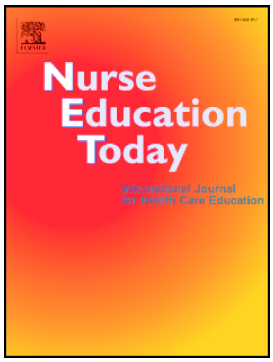

Promoting emotional intelligence and resilience in undergraduate nursing students: An integrative review

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PII: S0260-6917(18)30210-7
DOI: doi:10.1016/j.nedt.2018.05.018
Reference: YNEDT 3866

To appear in: *Nurse Education Today*

Received date: 2 January 2018
Revised date: 16 April 2018
Accepted date: 23 May 2018

Please cite this article as: Michelle Cleary, Denis Visentin, Sancia West, Violeta Lopez, Rachel Kornhaber , Promoting emotional intelligence and resilience in undergraduate nursing students: An integrative review. Ynedt (2018), doi:10.1016/j.nedt.2018.05.018

RESUBMITTED 16th April 2018

NET

TITLE:

Promoting emotional intelligence and resilience in undergraduate nursing students: An integrative review.

RUNNING TITLE: EI and resilience in undergrad nursing students

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Conflict of Interest: None

Funding: UTas funding awarded under the UTAS Research Themes: Better Health Research Development Grant Scheme, supported by the Office of the Deputy Vice-Chancellor and FoH (C0025653)

Author contributions: All authors have agreed on the final version and meet at least one of the following criteria as recommended by the ICMJE (http://www.icmje.org/recommendations/)]: substantial contributions to conception and design, acquisition of data or analysis and interpretation of data; drafting the article or revising it critically for important intellectual content.

Highlights

- Emotional intelligence and resilience may be important traits for nursing students' success and retention in the workforce.
- Effective strategies to promote emotional intelligence and resilience in nursing students have not been fully reviewed.
- Resilience for student nurses provides important benefits in handling adversity
- Resilience and emotional intelligence should be fostered as early as possible in nursing education programs.

Promoting emotional intelligence and resilience in undergraduate nursing students: An integrative review.

Abstract

Objective: To synthesize the evidence that explored resilience and emotional intelligence in undergraduate nursing students.

Background: Nursing is a demanding profession that offers unique challenges. Emotional intelligence and resilience are traits that can allow nursing students to effectively respond to challenges in professional placements and future practice.

Design: An integrative review incorporating both quantitative and qualitative research designs.

Data Source: Studies in the English language were identified through a systematic search in electronic databases: CINAHL, PubMed, ERIC, Scopus and PsycINFO. No restriction dates were used and search was up until November 1, 2017.

Review Methods: Methodological quality was assessed using the Critical Appraisal Skills Programme checklist for qualitative research and the Newcastle-Ottawa Quality Assessment Scale for quantitative research. Data analysis was conducted based on the integrative review method.

Results: Fourteen articles were included. A positive relationship was found between resilience and performance in undergraduate studies including professional experience placements. While some studies observed an important role for emotional intelligence for nursing students, there is currently insufficient evidence to conclude that emotional intelligence improves nursing students' communication, academic success and retention.

Conclusion: Developing skills, such as resilience, as part of nursing programs allows students to be better prepared to deal with the unique challenges in nursing practice.

Keywords: emotional intelligence**,** nursing; resilience, nursing students, undergraduate, baccalaureate, integrative review

1. INTRODUCTION

Traditional intelligence testing is often used as a predictor of success in life and in work. However, intelligence tests scores do not apply equally in all occupations and may have limited predictive capability of success particularly in domains requiring significant co-operation and interpersonal interaction. A large body of research has demonstrated the importance of social and emotional abilities and competence in influencing judgements and actions and thereby enhancing work success (Benson, Ploeg, & Brown, 2010). Emotional intelligence (EI), sometimes known as emotional-social intelligence, is described as an aggregate ‘‘of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate to them, and cope with daily demands” (Bar-On, 2005, p3).

EI guides cognition and cognition drives effective decision-making that can have an impact on patients and health professionals alike. Augusto-Landa and Montes-Berges (2009) describe EI as the variable that mediates psychological health and stress and allows the building of therapeutic relationships. EI allows for better adaptability in new situations and research has demonstrated a link to higher organisational performance, teamwork and conflict management (Barkhordari & Rostambeygi, 2013). As nursing involves a dynamic workplace requiring teamwork and interactions with diverse patient need, EI may provide an important element for success. Resilience is a quality closely related to EI, as both attenuate psychological distress (Benson et al., 2010; Min et al., 2013) which have important implications for life and work success in the face of obstacles. Resilience is considered a capacity to adjust to adversity, maintain an equilibrium, retain control and deal with external stressors such as conflict (Pines et al., 2014). As the clinical environment is often challenging, resilience may be an important requirement for nurses. EI and resilience research has grown in nursing over recent times due to the perceived links to successful, productive and

satisfying nursing careers.

1.1 Background

Both EI and resilience are significant to the role of nursing. Nursing involves interactions with both patients and other health care professionals and nurses can often experience situations of adversity, conflict and stress, leading to burnout (Benson et al., 2010; Haik et al., 2017; Kornhaber & Wilson, 2011). Quality patient care is dependent on a nurse's capacity to effectively handle these issues, and EI and resilience may play an important role in improving the clinical procedures and outcomes. The variables that provide a link between the two outcomes could be the level of EI or resilience of those students involved. In addition, nursing has its own negative impacts on the health of nurses, through factors such as rotational shift work, and EI and resilience are considered by some research as able to mitigate these health effects (Aradilla-Herrero, Tomás-Sábado, & Gomez-Benito, 2013; Augusto-Landa & Montes-Berges, 2009).

Nursing students are at an important stage in their development as they have not yet reached professional standing, lack autonomy, knowledge and confidence and are exposed to the challenges associated with health care settings, such as suffering and death (Aradilla-Herrero et al., 2013). EI and resilience are traits that have been found to be associated with the skills required to handle such challenges, as self-awareness, assertiveness and stress management (Chan, Sit, & Lau, 2014; Holston & Taylor, 2016). Universities provide a unique opportunity to identify and build on EI levels and to assist students to reframe negative or adverse experiences to build a sense of resilience (Hodges, Keeley, & Grier, 2005).

