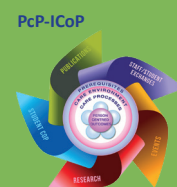


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CRITICAL REVIEW OF LITERATURE

A scoping review exploring how the conceptualisation of resilience in nursing influences interventions aimed at increasing resilience

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Abstract

Background: The development of a more resilient nursing workforce has been identified as a strategy to improve the individual's response to workplace adversity, which has positive implications for staff wellbeing and delivery of person-centred care. Strategies to increase resilience are largely focused on improving the ability to manage work-related stress.

Aim: To conduct a scoping review exploring how conceptualisations of resilience influence educational interventions designed to increase resilience in nurses and nursing students.

Methods: CINAHL, PubMed and Medline were searched. A PICO search strategy was used with the keywords *resilience* or *resilience based education* and *nurse* or *student nurse*. Additionally, *distress tolerance* or *emotional intelligence* or *professional quality of life* or *compassion fatigue* or *burnout* or *retention* were identified as associated keywords. Quantitative analysis captured the frequency of study characteristics. Qualitative, deductive content analysis was used in order to report the nature and effectiveness of resilience-based interventions.

Findings: Interventions predominantly included teaching of approaches that improve knowledge of and response to stress. Increase in resilience or proxy measures of resilience were identified in the majority of studies. Generalisation was limited by the small samples sizes and failure to consider the implications of organisational, individual and contextual factors across the evidence base.

Conclusions: Caution should be applied when designing resilience interventions that focus on the individual's responsibility to cope better with stress. This priority neglects the role of diversity, community and the need for the organisation to learn and grow in response to adversity.

Implications for practice:

- While the skills to manage the emotional consequences of healthcare practice are present at an individual level, they should be developed as part of a community that shares a critical dialogue, offers supportive relationships and enables reflective discussion
- When delivered as an inclusive, participatory and collaborative intervention, resilience becomes integral to practice development

Keywords: Scoping review, resilience, nursing, healthcare, resilience-based education

Background

Definitions of resilience quoted within the nursing literature tend to focus on the individual's self-efficacy, internal motivation to cope and ability to respond confidently to challenging situations. Terms such as recovery, personal strength and 'bounce-backability' often feature in descriptions of registered nurses who are seen as resilient (Hart et al., 2014; Turner, 2014). This conceptualisation of resilience is reminiscent of definitions found in the field of engineering, where the term resilient is applied to the description of a material which, when placed under pressure, returns to a steady state (Joseph, 2013).

In contrast, the ecological definition of resilience focuses on the positive outcomes that can result from instabilities within communities. This approach emphasises how instability can result in restructuring of systems driven by diverse and non-linear behaviours. It requires the mobilisation of resources and multiple approaches, which are able to withstand and survive adversity (Gunderson et al., 2012). This conceptualisation of resilience associates adversity with growth and new knowledge, and emphasises the role of communities and systems. While definitions within the nursing literature consider growth as a factor associated with resilience (Hart et al., 2014), the focus remains on the individual and places the responsibility of personal development with the person in isolation from their organisation or community.

The ecological conceptualisation makes the assumption that there is a fundamental connection between the complexity of the world we live in and resilience as a way to navigate that complexity (Walker and Salt, 2006). This is relevant to the current context of healthcare practice, which is regarded globally as an increasingly challenging and complex environment. These circumstances contribute to significant workplace adversity associated with excessive workloads, lack of autonomy, bullying and the need to absorb continuous organisational change (Jackson et al., 2007). As a result of their association with poor retention in the nursing profession, challenges such as these are related to the international shortage of registered nurses (McAllister and McKinnon, 2009; Thomas and Asselin, 2018).

Additionally, implications for the quality of patient care are significant, as workplace adversity is strongly connected to poor patient experience (Leiter et al., 1998; Raleigh et al., 2009; Maben et al., 2012). In clinical settings where the wellbeing of the workforce is not attended to, studies have demonstrated a lack of empathy (Ramirez et al., 1996; Taylor et al., 2007), poor communication skills (Heaven and Maguire, 1998) and an increased occurrence of errors and mistakes (Firth-Cozens and Greenhalgh, 1997; Taylor et al., 2007; Bennett et al., 2010). These negative factors have been collectively described as compassion fatigue (Jackson et al., 2007).

