**Learning and teaching approaches promoting resilience in student nurses: An integrated review of the literature**

PaulineWalsh∗p.n.walsh@keele.ac.ukPatricia A.Owenp.a.owen@keele.ac.ukNageenMustafan.mustafa1@keele.ac.ukRogerBeechr.beeech@keele.ac.uk

Faculty of Medicine and Health SciencesKeele University, Keele, Staffordshire, ST55BG, UK

∗Corresponding author.

**Abstract**

Undergraduate nursing students face challenges that can result in stress leading to impaired performance, physical illness, high turnover and sickness absence (Kinman and Jones 2001). Students therefore require skills and knowledge to help them cope with the challenges of learning professional practice. This paper explores the concept of resilience, with an emphasis on how educational programmes can foster resilient practices among student nurses. Educators can facilitate resilience by incorporating resilience teaching and training that includes, the core concepts of resilience: self-efficacy, reflective ability and self-confidence. Critical appraisal and synthesis of the literature resulted in the identification of three themes: attributes, programmes and transition. The following five key learning and teaching methods were identified as supporting the development of resilience: peer activities; reflective practice; directed study; problem based learning/enquiry based learning and experiential learning Having resilience and resilient qualities is an integral part of nursing, having a positive impact upon the health and well-being of the nurse as practitioner. Resilient qualities and behaviours can be developed through the facilitation of appropriate learning and teaching interventions.

**Keywords**

: Learning and teaching; Student nurses; Resilience; Curriculum

**1**

**Introduction**

The International Code of Nursing (​International Council of Nurses, ICN, 2012​) sets out global professional ethical standards for nursing which transcend differing cultures and contexts resulting in common professional values. These standards support the role of nurse educators in translating an ethical code across four elements identified by the ICN to help prepare nursing students for ethical practice and develop associated values. These four elements relate nursing to ‘people’, ‘practice’, the ‘profession’ and ‘co-workers’ and identify primary responsibilities of the nurse in these areas. This aids nurse educators to support nursing students to learn ethical practice and values in the contemporary health care setting. ​Fahrenwald et al. (2005)​ support the requirement to facilitate learning of ethical and professional values and suggest that nursing education programmes should teach students to “apply the abstract values of human dignity, integrity, autonomy, altruism, and social justice in clinical practice” (pg. 46). They also suggest that the future nursing workforce should be grounded in the concept of caring and act upon this ethos through value-based behaviour (​Fahrenwald et al., 2005​). Internationally however, there have been some concerns about how these values can be upheld within the sometimes challenging economic and political environments in health care, leading at times to care that is considered poor and lacking in compassion (​Francis, 2013; Kim and Flaskerud, 2007​). In the United Kingdom such concerns have provided an opportunity for nurse educators to review programmes to ensure that students develop appropriate attitudes, attributes and professional values (​Willis, 2015​).

It has been identified that working in challenging health care environments is emotionally demanding for nursing staff (​Aiken et al., 2012​) and requires nurses to be able to manage potentially difficult situations and conflict which in turn can result in stress. According to ​Kinman and Jones (2001)​ stress within the helping professions can lead to “impaired performance, physical illness, high turnover and sickness absence” (​Kinman and Jones, 2001​, pg. 199). It is important therefore that nursing students gain support in managing these types of situations whilst in their training programmes because pre-registration nursing students may experience more stress than qualified colleagues (​Pearcey and Elliott, 2004​). This is caused by having to perform well in clinical placement alongside undertaking course work and the anticipation of qualification (​Pearcey and Elliott, 2004​). Indeed, students can face a number of challenges (​Jimenez et al., 2010​) which can impact on them coping with the demands of the course. ​McKenna et al. (2003)​ discuss the concept of ‘horizontal violence’ suggesting that its normal presentation is in the form of harassment which can manifest in the following forms “verbal abuse, threats, intimidation, humiliation, excessive criticism, innuendo, exclusion, denial of access to opportunity and the withholding of information” (​McKenna et al., 2003​, pg. 91).

Resilience it is suggested, can help those in caring professions adapt positively to stressful situations, manage emotional needs, develop effective coping strategies, enhance well-being and aid professional growth (​Lopez et al., 2018; McDonald et al., 2012; Stephens, 2013​). Resilience can be seen as “the capacity of people to effectively cope with, adjust or recover from stress or adversity” (​Burton et al., 2010​, pg. 1). ​Wagnild (2011)​ refers to it as ‘bouncing back’ and that resilient people are those who have “learned how to deal with life's inevitable difficulties” ​Wagnild (2011)​ p10).

The need for evidence-based interventions to increase resilience amongst trainee health professionals has been called for from academics and clinicians (​Glass, 2007​;  ​Grant and Kinman, 2014​; ​Hodges et al., 2005; Jackson et al., 2007; McAllister and McKinnon, 2009; McDonald et al., 2012; Thomas and Revell, 2016​). ​Pines et al. (2012)​ suggest that learning and teaching activities should be utilised to help improve resilience and self-confidence to better prepare those wanting to enter the nursing profession. Based on a review of published literature, this paper therefore aims to discuss ways to promote resilience in nurse education and training. In doing so key attributes and characteristics of resilient behaviour are identified and the teaching and learning approaches which lend themselves to building resilience are discussed.

**2**

**Literature search strategy and methods**

Although this paper is not a systematic review or meta-analysis of the literature, the approach taken to search for the literature was based on PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis, PRISMA, 2009). These principles were chosen in order to enable a coherent and structured approach to gaining the relevant literature.

The focus of the inquiry and key question identified was ‘what are the key learning and teaching methods to promote resilience in pre-registration nurse education and training?’ This question was developed through background reading and the experience of the authors in delivering pre-registration nurse education across a range of HEIs and programmes. Further objectives of the study were to identify the key attributes of resilient behaviour in student nurses, and to identify those teaching and learning activities which promoted the development of resilience.