The aim of this integrative review was to synthesize the evidence that explored the notion of resilience and emotional intelligence in undergraduate nursing students. By

synthesizing these results, a better understanding of the impact of these traits on nursing student's wellbeing, academic success and retention can be achieved as well as specific recommendations for further developing EI and resilience in the nursing student cohort.

2. THE REVIEW

2.1 Aim

To synthesize evidence that focused on resilience and EI in university nursing students.

2.2 Design

Integrative review is based on the framework described by Whittemore and Knafl (2005) and includes problem identification, literature search, data evaluation/analysis and the presentation of the results.

2.3 Search methods

In November 2017 a systematic search was conducted using databases Pubmed, PsychINFO, CINAHL, ERIC and Scopus to identify research that explores resilience and emotional intelligence in undergraduate nursing students. Searches were performed using the following Mesh/indexed search terms: (nursing student or undergraduate or nursing education) AND (hardiness or resilience) AND (emotional intelligence). The searches were constructed first in PubMed and adapted for subsequent databases. In addition, hand searches of the reference lists were performed using previously identified reviews (Hayden, Jeong, & Norton, 2016) and the reference lists of included studies that resulted in the inclusion of one extra study (Fernandez, Salamonson, & Griffiths, 2012).

No date restriction was imposed on the search, but papers were limited to those published in English.

Inclusion criteria included peer reviewed quantitative and qualitative primary research investigating university trained undergraduate nurses' promotion of resilience as well as theses. Excluded were systematic/literature reviews, opinion pieces, editorials, conference proceedings and studies published in languages other than English. Excluded studies included enrolled and postgraduate nursing students.

2.4 Search outcomes

Twenty seven papers were retrieved and following removal of duplicates, two independent reviewers screened titles and abstracts (MC, RK). Fourteen articles were included for full-text review with 14 studies meeting the inclusion criteria (Figure 1).

Insert Figure 1 about here

2.5 Quality appraisal

Quantitative data were appraised using the Newcastle-Ottawa Quality Assessment Scale (Modesti et al., 2016) and the CASP tool (Critical Appraisal Skills Programme (CASP) checklists, 2013) used for qualitative data (by MC, RK, DV). Mixed method studies were analysed to determine the predominant form of methodology – qualitative or quantitative – and appraised accordingly. Table 1 and 2 summarise these appraisals respectively.

INSERT TABLE 1 AND 2 HERE

2.6 Data abstraction and synthesis

Relevant data were extracted from the included research: author(s), year, country of origin, aim(s), study design, sample and study population, significant findings and outcomes (See Table 3). All papers were read by all authors. Due to the wide range of study methodologies, themes were derived using the integrative review method (Whittemore & Knafl, 2005) which involved: problem identification; literature review; data evaluation; data analysis; and presentation. Searching beyond databases and incorporating reference list searches enhanced the literature review. Data evaluation was strengthened through use of more than one quality appraisal tool to reflect the different types of methodologies and research types. Data analysis was structured around development of categories and further comparison. **INSERT TABLE 3 HERE**

3. RESULTS

3.1 Characteristics of the included studies

The 14 articles included in the review used a range of methodologies including, descriptive correlational designs, hermeneutic interpretive research, grounded theory, cross-sectional studies, longitudinal studies, and exploratory descriptive designs. Data were collected via in-depth and semi-structured interviews, focus groups, surveys, tests, written essays and questionnaires. One study was identified in which the authors reported results from a single dataset in two manuscripts (see Table 3).

3.2 Synthesis of the identified themes

All articles included in the review presented findings on the assessment of EI and/or resilience to undergraduate nursing, including nursing coursework studies and PEP. The results of the studies are summarised under three themes: EI and resilience in nursing

students, EI and resilience in professional experience placements (PEP); and differences in EI and resilience by demographic factors. In the following sections, the results of the studies are presented under these theme areas.

3.3 Emotional Intelligence and Resilience in Nursing Students

Foster et al. (2017) conducted a longitudinal study of 111 nursing students, which found that EI increased significantly during the first year of study, with a mean increase of 3.5 points in Little's MCAR test ($p = 0.012$). However, no further significant increases were observed by the end of the four-year program. The authors described the results by proposing that emotional mastery was learned but plateaued after the first year, indicating that factors affecting EI were mainly assimilated at this time. Fernandez et al. (2012) similarly found that EI increased over the course of a student's studies but also noted that EI was associated with age, with mature age students having higher EI scores than recent high school graduates. Phillips et al. (2015) found that factors such as prior learning experiences, motivation and reflective capacity contribute to learning readiness. Learning readiness was found to be less prevalent in first year students who were still learning to adapt to the stress and demands of student life.

Fernandez et al. (2012) found a link between EI and academic success, with EI being a strong predictor of academic success under a multiple regression model ($\beta = 0.25$, $p = 0.023$) and significant moderate positive correlations between EI and critical thinking ($r = 0.41$, $p < 0.001$), help seeking ($r = 0.33$, $p = 0.003$) and peer learning ($r = 0.32$, $p = 0.004$). Other research by Foster et al. (2017), (Beauvais et al., 2014) and Nwabuebo (2013) had more equivocal findings on the relationship with EI. In a study involving testing 73 undergraduate students Beauvais et al. (2014) found no correlation between overall EI and academic success, with the exception of a small negative correlation ($r = -0.23$, $p=0.048$) with

perceiving emotions of others. In their study between EI and higher academic scores of senior black nursing students, Nwabuebo (2013) found no statistically significant relationships. These findings indicate that that EI may only be a strong predictor of whether a student will do well academically for particular groups.

Retention has been considered as synergistic with academic success and from this has developed the assumption that EI scores would be higher amongst continuing students than students who withdrew (Wilson, 2013). In a quantitative longitudinal study of 675 students, Wilson (2013) found no significant difference in EI scores between retained and non-retained students one year post-commencement of the nursing undergraduate course. The study found that campus life, in particular the range of activities available for participation, did have an impact on retention. Slatyer et al. (2016) found resilience, grounded in experience with adversity and coping, may impact retention and course completion, while a lack of resilience and motivation impacted on a student's intention to remain in the course.