Based on the premise that resilience could act as a mitigating factor to workplace adversity (Jackson et al., 2007; Hart et al., 2014; Thomas and Asselin, 2018) and poor patient outcomes (Maben et al., 2012) an exploration of the literature that discusses the nature and effectiveness of resilience-based educational interventions is pertinent to inform workforce and practice development strategy. An initial search demonstrated the complex and heterogeneous nature of the literature relating to such interventions and a number of studies that would not be eligible for a more precise systematic review. Furthermore, the way the conceptualisation of resilience has informed the nature of resilience-based educational interventions, and the implications of this, was the main consideration. Consequently, a scoping review method was adopted to capture working definitions and consider the conceptual boundaries of the topic (Peters et al., 2015). Scoping reviews are beneficial in this context to synthesise research evidence and map existing literature in a chosen field. This enables 'reconnaissance' – referring to a process of clarifying working definitions and the conceptual boundaries of a topic or field (Peters et al., 2015).

Aim

The aim was to conduct a scoping review exploring how conceptualisations of resilience influence interventions to increase resilience in registered nurses and nursing students. More specifically, the objectives were:

- To identify the nature of interventions aiming to improve resilience in registered nurses and student nurses
- To explore the influences and outcomes of these interventions
- To discuss research methodologies adopted to measure the effectiveness of interventions

Method

Systematic scoping reviews are used in order to inform research agendas and present a broad overview of evidence pertaining to a topic (Peters et al., 2015). Arksey and O'Malley (2005) suggested there are four reasons to undertake a scoping review: to examine the extent, range and nature of research activity; to determine the value of undertaking a full systematic review; to summarise and disseminate research findings; and to identify research gaps in the existing literature. In this case, the aim was to explore the available research activity and its relationship with conceptualisations of resilience to allow for the development of hypotheses to inform the direction of future intervention and research (Tricco et al., 2016).

In order to conduct a scoping review, a protocol was used, including predefined objectives and methods (Peters et al., 2015). Peters and colleagues' guidelines were used to inform the protocol, including both method and reporting.

Search strategy

A preliminary search was conducted to assess the range and nature of evidence relating to resilience-based educational interventions. This informed the focus of the review and the search strategy, as it was possible to identify trends in outcome measures associated with resilience. A PICO (population, intervention, comparator and outcome) format was used. This is a well-known strategy for framing 'foreground' research questions, which allows the question to be broken up into its different components (Sackett et al., 1997; Aslam and Emmanuel, 2010).

- Population: registered nurses or student nurses being the predominant professional
- Intervention: resilience-based education
- Comparator: no exposure to resilience-based education where a control group was included in the study
- Outcome:
 - Increased:*
 - Resilience
 - Distress tolerance
 - Emotional intelligence
 - Professional quality of life
 - Retention
 - Decreased*
 - Compassion fatigue
 - Burnout

Literature searches were conducted using the following three databases; CINAHL (Cumulative Index to Nursing and Allied Health Literature), PubMed and Medline in 2018. The identified terms above were used as keywords. Following this, Google was used to identify any grey (difficult to locate) literature.

Inclusion criteria

- Timeframe: limited to the past 10 years to ensure educational strategies responsive to current demands were obtained

- Types of participants: to match the review questions, a primary focus on registered nurses or nursing students was a requirement
- Concept: face-to-face interventions, designed to increase resilience in registered nurses or student nurses
- Context: healthcare and higher education environments, in particular the nursing and student nurse community. No geographical constraints were placed on the scoping review but only English language articles were considered
- Explicit methodology and outcomes: any empirical article or evaluation study. No literature reviews were considered