Eligibility criteria were identified as inclusion of literature from 2000 to 2018, literature to be published in the English language, and the focus on learning and teaching interventions. Therefore key words used to search were: ‘student nur\*‘; ‘student’ ‘nurse education’; ‘resilience’; ‘learning and teaching’ and ‘training programmes’ which were used with Boolean Operators in 5 key databases. The databases chosen were Cochrane Library, Medline, CINAHL, Psychoinfo and Web of Science. The literature included a broad range of papers which are included in the review and consist of primary research studies, literature reviews and concept analysis papers.

​Fig. 1​ Outlines the results of the searches and the final number of papers included in the review (n = 18).



Literature search strategy depicting search criteria.

The final papers were individually critiqued using appraisal of title, abstract and whole article and a data extraction table completed (see ​Table 1​).

| Data extraction table. |
| --- |
| **Research studies** |
| **Authors/Title/Date** | **Country** | **Sample** | **Data collection/analysis** | **Key findings** |
| Broussard and Myers, 2010​ | USA | n = 5 | Interview/Constant comparative data analysis method. | Themes un-covered: preparedness, assessing damage and support, and lessons learnt. Indicates that resilience is developed over a period of time and from experiences. |
| ​Burton et al. (2010)​ | Australia | n = 16 | Questionnaires, pedometer step counts, and physical and haematological measures. | Intervention: READY ProgrammeThere was a significant improvement between baseline and post intervention scores |
| ​Fixsen and Ridge (2012)​ | UK | n = 9 | Constant comparison approach focusing on inductive coding. A dramaturgical framework. | Exposure to challenging situations can lead to the development of resilience. |
| ​Foley et al. (2002)​ | USA | n = 62 | Interviews/Hermeneutic interpretative approach | Developing advocating practices, three themes within that were: who I am, watching other nurses interact with patients, gaining confidence. |
| ​Jackson et al. (2011)​ | Australia | n = 231 | Content analysis/NVivo. | Resistance was achieved through; mutual support, naming oppression, acts of joint advocacy (backing each other up), reporting mistreatments, countering allegations of incompetence or blame and developing shared plans of action to address repression. |
| ​Lopez et al. (2018)​ | Singapore | n = 126 | Survey and focus groups interviews | Study recommends the use of teaching positive coping strategies and mindfulness to develop resilience. |
| ​Martin and Marsh (2006)​. | Australia | n = 402 | Analysis of sound item and factor properties. Between-network validity, correlation, path analysis, and cluster analysis. | 5 factors predict resilience, used to develop a 5C model of resilience: Confidence (self-efficacy), coordination (planning), control, composure (low anxiety) and commitment (persistence).Strategies for enhancing resilience: individual tasks, addressing negative views of self, goal setting, developing student's self-regulatory skills. |
| ​McDonald et al. (2012)​. | Australia | n = 14 | Case study method.Participant observation Post intervention interviews workshop evaluations, field notes and research journal completed after each workshop | Personal and organisational approaches required for fostering resilience.Importance of understanding the self is integral to building and maintaining resilience. |
| ​McLaughlin et al. (2007)​ | UK | n = 384 | Questionnaire | More research is needed to explore the attributes of successful nursing students and the potential contribution of psychological profiling to a more effective selection process. |
| ​Pike and O'Donnell (2010)​ | UK | n = 22 | Focus group/immersion then thematic content independent analysis | Two key themes from the focus group: Learner self-efficacy in relation to communication skills and the need for authenticity within clinical simulation. |
| ​Pines et al. (2012)​. | USA | n = 171 | The Stress Resiliency ProfileThe Psychological Empowerment Instrument.The Conflict Mode Instrument.Demographic Inventory/Descriptive and inferential correlational statistics | Study suggests that student would benefit from primary prevention learning to increase behavioural skills to manage interpersonal conflict in the workplace. |
| ​Taylor and Reyes (2012)​ | USA | n = 136 | Resilience Scale (RS) (​Wagnild, 2009; Wagnild and Young, 1993​)Self-efficacy Via the General Self-efficacy Scale (GSES). | Self-Efficacy and Resilience were not significantly altered during the course, although the SE scores were slightly higher at the end. |
| **Literature Reviews/Concept Analysis** |
| **Authors/Date/Country** | **Findings** |
| ​Grant and Kinman (2014)​ UK | Background discussion - helping professions have higher levels of emotional stressors resulting in potential burnout and stress, poor performance and high attrition.Identifies - students of helping professions can have increased stress and distress from the conflicting demands of being a student and an emerging professional.The need to have emotional resilience in curriculum.Emotional resilience - important for professionals help with adapting positively to stressful working conditions, manage emotional demands and foster effective coping strategies improve wellbeing and enhance personal growth.Identifies four competencies that are likely to be helpful in training students to become resilient professionals: Reflective ability, Emotional intelligence, social confidence and social support. |
| ​Hodges et al. (2005)​. USA | Nursing continues to be framed by an ever-changing environment with roles being subjected to influence that change with technology, expectation and policies.High attrition from the profession and assert that Nurse Education must take some responsibility for their part in this through the educational process. Nurses need to be resilient to changes and be able to sustain practice. Identify  Moen, 1997​ work around turning points within professional longevity and stamina and critical points for nurses. Promotes the use of Parse's theory of dynamic rational synchrony as an appropriate framework to promote resilience. Human Becoming School of Thought - looking at learning from a human perspective so resilience and professional stamina are considered expected outcomes of the education journey.Learning should focus on what students have done well. Teaching students how to develop survivor's pride, a well-deserved feeling of accomplishment felt following persevering in the face of adversity. |
| ​Thomas and Revell (2016)​ USA | Three questions:Total of 9 publications included in the review.The concept of resilience is well understood however, its application and context within student nurses is relatively new. Need for additional research to help define the concept within this context. The need to have further research and understanding of what affects a student's level of resilience and how it can be enhanced is required. |
| ​Robb (2012)​ USA | Use the Walker and Avant model of conceptual analysis to explore self-efficacy based on Bandura's definition of self-efficacy. Identifies a link between self-efficacy and academic performance. Finding: creating a personalised classroom structure appears to influence students' perceived self-efficacy ensuring that student engagement through empowerment promotes increased self-efficacy beliefs and motivation. Useful strategies:Cooperative learning or PBLAccurate feedbackClinical simulationClinical journaling |
| ​Rutter (2006)​ UK | Explores the theoretical underpinning of resilience including: difference in response to environmental hazardSteeling effectRisk and protectionGene – Environment interactionFour further lessons of exposure, circumstances, dealing with stress and after experience |
| ​Stephens (2013)​ UK | Uses the Noris method of concept analysis.Explores key concepts of resilience and describes these according to antecedents, attributes and consequences.Antecedents - perceived stress and/or adversity.Attributes (also seen as protective factors) - personal characteristics and social supportConsequences – integration, development of personal control, psychological adjustment and personal growth.Nursing student resilience model represents the process of development of enhances coping/adaptive abilities and well-being as a result of cumulative successes from utilising protective factors when facing perceived adversity/stress |