3.4 Emotional Intelligence and Resilience in PEP

A significant moderate correlation for clinical communication with EI ($r = 0.60$, $p < 0.01$) and also resilience ($r = 0.460$, $p < 0.01$) amongst nursing students whilst on PEP was noted in a study by Kong et al. (2016). The capacity to communicate in a clinical environment was seen to positively relate to EI as higher levels of EI would facilitate empathy and better understanding of the patient's perspective, promoting student's learning and ethical decision-making and enhance critical thinking and evidence-based practice. The same positive association was found between resilience and clinical communication. Students with higher levels of resilience were also found to be more optimistic, open and tranquil, which would promote stronger adaptation to the clinical environment, thereby aiding communication. The study also found a moderating effect of resilience on the relationship

between EI and clinical communication. Higher resilience strengthened the effect of EI on communication and lessened the effect when resilience was low.

The notion of spirituality amongst nursing students during PEP was discussed by Cilliers and Terblanche (2014). The authors had hypothesized a link between self-stated spirituality and the approach they would take to nursing care. However, the findings indicated limited EI amongst students with self-identified spirituality and reduced capacity of these students to make emotional sense of the experience they had on PEP. Their spirituality did not manifest as empathy, positivity, self-efficacy or work engagement and a lack of resilience meant they could not develop attitudinal patterns for coping or motivation.

Examining students' emotional experiences, Curtis et al. (2012) explored the impediments to developing compassionate care during PEP through in-depth interviews with 19 students. The authors found that students struggled to make sense of the dissonance between what they expected of themselves in the delivery of compassionate care prior to undertaking PEP and what they experienced in reality. Without resilience-building exercises built into the curriculum prior to PEP it was believed that compassionate care was an unrealistic ideal for many nursing students. In a second article related to the same study Curtis (2014) described how students likened their inability to reconcile ideals and reality with a lack of resilience, a need to 'harden up' and being 'soft'. Similarly, Zhao et al. (2016) focused on resilience and found that it was a predictor of subjective wellbeing ($\beta = 0.253$, $p < 0.01$). Resilience had a protective effect on mental health and allowed students better recovery from stressful events, such as those experienced in PEP. However, the authors also noted a decline in subjective wellbeing from the third to the final year of nursing studies (Mean difference = 0.88, $p < 0.05$), which they attributed to the fact that the final year is spent entirely on PEP.

The relationship between EI, resilience and student's views of death was discussed by Edo-Gual et al. (2015). This study based on a questionnaire completed by 760 undergraduate students found that only certain components of EI are significant predictors of a decreased fear and anxiety of death. Clarity resulted in reduced fear and anxiety of the possibility of exposure to death during PEP or future practice as a nurse ($p < 0.01$). However, attention was found to increase fear and anxiety. This suggested that nurses who gave more attention to their own feelings were actually more likely to foster ruminative thoughts and distress, rather than effectively processing those feelings. This indicated a negative impact between EI and effective nursing practice. In contrast to EI, the same study found that higher resilience was associated with lower fear and anxiety relating to death. These more resilient students were better able to integrate experiences of loss to foster greater emotional control. This is also demonstrated in Cilliers and Terblanche (2014) research:

> *As I hold the hand of a woman dying, I wonder if these precious, yet traumatizing moments will ever cease to break my heart. Will I ever become the nurse that is not impacted by a patient's death? Will I come home this physically and emotionally tired after every shift for the rest of my career?* p. 283

Fostering greater emotional control was also evident in research by Curtis (2014).

> *If someone passed away I'd probably burst into tears but I'd also be worried about crying in front of the relatives because it would feel like I was taking away their grief from them.* p. 215

The final study related to EI and nursing students was that of Li et al. (2015) in their examination of the post-traumatic growth of those who had experience childhood adversity and how this impacted on their levels of EI. They found that total Post Traumatic Growth Index scores were correlated with EI ($r = 0.221$, $p < 0.01$) and resilience ($r = 0.227$, $p < 0.01$),

however not all aspects of EI were significant and they posited that there may be optimal levels of EI in findings similar to Edo-Gual et al. (2015). The authors (Li et al., 2015) found that lower personal growth was reported in those with low and high levels of EI. Low levels of EI were found to make a person less able to respond to others feelings, made them less able to be empathetic, reduced perspective and impacted on the development of coping mechanisms in conflict situations. Likewise, those with higher levels of EI were found to lack post-traumatic growth as this can only occur if the trauma is sufficiently upsetting to the person to drive them to make meaning of it. Therefore, only an optimal level of EI was able to turn meaning-making into personal growth.

3.5 Differences by Demographics

More than half of the articles reviewed discussed differences in EI and/or resilience based on the demographic features of ethnicity, gender and age. The importance of ethnic balance in nursing was highlighted (Nwabuebo, 2013; Slatyer et al., 2016) in that ethnicity yielded varied relationships with EI and resilience. While Foster et al. (2017) found that Non-Australians scored higher on the EI component of 'managing own emotions' than Australians (Mean difference = 1.57, $p < 0.05$), Slatyer et al. (2016) found that the resilience of Australian Aboriginal nursing students contributed to motivation to persist with their studies and that experience with adversity was more likely to create that resilience:

> *I'm a person who likes to achieve…not getting where I want to be is pretty frustrating. It makes me feel you can't handle it … trying to learn all this stuff in two weeks with assessments. This week I really struggled and I didn't complete one section of it…You're not happy with the results.* (Student Focus Group 2) p. 20

Wilson (2013) found that being African-American was negatively correlated with retention (Mean difference = - 0.29, $p < 0.05$). The studies which examined ethnicity did so within a

multicultural context, with subgroups having different ethnicities within a single cohort.

Gender was equally as varied in its relationship to EI and resilience. Foster et al. (2017) and Nwabuebo (2013) each found no difference in EI scores between genders. Zhao et al. (2016), in their study of resilience, found male nursing students to have lower resilience than their female counterparts (Mean difference = -14.24, $p < 0.05$).

