beginning ability to understand and manage emotions and emotional behaviour in self and others.

Teaching student nurses how to manage their emotions early in their studies is more likely to facilitate their ability to develop a genuine, authentic and congruent relationship with patients. The major reason for leaving a course of study is the inability to manage the situation, rather than the situation itself (Chernomas & Shapiro, 2013). It is argued that students’ emotional competence enables them to persist with their studies, but further investigation is needed (Tinto, 2012; M. G. Williams, 2010). The link between cognitive ability and emotion impacts on student nurses through their ability to manage stressful situations and regulate emotions. Students, who have not experienced or learnt how to deal with stress, need strategies to cope with stressors inherent in nursing as well as those associated with studying.
(Balk et al., 2013; Bonanno & Burton, 2013; Donoso et al., 2015; Jan & Popescu, 2014; Klainin-Yobas et al., 2014).

It is suggested that enhancement of EI and confidence will create a more resilient student nurse, who can cope in stressful situations at university, home-life and practicum. This study confirms that the practicum is stressful. Significantly, there is a relationship between EI and preparing student nurses for the reality of the clinical environment (Aradilla-Herrero et al., 2014; Augusto Landa et al., 2009; Barkhordari & Rostambeigi, 2013; Beauvais et al., 2011; Bulmer Smith et al., 2009; Cerit & Beser, 2014; Jones-Schenk & Harper, 2014; Montes-Berges & Augusto-Landa, 2014; Por et al., 2011; Shanta & Gargiulo, 2014). It may be concluded that EI will enable students to survive and grow in the clinical setting (Donoso et al., 2015; Montes-Berges & Augusto, 2007; Montes-Berges & Augusto-Landa, 2014).

**Conclusion to Chapter**

The major findings from this study indicated that the STEU/Ng and the STEM/Ng questionnaires were beneficial in determining student nurses’ EI. The study also confirmed that they experienced increased stress during their practicum experience. Although the situations causing stress during the clinical practicum are difficult or even impossible to change, students are able to change their appraisal and attitude towards the stress. Emotional self-awareness together with awareness of how others are feeling are strategies that can enhance the way emotional information is processed, as well as lead to consistency in the appraisal of stressful situations. Thus, emotional intelligence can offer a valuable resource for student nurses when faced with the stresses of undertaking university studies, of which a significant component is the clinical practicum required.

**Limitations of the Study**

- The small sample in the educational intervention may compromise the findings. Conducting a pilot study, however, has the advantage of testing the feasibility of a procedure as well as highlighting misunderstandings or ambiguities.
• The educational intervention was limited by the amount of time allocated to its implementation and by the size of the cohort. Results may have been biased by conducting it during a semester instead of the twelve-week practicum period, this would have given participants time to utilize strategies, discuss their experiences, and problem solve within the group.

• Semester two participants may have had limited experience related to university and practicum.

• The participants were all from the same university.

• Students who volunteered for this study represented highly motivated students and may have provided the impetus for attending the educational intervention.

Recommendations for Future Research and Nursing Education.

Research

• As this was a pilot study it is recommended that it should be replicated using a larger sample group, preferably a longitudinal design enabling measurement of the outcomes of an educational intervention from the commencement to completion of the course.

• As participants in this study represented motivated students, it would be recommended that the intervention be embedded into the curriculum to compel students to attend and remove the bias from the sample.

Nurse Education

• Embedding the educational intervention into the nursing curriculum to address the current practice of waiting to identify struggling students.

• The content of the educational seminars needed to be evaluated in terms of theory and nursing exemplars.

• Educational seminars be extended to a half-day situated at the end of each semester, prior to clinical practicum, and after examinations. A take home workbook for reference to be provided.

• Academic staff be trained to competently facilitate group discussions on student stress.
- Clearer protocols or decision-making frameworks be developed to empower students to feel more in control of the outcomes of their clinical practicum.
- The STEM and STEU be modified for other disciplines, such as teaching.
- All graduating students be given the opportunity to debrief in small groups with a credible facilitator.