In light of the research questions and objectives, the following areas were identified for discussion: key attributes; learning and teaching approaches to promote resilience in nurse education, educational programmes developing resilience and supporting transition.

**3**

**Resilience: key attributes**

​Rutter (2006)​identifies that “resilience is an interactive concept that refers to a relative resistance to environmental risk experiences or the overcoming of stress or adversity” (​Rutter, 2006​, pg 1) and has been found to help those in caring professions adapt to stressful working environments, cope with emotional needs, develop effective coping strategies, improve wellbeing and professional growth (​Collins, 2008; McDonald et al., 2012; Morrison, 2007; Stephens, 2013​). It is therefore important to consider building resilience in nurse education programmes. Key components of resilience or characteristics of resilient behaviour have been identified by the authors (see ​Fig. 2​). These include attributes such as humour, a positive outlook (optimism), perseverance and adaptability (Grant and Kinman, 2014; ​Rutter, 2006​). Three characteristics that appear frequently in the literature are; self-efficacy, confidence and reflective ability.

Figure 2: of resilient behaviour.



**3.1**

**Self-efficacy**

Self-efficacy has been described by authors as a key characteristic of resilient behaviour (​Earvolina-Ramirez, 2007; Martin and Marsh, 2006; McLaughlin et al., 2007; Taylor and Reyes, 2012​). Self-efficacy has been defined as “people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave” (​Bandura and Ramachaudran, 1994​; pg. 2). In literature, the notion of self-efficacy is most often related to Bandura's theory, which argues that perceived self-efficacy has a major impact upon human functioning. This is because it affects behaviour by influencing ‘aspirations, outcome expectations, affective proclivities, and perception of impediments and opportunities in the social environment’ (​Bandura, 1995, 1997, 2006​). These beliefs can determine a range of outcomes. For example, the challenges and goals individuals set for themselves and their commitment to them and resilience to adversity (​Bandura, 2006​).

Self-efficacy has been described as a ‘fundamental’ concept in nursing education (​Robb, 2012​). Perceptions of personal competence, or ‘self-efficacy’ (​Bandura, 1986, 1997​), are considered to be the most significant predictor of all motivational constructs (​Graham and Weiner, 1996​). Motivation for learning and nursing are important factors in professional development and studies have shown that self-efficacy can determine the outcome of student problems, career progress, cognitive engagement, academic and clinical performance, attrition, sense of belongingness and psychological health (​Levett-Jones et al., 2008; Ofori and Charlton, 2002; Walker et al., 2006​).

According to ​Robb (2012)​ developing self-efficacy in nursing students potentially enables the theory-practice gap to decrease and facilitates the acquisition of clinical skills. These findings have been supported by others, as studies have suggested that greater self-efficacy helps to positively re-enforce academic achievement (​Choi, 2005​), improve the ability to overcome challenges (​Clayton et al., 2010​) and improve willingness to apply effort when learning (​Landis et al., 2007​). Therefore, self-efficacy development may not only support academic and practice performance in nursing students but also may enable them to manage the interpersonal challenges they encounter in practice. ​Gillespie et al. (2007)​assert that high levels of resilience lead to increased levels of self-efficacy thus reinforcing the importance of building resilience in nursing students. (​Taylor and Reyes, 2012​).

**3.2**

**Confidence**

Nursing demands that care is provided with confidence (seen as another characteristic of resilient behaviour, ​Fig. 2​) and Brown and colleagues (2003) suggest that increasing nursing students’ confidence will have a significant impact upon their performance. Although literature surrounding confidence specifically in relation to nursing students is sparse, ​Bradbury-Jones and colleagues (2007)​ suggest that increased confidence and empowerment improve motivation to learning.

Placement experiences are designed to help prepare student nurses for work in the healthcare setting. However, these too have been found to impact upon students’ self-confidence as they may experience emotionally challenging situations they have not been trained to deal with effectively (​Jack and Donnellan, 2010​).

Brown and colleagues (2003) studied ‘the meaning and influences of professional confidence as perceived by nursing students’ who were enrolled in a four-year generic baccalaureate nursing programme in Canada. They found that the meaning of professional confidence involved the following attributes; “feeling, knowing, believing, accepting, doing, looking, becoming, and evolving” (​Brown et al., 2003​, pg. 165). Furthermore, influences that developed confidence were found to occur both prior to entering nursing, and during the nursing programme (​Brown et al., 2003​). Brown and colleagues (2003) suggest that increasing nursing students' confidence will have a significant impact upon performance.

Positive reinforcement has been identified as a key determinant of students’ perceived level of self-confidence (​Grey and Smith, 2000, Hecimovich and Volet, 2011​). In contrast, Brown and colleagues (2003) identified impediments to developing professional confidence. These included; a devalued image of nursing, programme issues, incongruent course expectations, insufficient clinical continuity, time pressures, grading and competition.

Developing students’ confidence throughout their nursing programme may therefore be fundamental to also developing their resilient behaviour.