The results in regards to age were also equivocal across the studies. Foster et al. (2017) and Nwabuebo (2013) found no significant relationship between age and EI while Phillips et al. (2015) showed no relationship between age and self-directed learning readiness. In contrast to Fernandez et al. (2012) observed high levels of EI in their cohort of mature age students. Conversely, Wilson (2013) demonstrated a negative relationship between age and retention, indicating that those over the age of 30 were more likely to leave their studies (Mean difference = -0.09, $p < 0.05$).

4. Discussion

Examination and synthesis of the findings of the 14 articles included in this review reveals a relationship between EI and its role in enabling nursing students in their coursework or PEP. However, the role of the domains of EI in success for undergraduate nurses remains unclear across the studies. Some studies found a positive association between EI and outcomes such as clinical communication (Kong et al., 2016), course progression (Foster et al., 2017), age (Fernandez et al., 2012) and academic success (Fernandez et al., 2012; Foster et al., 2017). Other studies, however, found no associations (Beauvais et al., 2014; Nwabuebo, 2013; Wilson, 2013) or only with only certain elements of EI (Edo-Gual et al., 2015). No consistent relationship was found for the effect of demographic variables on EI, including age, gender or ethnicity. One study hypothesised a balance had to be struck in campus activities – not too many, not too few – in order to maximise student satisfaction and retention (Wilson,

2013), while another reported a similar equilibrium of EI promoted post-traumatic growth (Li et al., 2015).

Resilience revealed a consistent, positive influence in nursing students. Resilience was found to have a positive association in four studies: to clinical communication (Kong et al., 2016); improved wellbeing (Zhao et al., 2016); reduced fear of death (Edo-Gual et al., 2015); and student retention (Slatyer et al., 2016). Clinical communication ability of nurses to listen, respond effectively and convey information to the patients and their families is a crucial factor in patient-centred care (Balandin, Hemsley, Sigafoos, & Green, 2007). These results provides evidence to support that resilience is a necessary trait for nursing students to possess or develop in order to succeed in study and practice.

This importance of resilience for coping in stressful situations is most important for nursing students when undertaking PEP. Two studies (Cilliers & Terblanche, 2014; Curtis et al., 2012) examined the strong dissonance experienced by students when they went out on placement and the profoundly negative feelings students took from those experiences. So destructive can this dissonance be that a recent study in Greece found 10% of nursing students surveyed had suicidal thoughts and 1.4% stated that they may attempt suicide (Melissa-Halikiopoulou, Tsiga, Khachatryan, & Papazisis, 2011), while another study found as much as 14% of nursing students could be classified as being at high risk of suicide (Aradilla-Herrero et al., 2013). Resilience is a tool that assists students to take the adversity, trauma or complexities from their PEP and use these as a growth opportunity rather than an unsettling and negative experience (Hodges et al., 2005; Pines et al., 2014).

Nursing has long been acknowledged as emotionally demanding work with high levels of stress, anxiety and burn-out (McGowan & Murray, 2016; McVicar, 2003). The

question is how best to equip students with resilience as well as how to find the right circumstances under which EI can positively affect nursing students. Kaya, Şenyuva, and Bodur (2017) stated that developing critical thinking skills in nursing students can build their emotional intelligence over time so such training should start at the beginning of their academic year in the nursing programme. Their study showed a strong positive association between critical thinking disposition and emotional intelligence. Being analytical make students more attentive to potential problems (Zhang & Lambert, 2008) and be broadminded by taking views of others and not only from own ideas (Tiwari, Avery, & Lai, 2003).

This review also identified that nursing students experienced high stress during PEP that could also affect their retention in nursing. Application of emotions to problem solving (Grace, 2004) have all been offered as ways the universities can maximise the resilience of nursing students. Lewis, Neville, and Ashkanasy (2017) suggested that there is a need to conduct pre-education clinical education program to reduce students' anxiety especially in dealing with end of life care. EI may also be addressed in nursing education by identifying the importance of emotions in problem solving and critical thinking for clinicians. Equipping students with EI during this pre-education may help them prepare for emotional engagement during clinical placement (Begley & Glacken, 2004).

The development of social competencies through interactions with clinical teachers and peers during training (Benson et al., 2010; Walker, Rossi, Anastasi, Gray-Ganter, & Tennent, 2016), demonstrates that therapeutic interaction can promote resilience by forging teamwork to address challenging issues such as conflict (Chan et al., 2014; Lanz & Bruk‐Lee, 2017). Providing nursing students with a caring clinical environment and positive staff relationship can also promote resilience especially in international nursing students (Thomas, Jack, & Jinks, 2012). If nursing students are satisfied with their learning journey, the more

they can engage with confidence and competence in their clinical practice (Walker et al., 2016). Alconero-Camarero et al. (2017) used clinical simulation care scenarios to examine associations between EI, coping and satisfaction with nursing students own learning and found strong associations between them. They suggested that educators should improve the curriculum design by using simulations to promote EI in nursing students. However, the constructs of EI and resilience needs to be examined to fully determine if EI is an important contributor to resilience in terms of its protective factor. Furthermore, more qualitative studies are required to clarify the role of EI in nursing students and the best way in which it can be applied.

4.1 Implications for research, policy and practice

Given the unique challenges faced in the nursing environment, nursing students need to develop emotional intelligence and resilience traits that will allow them to successfully manage these challenges whilst promoting patient care. Understanding the role resilience plays in managing adversity, as well as elements of EI which assist with managing stressful situations, will facilitate nurse educators to improve design courses and PEP experience, thereby creating nurses more likely to handle the demands of nursing study, PEP and their transition to the nursing profession.

The main recommendations amongst the articles reviewed in relation to EI and resilience was to encourage understanding amongst educational staff and preceptors, amend nursing courses to facilitate development of these traits, and to consider review of eligibility criteria for nursing admission. Further research is needed to provide clarity on the elements of EI that may assist nursing students with handling adversity, as well as the best ways to incorporate EI into nursing education. Researchers are also encouraged to focus on the experience of nursing students in PEP and the effect these experiences have on future practice,

given the challenges PEP raises for undergraduate students.