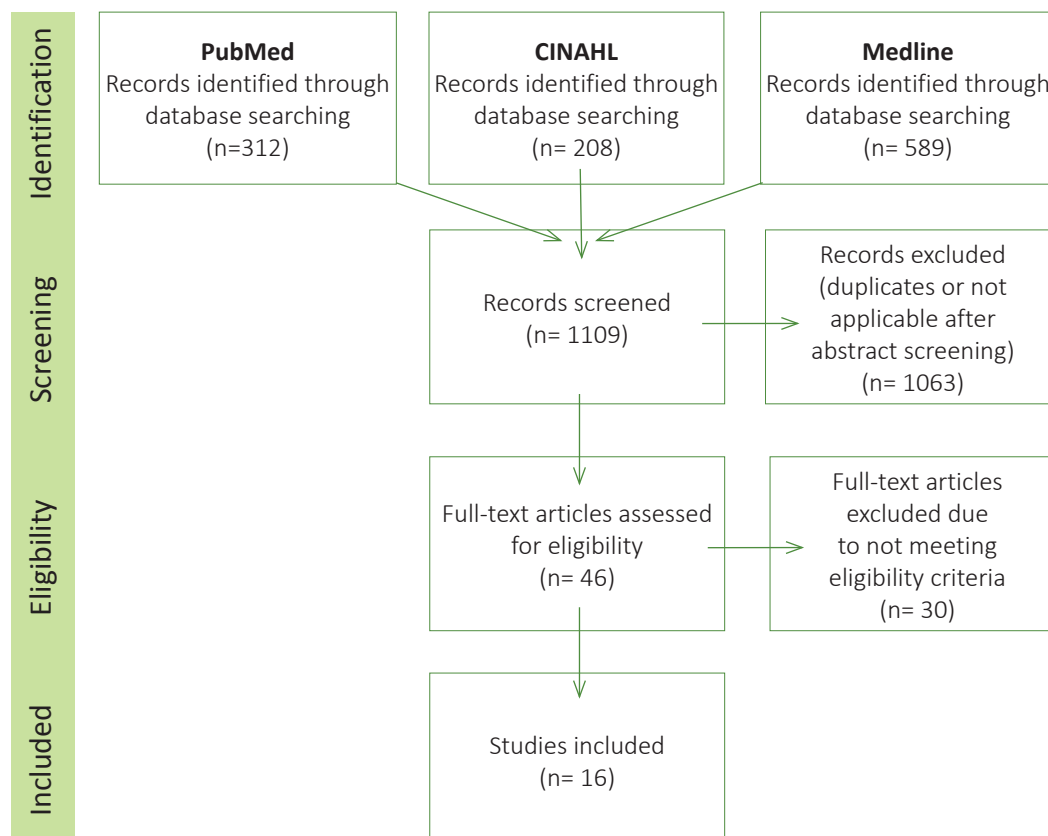
Exclusion criteria

- Timeframe: publication more than 10 years ago
- Types of participants: professionals and students from non-nursing disciplines
- Concept: online-only interventions were excluded because they are significantly different and may have disrupted the focus of the review
- Explicit methodology: articles that were not empirical studies and literature from non-peer review journals

Inclusion/exclusion criteria were used as a checklist for level 1 screening of titles and abstracts. Level 2 screening involved reading of full texts and again matching to the inclusion/exclusion criteria. Following this screening process, 16 articles were identified as relevant to the research aim.

Figure 1 shows the search decision flowchart, including the number of articles returned from each database using a combination of search terms. A Google search did not identify any grey literature. We did not appraise the methodological quality or risk of bias of the included articles. This is consistent with guidance on scoping review conduct (Peters et al., 2015).

Figure 1: Flowchart for the scoping review process



The data synthesis involved quantitative analysis that focused on a frequency itemisation of the location and nature of the research conducted. This was followed by qualitative analysis in the form of deductive content analysis (Elo and Kyngäs, 2008), with the broad brief to consider the nature and effectiveness of resilience-based educational interventions and the implications of how researchers conceptualised reliance to inform their approach. Themes were generated by the authors independently developing memos to describe the occurrence and nature of categories in the data. The authors then independently reviewed the data and tentatively identified salient concepts relating to the categories. These were collectively reviewed, discussed and debated to inform the process of axial coding, which identified the linkages between different concepts and categories. This included regular revisiting of transcripts to ensure close adherence to the data. Finally, selective coding was conducted to identify the core category based on which the phenomenon evolved (Strauss and Corbin, 1990).

Findings

Study characteristics

Table 1 sets out all study characteristics. Despite the eligibility timeframe being the past 10 years, our searches did not return any relevant literature published before 2013. Interestingly, that year was also when the greatest number of articles was published. Slightly fewer research studies were published in both 2015 and 2016, with only small numbers published in the remaining years.

Although all literature was in English as per the inclusion criteria, there were a number of different national origins. The majority of research studies took place in the US, with some in Australia and only two published in the UK in the past 10 years.

A significant number of the research studies used quantitative data. Only one used solely qualitative data and this was a small part of a larger case study. Five articles used mixed-methods approaches, mostly quantitative with a course evaluation. All studies collected pre- and post-intervention data. Seven studies used a control group, with the remainder collecting data within groups, and seven were identified as pilot studies. The majority of studies had a small number of participants, ranging from 13 to 174, with a mean of just under 47. Ten of the studies reported that the majority of their participants were female. See Table 2 for further details.