**3.3**

**Reflective ability**

Reflective ability is seen as another key characteristic of resilient behaviour. There are a number of definitions of reflective practice identifying a structured and considered approach to the process (​Ng et al., 2015​). ​Ng et al. (2015)​ state that “reflective practice … refers to a way of practising, emphasising processes of professional consideration – based on multiple sources and conceptions of knowledge –before, after and in the midst of professional actions” (pg. 462). Reflection is an area of nursing practice that is used widely to support learning and development (​Duffy, 2007​) and is taught in undergraduate nursing programmes to ensure nurses are able to learn from the experiences they have and take that learning to the new situations that they encounter. Professional regulatory processes internationally have a requirement for reflection to assure that nurses are ‘fit to practice’ (Nursing and Midwifery Council, ​NMC, 2015​). Therefore, the notion of reflection is one that is already an aspect of the experience of both student and qualified nurses.

As indicated, the ability to reflect has been identified as an important attribute in many explanations of resilience development. Five strategies have been identified by ​Jackson et al. (2007)​ to help develop resilience in nurses. These include; becoming more reflective to promote emotional strength and assist in ‘meaning-making’ in order to transcend an ordeal (​Jackson et al., 2007​).

​Broussard and Myers (2010)​ identify the factors that enabled school nurses to demonstrate their resilience in the face of a hurricane. One of the main themes uncovered in their research was the notion of ‘lessons learnt’, identified through reflection. They concluded that resilience is built over time and through reflection on experiences (​Broussard and Myers, 2010​). In support of the notion of building resilience through reflection, is the idea that sharing experiences through structured peer support is important in coping with challenging situations (​Fixsen and Ridge, 2012​). Although, both qualitative studies were small scale in terms of sample size they support the notion that using reflection as a learning tool helps the building of resilience over time.

**4**

**Learning and teaching approaches to promote resilience in nurse education**

Resilience is an important attribute in nursing. Traditionally, nurse education has focused on teaching students about the biopsychosocial sciences, professional practice and the underpinning evidence base that supports nursing, rather than on developing students’ own personal resilience. Work in general educational settings has been undertaken for some time in exploring how to develop resilience in school children in relation to their personal development, wellbeing and academic achievement (​Brooks, 2006; Cahill et al., 2012, Public Health England, PHE, 2014​). Thus, understanding some general educational elements of resilience building will be useful for consideration within a higher education setting, especially around the need to positively manage key transitions for students.

Following an investigation into educational and psychological correlates of academic resilience, ​Martin and Marsh (2006)​ identified five key factors that predicted academic resilience in Australian high school students. These are; self-efficacy, control, planning, low anxiety, and persistence. From these findings, ​Martin and Marsh (2006)​ developed a five-factor model incorporating; “confidence (self-efficacy), coordination (planning), control, composure (low anxiety), and commitment (persistence,” pg. 277). They suggest that interventions that are created to enhance resilience should focus on these five factors to enable more targeted interventions and support (​Martin and Marsh, 2006​). It may be appropriate to consider ways to support these five factors when developing nurse education programmes to build resilient characteristics.

In relation to nurse education and the education of other health care professionals, ​McAllister and McKinnon (2009)​ state that; “resilience theory should be part of the educational content and taught in a way that promotes reflection and application to give students strength, focus and endurance in the workplace … resilience and similar qualities ought to be emphasised in clinical experience courses, internships, work integrated learning and other work experience courses” (pg. 1). They also assert that all undergraduate programmes related to health professionals should include the following; discussion of resiliency, “predictors of resilience (such as cognitive ability, adaptability, positive identity, social support, coping skills, spiritual connection) and the ability to find meaning in adversity” (​McAllister and McKinnon, 2009​, pg. 375). Furthermore, they support the idea that issues surrounding resilience can be strengthened and learned through educational experiences. The challenge for universities is to embed programmes of education that promote the development of resilience in students.

**5**

**Educational programmes to develop resilience**

​Taylor and Reyes (2012)​ undertook pre and post tests using resilience scales (​Wagnild, 2009; Wagnild and Young, 1993​) during both early and late semester in Baccalaureate nursing students. They found that although there was no statistically significant difference in resilience score, the conclusions were that perceptions of self-efficacy and resilience may be enhanced through successfully overcoming the challenges that nursing programmes pose. Other work has included the intervention of developed programmes of education to enhance resilience. ​Burton et al. (2010)​ conducted a study at The University of Queensland (Australia), recruiting administrative staff, to test the effectiveness of resilience training on adults who may suffer from “stress or stress induced depressive symptoms” (pg. 267). Specifically, they created ‘a psychosocial resilience training programme’ entitled Resilience and Activity for Every Day (READY) to increase levels of “resilience and psychosocial well-being in adults” (pg. 267). They also examined “the potential effectiveness of the programme to promote subjective well-being, and reduce symptoms associated with depression and stress” (pg. 267). The READY programme involved the analysis of five key features of resilience. These are; “positive emotions, cognitive flexibility (acceptance), life meaning, social support, and active coping strategies (including physical activity,” pg. 268).

​Burton et al. (2010)​ utilised the Acceptance and Commitment Therapy (ACT) approach, which is described as a Cognitive Behavioural Therapy that uses acceptance and mindfulness strategies, and commitment and behaviour change strategies to produce psychological flexibility and resilience. Results from this approach showed improvements to a range of characteristics including; measure of “stress self-acceptance (positive self-attitude), valued living (actions consistent with life priorities and desires), and autonomy (self-determination, self-regulation,” pg. 274).

​McDonald et al. (2012)​ examined a work-based, educational intervention to promote personal resilience in nurses and midwives working within a clinical setting. The educational intervention was administered via six resilience workshops alongside a mentoring programme that took place over a six-month period. Workshops included the following themes: “mentoring, establishing positive nurturing relationships and networks, building hardiness, maintaining a positive outlook, intellectual flexibility and emotional intelligence, achieving work/life balance, enabling spirituality, reflective and critical thinking, and moving forward and planning for the future” (​McDonald et al., 2012​, pg, 379). Data was collected pre-intervention where participants were interviewed about workplace adversities and the effects of these on their professional and personal lives. Post-intervention, two interviews were conducted where participants discussed how the workshops had improved their health, wellbeing and personal resilience. Results showed that participant's personal resilience was strengthened following the intervention. Furthermore, insights into the relationship between resilience and health, wellbeing, fulfilment and commitment also transpired as a result of the intervention. ​McDonald et al. (2012)​ provide evidence to suggest that work-based, educational interventions that focus on personal resilience “have significant potential to empower both clinicians and students to withstand the workplace adversity they will no doubt face at some point in their career” (pg. 141).