4.2 Limitations

A larger portion of quantitative studies as compared to qualitative studies limited this review. There were also few longitudinal studies with limited timeframes, no randomised control trials and no case control studies. Follow-up of studies into practice have also not been performed. Limitations in conducting searches for articles were noted, with search terms being unable to fully capture differing terminology. Future research is required to examine the effectiveness of promotion of EI and resilience in nurse education and the impact this may have on nursing practice.

5. Conclusion

This integrative review has synthesised the evidence addressing EI and resilience in undergraduate nursing students. Synthesis of the results of 14 articles revealed that EI may have a significant role for nursing student education and in PEP, via communication skills, academic success and retention, but that the importance of the domains EI are unclear. While some demographic factors were observed, there was no consistent relationship with EI across the studies. Resilience showed a positive association with nursing students' capacity to engage successfully in professional practice and maintain wellbeing. Understanding how resilience enables nursing students to effectively handle their student and future professional practice is imperative for addressing the challenges inherent in the nursing work environment. Incorporating this understanding into the education of nurses allows these skills to be developed at an early stage and thereby optimised throughout nursing practice.

References

Alconero-Camarero, A. R., Sarabia-Cobo, C. M., Gonzalez-Gomez, S., Ibanez-Rementeria, I., Lavin-Alconero, L., & Sarabia-Cobo, A. B. (2017). Nursing students' emotional intelligence, coping styles and learning satisfaction in clinically simulated palliative care scenarios: An observational study. *Nurse Education Today, 61*, 94-100.

Aradilla-Herrero, A., Tomás-Sábado, J., & Gomez-Benito, J. (2013). Associations between emotional intelligence, depression and suicide risk in nursing students. *Nurse Education Today, 34*, 520-525.

Augusto-Landa, M., & Montes-Berges, B. (2009). Perceived Emotional Intelligence, Health and Somatic Symptomatology in Nursing Students. *Individual Differences Research, 7*(3), 197-211.

Balandin, S., Hemsley, B., Sigafoos, J., & Green, V. (2007). Communicating with nurses: The experiences of 10 adults with cerebral palsy and complex communication needs. *Applied Nursing Research, 20*(2), 56-62.

Bar-On, R. (2005). The Bar-On model of emotional-social intelligence (ESI). *Psicothema, 17*, 1-29.

Barkhordari, M., & Rostambeygi, P. (2013). Emotional intelligence in nursing students. *Journal of Advances in Medical Education and Professionalism, 1*(2), 46-50.

Beauvais, A. M., Stewart, J. G., DeNisco, S., & Beauvais, J. E. (2014). Factors related to academic success among nursing students: a descriptive correlational research study. *Nurse Education Today, 34*(6), 918-923.

Begley, C. M., & Glacken, M. (2004). Irish nursing students' changing levels of assertiveness during their pre-registration programme. *Nurse Education Today, 24*(7), 501-510.

Benson, G., Ploeg, J., & Brown, B. (2010). A cross-sectional study of emotional intelligence in baccalaureate nursing students. *Nurse Education Today, 30*, 49-53.

Chan, J., Sit, E., & Lau, W. (2014). Conflict management styles, emotional intelligence and implicit theories of personality of nursing students: A cross-sectional study. *Nurse Education Today, 34*, 934-939.

Cilliers, F., & Terblanche, L. (2014). The role of spirituality in coping with the demands of the hospital culture amongst fourth-year nursing students. *International Review of Psychiatry, 26*(3), 279-288.

Critical Appraisal Skills Programme (CASP) checklists. (2013). Available at: Retrieved from http://www.casp-uk.net/.

Curtis, K. (2014). Learning the requirements for compassionate practice: student vulnerability and courage. *Nursing Ethics, 21*(2), 210-223.

Curtis, K., Horton, K., & Smith, P. (2012). Student nurse socialisation in compassionate practice: a Grounded Theory study. *Nurse Education Today, 32*(7), 790-795.

Edo-Gual, M., Monforte-Royo, C., Aradilla-Herrero, A., & Tomás-Sábado, J. (2015). Death attitudes and positive coping in Spanish nursing undergraduates: A cross-sectional and correlational study. *Journal of Clinical Nursing, 24*(17-18), 2429-2438.

Fernandez, R., Salamonson, Y., & Griffiths, R. (2012). Emotional intelligence as a predictor of academic performance in first-year accelerated graduate entry nursing students. *Journal of Clinical Nursing, 21*(23-24), 3485-3492.

Foster, K., Fethney, J., McKenzie, H., Fisher, M., Harkness, E., & Kozlowski, D. (2017). Emotional intelligence increases over time: A longitudinal study of Australian pre-registration nursing students. *Nurse Education Today, 55*, 65-70.

Grace, F. (2004). *The Relationship Between Student Satisfaction and Emotional Intelligence Among Undergraduate Nursing Students Enrolled in Nursing Programs.* (Doctor of Education), Wayne State University, Detroit, Michigan.

Haik, J., Brown, S., Liran, A., Visentin, D., Sokolov, A., Zilinsky, I., & Kornhaber, R. (2017). Burnout and compassion fatigue: prevalence and associations among Israeli burn clinicians. *Neuropsychiatric Disease and Treatment, 13*, 1533-1540.

Hayden, L. J., Jeong, S. Y., & Norton, C. A. (2016). An Analysis of Factors Affecting Mature Age Students' Academic Success in Undergraduate Nursing Programs: A Critical Literature Review. International Journal of Nursing Education Scholarship, 13(1), 127-138.

Hodges, H. F., Keeley, A. C., & Grier, E. C. (2005). Professional resilience, practice longevity, and Parse's theory for baccalaureate education. *Journal of Nursing Education, 44*(12), 548-554.

Holston, E., & Taylor, J. (2016). Emotional Intelligence in Nursing Students. *International Journal of Advances in Psychology, 5*, 11-22.

Kaya, H., Şenyuva, E., & Bodur, G. (2017). Developing critical thinking disposition and emotional intelligence of nursing students: a longitudinal research. *Nurse Education Today, 48*, 72-77.