**6**

**Supporting transition through building resilience**

Nursing programmes are highly demanding as they require students to undertake rigorous academic studies alongside developing professional competence and confidence. Initially, students may hold unrealistic views of nursing practice; inconsistencies between belief and experience may lead to cognitive dissonance when in actual clinical practice (​Price, 2009​). Thus, a nursing student has two key transitions with which to adapt, firstly becoming a university student and secondly becoming part of the nursing team (​Leducq et al., 2012​). Being a resilient individual will therefore provide the perseverance and adaptability in order to cope with these transitions (Grant and Kinman, 2014; ​Rutter, 2006; Wagnild, 2011​). It is vital that both academic and professional integration be combined, and nursing students should be given the opportunity to experience the stages of the transitional period to better prepare them for their clinical role (​Andrew et al., 2011​).

It has been asserted that transformative education may be utilised to help improve levels of resilience and in how to deal with these transitions. Transformative education “seeks to use critical and constructive thinking methods to inspire learners to look deeply into practices, to develop creative ways of thinking, to improve problem-solving skills and to strive to further social good through concerted personal actions” (​McAllister and McKinnon, 2009​, pg. 5).

​Martin and Marsh (2006)​ five factor model described earlier may therefore be useful in preparing nursing students for these transitions, for example ensuring that they understand what to expect and how they can adapt to differing situations prior to joining the nursing team at the first clinical placement. ​Leducq et al. (2012)​ reported that the clinical placement experience can be instrumental in the student's decision to continue their course. Specifically, when a student is aware of what to expect in the clinical setting the transition experience is less stressful (​Schumacher and Meleis, 1994​). Therefore, it has been asserted that it is the university provider's responsibility to prepare students for the ‘reality’ of clinical placements rather than idealised views of nursing (​Wood, 2005​). This initial preparation is crucial to students in providing a supportive environment and to allow the necessary confidence for students to approach clinical practice.

In support of this notion, ​Lopez et al. (2018)​ found that undergraduate nursing students reported high levels of stress whilst on clinical placements. This was found to be due to a lack of support from clinical staff and preceptors. Consequently, those who gained both peer and clinical staff support; and developed coping strategies were able to build resilience over time. ​Lopez et al. (2018)​ state that “it is necessary to mentally prepare and equip nursing students to face the challenges during their clinical placements through resilience programs” (pg. 4).

​Hodges et al. (2005)​ assert that introducing students to the teaching-learning model of developing resilience prior to challenging clinical experiences “enhances students' ability to move into a survivor mode characterised by perseverance and a willingness to ask for help, and to transfer that ability later as an educational outcome of professional resilience. Without such intentioned teaching praxis, cumulative learning and transfer are less likely to occur” (pg. 3). In terms of teaching methods, ​Hodges et al. (2005)​have found that strength based assessments and competency based evaluations are effective in teaching nurses’ resilience. Whilst little can be done to change the nursing environment, the skills needed to deal with these difficulties in practice can be taught (​Hodges et al., 2005​).

**7**

**Discussion - SHAPING the curriculum to enhance resilience in nursing programmes**

It is suggested that within an educational setting, resilience can be improved through enhancing protective factors (​Gu and Day, 2007​). For example, making the education environment caring and learner-centred, whilst ensuring a supportive social community and peer relationships (​Gu and Day, 2007​). ​Lethbridge et al. (2011)​ build upon this notion of protective factors by focusing on empowerment. They suggest that empowerment is critical to developing resilience and that education programmes should promote this using reflective learning. ​Jackson et al. (2007)​ found that it is both possible and favourable to “build resilience as a strategy for assisting nurses to survive and thrive. Nurses' occupational settings will always contain elements of stressful, traumatic or difficult situations, and episodes of hardship. Therefore, combating these adverse effects through minimising vulnerability and promoting resilience has the potential to impact positively on nurses’ daily experiences” (pg. 7).

​Burton et al. (2010)​ identify the teaching of mindfulness as part of their ACT approach. This is supported by ​Doblier et al. (2010)​ who identified mindfulness as important in developing self-leadership in individuals. They developed the concept of stress related growth asserting that for growth to occur “some degree of psychological discomfort must occur” (​Doblier et al., 2010​, pg. 136). Within the nurse education setting students are likely to experience many situations where they feel uncertain or anxious. Therefore scheduled facilitated learning to recognise this and develop strategies to deal with it can result in growth. Moreover, nursing facilities should consider the inclusion of reflective learning and mindfulness strategies within the nursing curricula as part of self-awareness and leadership education.

​Lethbridge et al. (2011)​ produced an integrative literature review to consider the relationship between empowerment and reflective thinking and identified that students using journals or diaries to demonstrate reflective ability was helpful but that this could be enhanced by educators themselves. ​Hodges et al. (2005)​ also identify writing reflectively as an important factor in developing resilience. In their concept analysis of professional resilience, they suggest that reflective writing helps develop resilience and critical thinking skills and emphasise the use of journaling and peer support as part of the reflective process.

When considering developing protective factors in the curriculum to support resilient behaviour, ​Jackson et al. (2011)​ identify the importance of peer mentoring/buddy groups and action learning sets in supporting students to manage potential challenge or conflict within clinical placements. ​Foley et al. (2002)​ study about how students learn advocacy skills, identified the importance of positive role models. In addition, by hearing experienced nurse's reports on developing relationships and connecting with patients as methods of managing transition advocacy could be better understood. Thus, a combination of actual clinical placement experience as well as the use of nursing narratives within the education setting can assist in promoting understanding in nursing students.

Simulation is a pedagogical approach that is increasingly used within nursing education to enable nursing students to experience clinical situations within a safe environment. The ability to practice individual clinical tasks, communication and team working are seen as having a positive impact on confidence levels (​Liaw et al., 2011​). ​Pike and O'Donnell (2010)​, in their study of the impact of clinical simulation on levels of self-efficacy, indicate two key elements for success are the inclusion of cognitive and non-technical skills and the authenticity of the learning situation. ​Kelly et al. (2016)​ assert that the use of simulation within undergraduate health professional programmes facilitates opportunities for students to rehearse and refine the practices of their discipline and in so doing, foster growth of professional identity. Khalaila's study (​2014​) of the use of simulation with first year nursing students prior to their first clinical placement demonstrated a significant reduction in anxiety and a rise in self-confidence following the clinical placement.

Approaches to developing the learning and teaching of resilient behaviour in nursing programmes are varied and multi-factorial, however from the literature it is possible to identify key pedagogical learning and teaching strategies which support this.

Universities, colleges and other institutions that provide nurse education are governed by both these international requirements as well as their own national regulations (​ANMAC, 2012, Nursing and Midwifery Council, 2010​,​Nursing and Midwifery Council​, 2018​; World Health ​Ofori and Charlton, 2002​). Nursing practice is a dynamic endeavour, continually evolving to meet the health care challenges within a global environment. Therefore, this suggests that nurse education must also be a dynamic process involving a range of appropriate teaching and learning strategies.

Although nursing programmes vary internationally in terms of the length, academic level and where taught (clinical or university setting), there are common factors within a curriculum relating to content and learning experiences (​World Health Organization, 2009​). If resilience is seen as a valuable attribute then there is a need to identify how teaching that develops resilience can be embedded within existing curricula. Thus, rather than seeing it as a distinct topic it needs to be integrated within a curriculum to ensure that the variety of learning methods and content areas both ensure students understand the concept of resilience, and have opportunities to develop the associated attributes of resilience.

Effective learning is often seen to be that which places the student at the centre of the activities (​Dunlosky et al., 2013​) and uses a blended approach to delivery (​Stockwell et al., 2015​). Thus no one single approach would seem to be the model way to teach resilience. Indeed, the approaches discussed above offer multi-factorial designs to facilitate the building of resilience in nurse education programmes. Therefore, an eclectic model that draws from evidenced based practice and is appropriate to the local context is proposed. What can be asserted is that there are some common pedagogical approaches that facilitate resilience building which have been identified from the literature and these can be found in ​Fig. 3​.

Figure 3: Learning and teaching strategies to promote resilient behaviour.



The learning and teaching strategies proposed in ​Fig. 3​ are supported by the research discussed in this paper. Further, it reflects in part a form of transformative education whilst promoting individual empowerment through work-based educational interventions and teaching strategies.

**8**

**Conclusion**

As demonstrated, there is a growing body of evidence to suggest that resilience is a valuable attribute associated with successful nursing practice and as such, should be given due consideration when developing nursing curricula. This is supported by the importance of developing ethical and professional values (​International Council of Nurses, 2012​) in the nursing student to enable them to manage challenges in practice.

The evidence discussed within this literature review indicates that resilient qualities can be developed through appropriate learning opportunities. Further, from the research discussed, the core concepts of resilience, self-efficacy, confidence, and reflective ability, have been identified as important within nursing curricula. Facilitation of this learning is effectively achieved through the adoption of peer activities, reflective practice, directed study, problem based learning/enquiry based learning and experiential learning (​Fig. 3​). Future research should attempt to evaluate further the use of these strategies within specific programmes of study.

**Funding sources**

Funding for this project was provided by Health Education West Midlands.

**Ethical approval details**

Not applicable.

​

**Declaration of competing interest**

There are no conflicts of interest known to authors.

**Acknowledgements**

Health Education West Midlands for their support in funding this project.

**References**

iThe corrections made in this section will be reviewed and approved by a journal production editor. The newly added/removed references and its citations will be reordered and rearranged by the production team.