Kong, L., Liu, Y., Li, G., Fang, Y., Kang, X., & Li, P. (2016). Resilience moderates the relationship between emotional intelligence and clinical communication ability among Chinese practice nursing students: A structural equation model analysis. *Nurse Education Today, 46*, 64-68.

Kornhaber, R. A., & Wilson, A. (2011). Building resilience in burns nurses: a descriptive phenomenological inquiry. *Journal of Burn Care & Research, 32*(4), 481-488.

Lanz, J. J., & Bruk-Lee, V. (2017). Resilience as a moderator of the indirect effects of conflict and workload on job outcomes among nurses. *Journal of Advanced Nursing, 73*(12), 2973-2986.

Lewis, G. M., Neville, C., & Ashkanasy, N. M. (2017). Emotional intelligence and affective events in nurse education: A narrative review. *Nurse Education Today, 53*, 34-40.

Li, Y., Cao, F., Cao, D., & Liu, J. (2015). Nursing students' post-traumatic growth, emotional intelligence and psychological resilience. *Journal of Psychiatric Mental Health Nursing*, *22*(5), 326-332.

McGowan, J. E., & Murray, K. (2016). Exploring resilience in nursing and midwifery students: a literature review. *Journal of Advanced Nursing, 72*(10), 2272-2283.

McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing*, *44*(6), 633-642.

Melissa-Halikiopoulou, C., Tsiga, E., Khachatryan, R., & Papazisis, G. (2011). Suicidality and depressive symptoms among nursing students in northern Greece. *Health Science Journal, 5*, 90-97.

Min, J.-A., Yoon, S., Lee, C.-U., Chae, J.-H., Lee, C., Song, K.-Y., & Kim, T.-S. (2013). Psychological resilience contributes to low emotional distress in cancer patients. *Supportive Care in Cancer*, *21*(9), 2469-2476.

Modesti, P. A., Reboldi, G., Cappuccio, F. P., Agyemang, C., Remuzzi, G., Rapi, S., . . . Parati, G. (2016). Panethnic Differences in Blood Pressure in Europe: A Systematic Review and Meta-Analysis. *PLoS ONE, 11*(1), e0147601.

Nwabuebo, E. (2013). *Emotional intelligence and academic achievement among senior black students enrolled in baccalaureate nursing programs: Implications for nursing education.* (PhD), Capella University, Minneapolis, Minnesota.

Phillips, B. N., Turnbull, B. J., & He, F. X. (2015). Assessing readiness for self-directed learning within a non-traditional nursing cohort. *Nurse Education Today*, *35*(3), e1-7.

Pines, E., Rauschhuber, M., Cook, J., Norgan, G., Canchola, L., Richardson, C., & Jones, M. (2014). Enhancing Resilience, Empowerment and Conflict Management Among Baccalaureate Students: Outcomes of a Pilot Study. *Nurse Educator, 39*(2), 85-90.

Slatyer, S., Cramer, J., Pugh, J. D., & Twigg, D. E. (2016). Barriers and enablers to retention of Aboriginal Diploma of Nursing students in Western Australia: An exploratory descriptive study. *Nurse Education Today, 42*, 17-22.

Thomas, J., Jack, B. A., & Jinks, A. M. (2012). Resilience to care: a systematic review and meta-synthesis of the qualitative literature concerning the experiences of student nurses in adult hospital settings in the UK. *Nurse Education Today, 32*(6), 657-564.

Tiwari, A., Avery, A., & Lai, P. (2003). Critical thinking disposition of Hong Kong Chinese and Australian nursing students. *Journal of Advanced Nursing, 44*(3), 298-307.

Walker, S., Rossi, D., Anastasi, J., Gray-Ganter, G., & Tennent, R. (2016). Indicators of undergraduate nursing students' satisfaction with their learning journey: an integrative review. *Nurse Education Today, 43*, 40-48.

Whittemore, R., & Knafl, K. (2005). The integrative review: updated methodology. *Journal of Advanced Nursing, 52*(5), 546-553.

Wilson, V. J. (2013). *Emotional Intelligence and Nursing Student Retention.* (Doctor of Higher Education), University of Arkansas at Little Rock, Little Rock.

Zhang, H., & Lambert, V. (2008). Critical thinking dispositions and learning styles of baccalaureate nursing students from China. *Nursing & Health Sciences, 10*(3), 175-181.

Zhao, F., Guo, Y., Suhonen, R., & Leino-Kilpi, H. (2016). Subjective well-being and its association with peer caring and resilience among nursing vs medical students: A questionnaire study. *Nurse Education Today, 37*, 108-113.

	Beauvais, Stewart, DeNisco, and Beauvais (2014)	Edo-Gual, Monforte-Royo, Aradilla-Herrero, and Tomás-Sábado (2015)	Fernandez, Salamonson, and Griffiths (2012)	Foster et al. (2017)	Kong et al. (2016)	Li, Cao, Cao, and Liu (2015)	Nwabuebo (2013)	Phillips, Turnbull, and He (2015)	Wilson (2013)	Zhao, Guo, Suhonen, and Leino-Kilpi (2016)
Selection										
Representativeness of the sample	a*	a*	a*	b*	b*	b*	c	a*	b*	a*
Sample size	a*	b	b	b	b	b	b	b	b	b
Non-respondents	b	a*	a*	b	c	b	c	c	a*	a*
Ascertainment of the exposure	a**	a**	a**	a**	a**	a**	a**	a**	a**	a**
Comparability										
Confounding factors	-	a* b*	-	a* b*	a* b*	-	-	a* b*	a* b*	a*
Outcome										
Assessment	c*	c*	b**	c*	c*	c*	c*	c*	c*	c*
Statistical test	a*	a*	a*	a*	a*	b	a*	a*	a*	a*
Score	6	8	7	7	7	4	4	7	8	7

Table 1: Critical appraisal of included quantitative studies using the Newcastle-Ottawa Quality Assessment Scale (Modesti et al., 2016)