* Aiken, L.H., Sermeus, W., Van den Heede, K., Sloane, D.M., Busse, R., McKee, M., Bruyneel, L., Rafferty, A., Griffiths, P., Moreno-Casbas, M., Tishelman, C., Scott, A., Brzostek, T., Kinnunen, J., Shwendimann, R., Heinen, M., Zikos, D., Strømseng Sjetne, I., Smith, H., Kutney-Lee, A., 2012. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. Br. Med. J. 344, 1717.
* Andrew, N., Robb, Y., Ferguson, D., Brown, J., 2011. ‘Show us you know us’: using the senses framework to support the professional development of undergraduate nursing students. Nurse Educ. Pract. 11, 356–359.
* ANMAC, 2012. Registered Nurse Accreditation Standards. <http://www.nursingmidwiferyboard.gov.au/News/2012-11-01-ANMAC-standards.aspx>. (Accessed 1 March 2018).
* Bandura, A., 1986. Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice-Hall, Inc, New Jersey.
* Bandura, A., Ramachaudran, V.S., 1994. In: Encyclopaedia of Human Behaviour, 4. Academic Press, New York, pp. 71–81.
* Bandura, A., 1995. Self-efficacy in Changing Societies. Cambridge University Press, Cambridge.
* Bandura, A., 1997. Editorial: the anatomy of stages of change. Am. J. Health Promot. 12, 8–10.
* Bandura, A., 2006. Guide for constructing self-efficacy scales. In: Pajares, F., Urdan, T. (Eds.), Self-efficacy Beliefs of Adolescents. Information Age Publishing, Greenwich, pp. 307–337.
* Bradbury- Jones, C., Sandbrook, S., Irving, F., 2007. The meaning of empowerment for nursing students: a critical incident study. J. Adv. Nurs. 59, 342–351.
* Brooks, J., 2006. Strengthening resilience in children and youths: maximizing opportunities through schools. Child. Sch. 28, 69–76.
* Broussard, L., Myers, R., 2010. School nurse resilience: experiences after multiple natural disasters. J. Sch. Nurs. 26, 203–211.
* Brown, B., O’Mara, L., Hunsberger, M., Love, B., Black, M., Carpio, B., Crooks, D., Noesgaard, C., 2003. Professional confidence in baccalaureate nursing students. Nurse Educ. Pract. 3, 163–170.
* Burton, N.W., Pakenham, K.I., Brown, W.J., 2010. Feasibility and effectiveness of psychosocial resilience training: a pilot study of the READY programme. Psychol. Health Med. 15, 266–277.
* Cahill, H., Beadle, S., Farrelly, A., Foster, R., Smith, K., 2012. Building Resilience in Children and Young People. A literature review for the Department of Education and Early Childhood Development, Victoria, Australia.
* Choi, N., 2005. Self-efficacy and self-concept as predictors of college students’ academic performance. Psychol. Sch. 42, 197–205.
* Clayton, K., Blumberg, F., Auld, D.P., 2010. The relationship between motivation, learning strategies and choice of environment whether traditional or including an online component. Br. J. Educ. Technol. 41, 349–364.
* Collins, S., 2008. Statutory social workers: stress, job satisfaction, coping, social support and individual differences. Br. J. Soc. Work 38, 1173–1193.
* Doblier, C., Jaggers, S., Steinhardt, M., 2010. Stress related growth: pre-intervention correlates and change following a resilience intervention. Stress Health 26, 135–147.
* Dunlosky, J., Rawson, K.A., Marsh, E.J., Nathan, M.J., Willingham, D.T., 2013. Students’ learning with effective learning techniques promising directions from cognitive and educational psychology. Psychol. Sci. Publ. Interest 14, 4–58.
* Duffy, A., 2007. A concept analysis of reflective practice: determining its value to nurses. Br. J. Nurs. 16, 1400–1407.
* Earvolina-Ramirez, M., 2007. Resilience: a concept analysis. Nurs. Forum 42, 73–82.
* Fixsen, A., Ridge, D., 2012. Performance, emotion work and transition: challenging experiences of complementary therapy student practitioners commencing clinical practice. Qual. Health Res. 22, 1163–1175.
* Fahrenwald, N., Basset, S., Tschetter, L., Carson, P., White, L., Waterboer, V.J., 2005. Teaching core nursing values. J. Prof. Nurs. 21, 46–51.
* Foley, B.J., Minick, P., Kee, C.C., 2002. How nurses learn advocacy. J. Nurs. Scholarsh. 34, 181.
* Francis, R., 2013. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry. The Stationary Office, England.
* Gillespie, B.M., Chaboyer, W., Wallis, M., Grimbeek, P., 2007. Resilience in the operating room: developing and testing of a resilience model. J. Adv. Nurs. 59, 427–438.
* Glass, N., 2007. Investigating women nurse academics’ experiences in universities: the importance of hope, optimism and career resilience for workplace satisfaction. In: Oermann, M.H., Heinrich, K.T. (Eds.), Annual Review of Nursing Education. Springer, New York, pp. 111–136.
* Graham, S., Weiner, B., 1996. Theories and principles of motivation. In: Berliner, D.C., Calfee, R.(Eds.), Handbook of Educational Psychology. Macmillan, New York, pp. 63–84.
* Grey, M., Smith, L., 2000. The qualities of an effective mentor from the student nurses perspective: findings of a longitudinal qualitative study. J. Adv. Nurs. 32, 1542–1549.
* Grant, L., Kinman, G., 2014. Emotional resilience in the helping professions and how it can be enhanced. Health and Social Care Education 3, 23–34.
* Gu, Q., Day, C., 2007. Teachers resilience: a necessary condition for effectiveness. Teach. Teach. Educ. 23, 1302–1316.
* Hecimovich, M., Volet, S., 2011. Development of Professional Confidence in Health Education. Research evidence of the impact of guided practice into the profession. Health Educ. 111, 177–197.
* Hodges, H.F., Keeley, A.C., Grier, E.C., 2005. Professional resilience, practice longevity, and parse’s theory for baccalaureate education. J. Nurs. Educ. 44, 548.
* International Council of Nurses, 2012. The ICN Code of Ethics for Nurses. International Council of Nurses, Switzerland.
* Jack, G., Donnellan, H., 2010. Recognising the person within the developing professional: tracking the early careers of newly qualified child care social workers in three local authorities in England. Soc. Work. Educ. 29, 305–318.
* Jackson, D., Firtko, A., Edenborough, M., 2007. Personal resilience as a strategy for surviving and thriving in the face of workplace adversity: a literature review. J. Adv. Nurs. 60, 1–9.
* Jackson, D., Hutchinson, M., Bronwyn, E., Mannix, J., Peters, K., Weaver, R., et al., 2011. Struggling for legitimacy: nursing students stories of organisational aggression, resilience and resistance. Nurs. Inq. 18, 102–110.
* Jimenez, C., Navia‐Osorio, P.M., Diaz, C.V., 2010. Stress and health in novice and experienced nursing students. J. Adv. Nurs. 66, 442–455.
* Kelly, M., Berragan, E., Husebø, S., Litt, M., Orr, F., 2016. Simulation in nursing education—international perspectives and contemporary scope of practice. J. Nurs. Scholarsh. 48, 312–321.