Table 2: Critical appraisal of included qualitative studies using CASP tool

Authors and year of publication	(Cilliers & Terblanche, 2014)			(Curtis, 2014; Curtis, Horton, & Smith, 2012)			(Slatyer, Cramer, Pugh, & Twigg,		
CASP Question	Yes	Can't tell	No	Yes	Can't tell	No	yes	Can't tell	No
Aims clearly stated?	●			●			●		
Appropriateness of qualitative methodology?	●			●			●		
Methodology appropriate to address aims?	●			●			●		
Recruitment strategy appropriate to aims?	●			●			●		
Data collection addressed research issue?	●			●			●		
Relationship between researcher and participant considered?	●			●			●		
Ethical issues consideration?		●		●			●		
Data analysis rigorous?	●			●			●		
Clear statement of findings?	●			●			●		
Is the research valuable?	●			●			●		

(Critical Appraisal Skills Programme (CASP) checklists, 2013)

Table 3: Summary of included studies (n=14)

Author, year & country	Aims	Study design	Sample & study population	Significant findings & outcomes
Beauvais et al. (2014) USA	To describe the relationship between EI , psychological empowerment, resilience, spiritual wellbeing and academic success in undergraduate and graduate nursing students	A descriptive correlational design using Mayer-Salovery-Caruso Emotional Intelligence Test, Spreitzer Psychological Empowerment Scale, Wagnild and Young Resilience Scale, the Spiritual Well-Being Scale and a background data sheet	n =73 undergraduate students (excluding freshmen) [graduate nursing students included in study but not reported in this review]	Perceiving emotion was related to academic success amongst UGs. Other domains of EI and EI overall were not related to academic success.
Cilliers and Terblanche (2014) (South Africa)	To investigate how student nurses cope with emotional difficulty in the hospital culture from a spiritual perspective	Qualitative, descriptive, hermeneutic interpretive research via written essay from nursing students on their experiences of the demands of the hospital culture	n =14 undergraduate nursing students. All female.	Students expressed themselves in religious and spiritual words, but did not illustrate behaviours linked to other positive psychology constructs such as sense of coherence, resilience, engagement or emotional intelligence.
Curtis et al. (2012) UK Curtis (2014) UK	To explore the student nurse experience of socialisation in the 21st Century compassionate practice, the concerns students had in relation to provision of compassionate practice and how they managed these concerns	A Glaserian Grounded Theory study using in-depth interviews with student nurses and staff. Data from NHS patient and staff surveys were used to build context	n=19 students n = 5 staff n =19 student nurses	Students use personal, theory and practice exposure to achieve compassionate practice; however they experience a dissonance between what they believe RNs should uphold in terms of compassionate practice and what they witness in variation to this belief; this results in students trying to balance between intentions to uphold compassionate practice and adapt these ideals in order to 'survive' in the hospital environment Students attempt to balance between their intention to engage in compassionate practice and establishing emotional boundaries to preserve emotional wellbeing; student's caring behaviour diminishes towards the end of their studies due to realities of coping with pressures of practice and unsustainable professional ideals

Edo-Gual et al. (2015) Spain	To analyse the relationship between death attitudes, EI , resilience and self- esteem in nursing undergraduate students	Cross-sectional, correlational study via a self-reported questionnaire using Collett- Lester Fear of Death Scale, Death Anxiety Inventory-Revised, Trait Meta-Mood Scale, Brief Resilience Coping Scale and Rosenberg Self- Esteem Scale	n =760 undergraduate nursing students	Attention to feelings, resilience and self-esteem are all predictors of death anxiety; students with higher scores on clarity and mood repair and higher resilience have less fear of death anxiety. But excessive focus on one's own feelings can increase personal distress
Fernandez et al. (2012) Australia	To examine the associate between trait EI and learning strategies and their influence on academic performance among first year accelerated nursing students	Prospective survey design using the adapted version of the 144-item Trait Emotional Intelligence Questionnaire	n =81 first year accelerated nursing students	EI was found to be a strong predictor of academic success. There was a statistically significant correlation between EI and critical thinking, help seeking and peer learning; there was no correlation with extrinsic goal orientation
Foster et al. (2017) Australia	To measure EI in pre-registration nursing students from program commencement to conclusion to ascertain EI over time and examine the relationship between EI and academic performance	Longitudinal repeated measures study between March 2010–February 2013 at a metropolitan university in Australia	n =111 nursing students (74.8% female) enrolled in a pre- registration Master of Nursing degree	EI found to be higher at the end of the first year than the start, indicating that EI can be acquired. No further increase in EI noted by the end of Year 4. Non-Australians scored higher on 'managing own emotions' than Australians. This result requires further investigation; no gender or age differences noted; increase in academic performance linked to increase in managing others emotions
Kong et al. (2016) China	To examine the positive association between EI and clinical communication ability amongst practice nursing students and to determine whether resilience plays a moderating role in the relationship between EI and clinical communication ability among Chinese practice nursing students	A cross-sectional design using questionnaires including a demographic questionnaire, Emotional Intelligence Inventory, Connor-Davidson Resilience Scale, and Clinical Communication Ability Scale	n =377 practice nursing students from three hospitals	EI was positively associated with clinical communication ability; this is because nursing students with high EI may be better able to understand the patient's perspective, and they are also more likely to experience empathy; resilience significantly affected clinical communication ability and moderated the relationship between EI and clinical communication ability

Li et al. (2015) China	To explore the relationship among Post Traumatic Growth in nursing students with an experience of high-level childhood adversity, emotional intelligence and resilience	A cross-sectional study using self-reported data via anonymous questionnaires. Data was only analysed from participants who reported any 'most distressing' event on at least one scale of the Childhood Adversities Checklist and completed all measures. Instruments used were Childhood Adversities Checklist, Posttraumatic Growth Inventory, 10-Item Connor-Davidson Resilience Scale and Emotional Intelligence Scale	n =202 nursing students from one vocational school	Nursing students with low or high EI or resilience reported lower levels of growth than did those with intermediate EI or resilience levels; this suggests that an optimal level of EI or resilience may foster PTG, whereas low and high-level EI or resilience may be insufficient to stimulate growth
Nwabuebo (2013) USA	To investigate the relationship between trait EI and academic achievement as evident by Grade Point Average (GPA) among senior Black students enrolled in Baccalaureate Science nursing (BSN) programs	A quantitative correlational study using self-reported GPA, demographics questionnaire and TEIQue-SF measurement of trait emotional intelligence	n =60 nursing students	There was no relationship between trait EI and GPA
Phillips et al. (2015) Australia	To elicit the level of self-directed learning readiness (SDLR) among undergraduate nursing students and elicit what differences existed in the levels of SDLR in relation to age, gender, academic year, and previous qualifications	An online survey that used the SDLR Scale for Nursing Education	n =407 nursing students	Results found no significant age or gender differences. First year students demonstrated lower levels of self-directed learning readiness; however, unexpected results were demonstrated in the survey subscales in relation to previous qualifications; participants who already held post-graduate qualifications showed lower scores for Self-Management than those who held diploma qualifications, while students who already held a bachelor's degree had the highest scores in Desire for Learning; the study findings suggest that universities should not assume that SDL capability is dependent on mature age or length of exposure to tertiary study