* Khalaila, R., 2014. Simulation in nursing education: an evaluation of students’ outcomes at their first clinical practice combined with simulations. Nurse Educ. Today 34, 252–258.
* Kim, S., Flaskerud, J.H., 2007. Cultivating compassion across cultures. Issues Ment. Health Nurs.28, 931–934.
* Kinman, G., Jones, F., 2001. The work-home Interface. In: Jones, F., Bright, J. (Eds.), Stress: Myth, Theory and Research. Prentice Hall, London, p. 199.
* Landis, B.D., Altman, J.D., Cavin, J.D., 2007. Underpinnings of academic success: effective study skills use as a function of academic locus of control and self-efficacy. Psi Chi J. Undergrad. Res.12, 126–130.
* Leducq, M., Walsh, P., Hinsliff-Smith, K., McGarry, J., 2012. A key transition for student nurses: the first placement experience. Nurse Educ. Today 32, 779–781.
* Lethbridge, K., Andrusyszyn, M.A., Iwasiw, C., Laschinger, H.K.S., Fernando, R., 2011. Structural and psychological empowerment and reflective thinking: is there a link?. J. Nurs. Educ. 50, 636–645.
* Levett-Jones, T., Lathlean, J., Higgins, I., McMillan, M., 2008. The duration of clinical placements: a key influence on nursing students’ experience of belongingness. Aust. J. Adv. Nurs. 26 (2), 8–16.
* Liaw, S.Y., Rethans, J.J., Scherphier, A., Piyanee, K.Y., 2011. Rescuing a patient in deteriorating situations (RAPIDS): a simulation-based educational programme on recognizing, responding and reporting of physiological signs of deterioration. Resuscitation 82, 1224–1230.
* Lopez, V., Yobas, P., Chow, Y.L., Shorey, S., 2018. Does building resilience in undergraduate nursing students happen through clinical placements? A qualitative study. Nurse Educ. Today 67, 1–5.
* Martin, A.J., Marsh, H.W., 2006. Academic resilience and its psychological and educational correlates: a construct validity approach. Psychol. Sch. 43, 267–281.
* McAllister, M., McKinnon, J., 2009. The importance of teaching and learning resilience in the health disciplines: a critical review of the literature. Nurse Educ. Today 29, 371–379.
* McDonald, G., Jackson, D., Wilkes, L., Vickers, M.H., 2012. A work-based educational intervention to support the development of personal resilience in nurses and midwives. Nurse Educ. Today 32, 378–384.
* McLaughlin, K., Moutray, M., Muldoon, O., 2007. The role of personality and self-efficacy in the selection and retention of successful nursing students; a longitudinal study. J. Adv. Nurs. 61, 211–221.
* McKenna, B.G., Smith, N.A., Poole, S.J., Coverdale, J.H., 2003. Horizontal violence: experiences of registered nurses in their first year of practice. J. Adv. Nurs. 42, 90–96.
* Moen, P, 1997. Women’s roles and resilience: Tragectories of advantage or tuming points?. In: Gotlib, I H, Wheaton, B (Eds.), Stress and adversity over the life course: Trajectories and turning points. Cambridge University Press, New York, pp. 133–156.
* Morrison, T., 2007. Emotional intelligence, emotion and social work: context, characteristics, complications and contribution. Br. J. Soc. Work 37, 245–263.
* Ng, S.L., Kinsella, E.A., Freisen, F., Hodges, B., 2015. Reclaiming a theoretical orientation to reflection in medical educational research: a critical narrative review. Med. Educ. 49, 461–465.
* Nursing and Midwifery Council, 2010. Standards for Pre-registration Nursing Education. Nursing and Midwifery Council, London.
* Nursing and Midwifery Council, 2015. How to Revalidate with the NMC. <https://www.nmc.org.uk/globalassets/sitedocuments/revalidation/how-to-revalidate-booklet.pdf>. (Accessed 12 January2018).
* Nursing and Midwifery Council, 2018. Standards for Pre-registration Nursing Education. Nursing and Midwifery Council, London.
* Ofori, R., Charlton, J.P., 2002. A path model of factors influencing the academic performance of nursing students. J. Adv. Nurs. 38, 507–515.
* Pearcey, P.A., Elliott, B.E., 2004. Student impressions of clinical nursing. Nurse Educ. Today 24, 382–387.
* Pines, E.W., Rauschhuber, M.L., Norgan, G.H., Cook, J.D., Canchola, L., Richardson, C., Jones, M.E., 2012. Stress resiliency, psychological empowerment and conflict management styles among baccalaureate nursing students. J. Adv. Nurs. 68, 1482–1493.
* Pike, T., O’Donnell, N., 2010. The impact of clinical simulation on learner self-efficacy in pre-registration nursing education. Nurse Educ. Today 30, 405–410.
* Price, S.L., 2009. Becoming a nurse: a meta‐study of early professional socialization and career choice in nursing. J. Adv. Nurs. 65, 11–19.
* Public Health England, 2014. Building Children and Young People’s Resilience in Schools. Public Health England, London.
* Robb, M., 2012. Self‐Efficacy with application to nursing education: a concept analysis. Nurs. Forum 47, 166–172.
* Rutter, M., 2006. Implications of resilience concepts for scientific understanding. Ann. N. Y. Acad. Sci. 1094, 1–12.
* Schumacher, K.L., Meleis, A.l., 1994. Transitions: a central concept in nursing. Image - J. Nurs. Scholarsh. 26, 119–127.
* Stephens, T.M., 2013. Nursing student resilience: a concept clarification. Nurs. Forum 48, 125–133.
* Stockwell, B.R., Stockwell, M.S., Cennamo, M., Jiang, E., 2015. Blended learning improves science education. Cell 162, 933–936.
* Taylor, H., Reyes, H., 2012. Self-efficacy and resilience in baccalaureate nursing students. Int. J. Nurs. Educ. Scholarsh. 9, 1–13.
* Thomas, R.J., Revell, S.H., 2016. Resilience in nursing students an integrative review. Nurse Educ. Today 36, 457–462.
* Wagnild, G.M., 2009. A review of the resilience scale. J. Nurs. Meas. 17, 105–113.
* Wagnild, G.M., 2011. The Resilience Scale User’s Guide for the US English Version of the Resilience Scale and the 14-item Resilience Scale (RS-14). The Resilience Centre, Montana.
* Wagnild, G.M., Young, H.M., 1993. Development and psychometric evaluation of the resilience scale. J. Nurs. Meas. 1, 165–178.
* Walker, C.O., Greene, B.A., Mansell, R.A., 2006. Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. Learn. Indiv Differ 16, 1–12.
* Willis, G.P., 2015. Raising the Bar. The Shape of Caring: A Review of the Future Education and Training of Registered Nurses and Care Assistants. Health Education England, London.
* Wood, S., 2005. The experiences of a group of pre-registration mental health nursing students. Nurse Educ. Today 25, 189–196.
* World Health Organization, 2009. Global Standards for the Initial Education of Professional Nurses and Midwives. World Health Organization, Geneva.