Slatyer et al. (2016) West Australia	To describe the enablers and barriers to retention of ATSI students in Diploma of Nursing	Exploratory descriptive design using a survey that discussed background and motivation followed by two focus groups with students, as well as semi-structured interviews with staff	n =10 students were involved in the survey n= 16 students were involved in the focus groups UNKNOWN number of staff in interviews	Student resilience grounded in experience of coping with adversity related to course completion; in contrast, self-doubt and a diminishing motivation emerged as factors that determined whether students intended to remain in the course; these findings suggest that the concept of resilience provides a useful perspective to inform strategies to promote the retention of Aboriginal students in tertiary education; positive relationships with staff, and connection to family and community were integral to Aboriginal students' resilience and ability to successfully navigate logistical challenges
(Wilson, 2013) USA	To examine a holistic approach to retention by using a Multi- Intelligence Model of Retention and testing its four constructs: emotional-social intelligence, cognitive intelligence, environmental factors, and student characteristics	A quantitative longitudinal study of an ex post facto/causal comparative design using an emotional-social intelligence test and gathering of cognitive data, program type, student profile and environmental data. One year later retention status and GPA were examined	n =675 students (male = 81, female = 573, unspecified = 21)	No significant difference in total emotional-social intelligence scores of retained students versus students who were not retained; self-actualization scores were higher in retained students and were a predictor of retention. In contrast, the scores for self- regard, self-awareness, assertiveness, and independence were similar between the retained and the not retained groups
Zhao et al. (2016) China	To examine the effects of peer caring and resilience on subjective well-being (SWB) as well as the mediating and moderating effects of resilience in the relationship between peer caring and SWB	A cross-sectional survey via questionnaires incorporating the General Well-Being Schedule, Peer Caring Measurement and Resilience Scale	n =437 nursing undergraduate students n=370 medical undergraduate students [Medical students included in study but not reported in this review]	The subjective wellbeing (SWB) of students in their first and second year was comparatively lower than that of third-year students; this may be due to third-year students having adapted to the intensity of their studies; during their last (fourth) year of college, nursing students in China spend the whole year practicing at a hospital, and students in their final year experienced a decline in SWB; nursing students experience higher levels of stress in a hospital environment, with assignments, and workload as the most common stressors

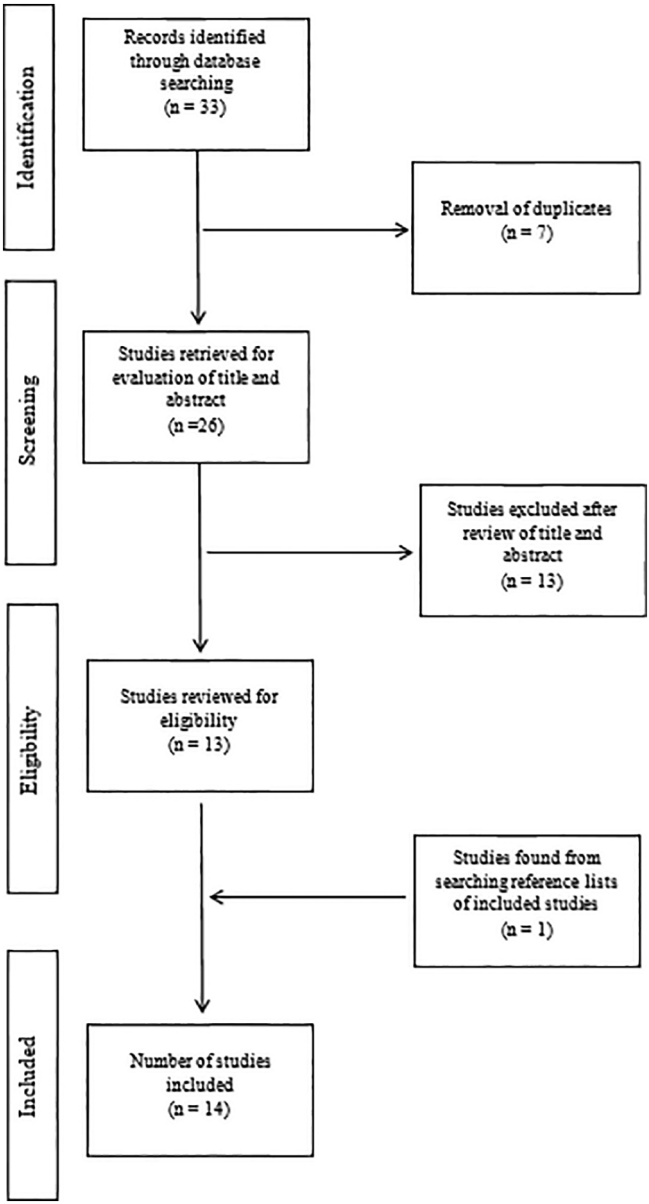
Identification
Records identified through database searching (n = 33)
Removal of duplicates (n = 7)
Screening
Studies retrieved for evaluation of title and abstract (n =26)
Studies excluded after review of title and abstract (n = 13)
Eligibility
Studies reviewed for eligibility (n = 13)
Studies found from searching reference lists of included studies (n = 1)
Included
Number of studies included (n = 14)

Figure 1