Table 1: Study characteristics

Paper	National origin and year of publication	Methodology
Bass et al. Promoting retention, enabling success: discovering the potential of student support circles	Australia, 2016	<ul style="list-style-type: none"> • Mixed method • Survey plus nominal group technique
Im et al. The Huddling Programme: effects on empowerment, organisational commitment and ego-resilience in clinical nurses- a randomised trial	Korea, 2016	<ul style="list-style-type: none"> • Quantitative • Randomised control trial
Steinberg et al. Feasibility of a mindfulness-based intervention for surgical intensive care unit personnel	US, 2016	<ul style="list-style-type: none"> • Quantitative • Pilot study • Intervention plus wait list control • Pre and post survey questionnaire
Kinser et al. 'Awareness is the first step': an interprofessional course on mindfulness and mindful-movement for healthcare professionals and students.	US, 2016	<ul style="list-style-type: none"> • Mixed method • Pilot • Within group, repeated measures design
Mehta et al. Building resiliency in a palliative care team: a pilot study	US, 2016	<ul style="list-style-type: none"> • Quantitative • Pilot • Pre- and post-intervention questionnaire
Song and Lindquist. Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students	South Korea, 2015	<ul style="list-style-type: none"> • Quantitative • Randomised control trial • Pre- and post-survey questionnaire
Klatt et al. Mindfulness in Motion (MIM): an onsite mindfulness based intervention (MBI) for chronically high stress work environments to increase resiliency and work engagement	US, 2015	<ul style="list-style-type: none"> • Quantitative • Pre- and post-survey questionnaire • Wait list group
Weidlich and Ugarriza. A pilot study examining the impact of Care Provider Support Program on resiliency, coping, and compassion fatigue in military health care providers	US, 2015	<ul style="list-style-type: none"> • Quantitative • Pilot • Pre and post-test survey measures
Poulsen et al. Evaluation of the effect of a one-day interventional workshop on recovery from job stress for radiation therapists and oncology nurses: a randomised trial	Australia, 2015	<ul style="list-style-type: none"> • Quantitative • Randomised control trial
Jameson. The effects of a hardiness educational intervention on hardiness and perceived stress of junior baccalaureate nursing students	US, 2014	<ul style="list-style-type: none"> • Quantitative • Quasi-experimental, non-equivalent control group design with pre- and post-test
Mealer et al. Feasibility and acceptability of a resilience training program for intensive care unit nurses	US, 2014	<ul style="list-style-type: none"> • Mixed method • Pilot • Single centre randomised control trial
Foureur et al. Enhancing the resilience of nurses and midwives: pilot of a mindfulness based program for increased health, sense of coherence and decreased depression, anxiety and stress	Australia, 2013	<ul style="list-style-type: none"> • Mixed method • Pilot • Pre- and post -intervention study
Ingham et al. An initial evaluation of direct care staff resilience workshops in intellectual disabilities services	UK, 2013	<ul style="list-style-type: none"> • Quantitative • Naturalistic pre-and post-study questionnaire • Control group
Wallbank. Maintaining professional resilience through group restorative supervision	UK, 2013	<ul style="list-style-type: none"> • Quantitative • Cross sectional questionnaire design
Potter et al. Evaluation of a compassion fatigue resilience program for oncology nurses	US, 2013	<ul style="list-style-type: none"> • Mixed method • Pilot • Mixed methods repeated measures design
Mcdonald et al. Personal resilience in nurses and midwives: effects of a work-based educational intervention	Australia, 2013	<ul style="list-style-type: none"> • Qualitative • Part of instrumental collective case study

Table 2: Thematic analysis grid

Paper	Summary of intervention	Participants	Measures	Summary of results
Bass et al., 2016	<ul style="list-style-type: none"> • Student support circles based on the Five Senses of Success Framework (capability, purpose, identity, resourcefulness and connectedness, through creating the space, preparing self, sharing stories and focused conversations). • Seven two-hour sessions, fortnightly, facilitated by a practice lecturer 	<ul style="list-style-type: none"> • First-year midwifery students within two geographical locations • Total of 80 students, either part time or full time, attended the support circles • 100% female 	<p>Paper-based survey with two questions:</p> <ul style="list-style-type: none"> • How helpful have your groups been in: <ul style="list-style-type: none"> - influencing perceptions of being a midwife? - orientating you to study at University? • Likert scale 1-5 • Qualitative, using nominal group technique 	<ul style="list-style-type: none"> • 90% of participants found intervention helpful • Increase in confidence and understanding of what was expected • Increased connectedness with others in the group • Enabled to develop sense of resourcefulness • Increase in reflection and resilience • Provided support and focus and helped 're-energise'
Im et al., 2016	<ul style="list-style-type: none"> • Huddling programme to increase empowerment, organisation commitment and ego resilience • Full-day huddle and group project • After-work huddle designed to manage workload and job performance in small groups • Social activities every fortnight 	<ul style="list-style-type: none"> • Qualified nurses with less than five years' experience • N=60, 30 each for experimental and control group • 81.6% female 	<ul style="list-style-type: none"> • Empowerment questionnaire • Organisational commitment • Ego resilience 	<ul style="list-style-type: none"> • Scores for empowerment and ego resilience did not differ between groups • Impact and normative commitment differed significantly between groups • One person left job in experimental group, five in control
Steinberg et al., 2016	<ul style="list-style-type: none"> • Weekly one-hour group session • Didactic introduction and discussion • A combination of mindfulness and light yoga practices with music • Participants asked to do 20 minutes daily individual practices from a CD, at least five times a week 	<ul style="list-style-type: none"> • ICU personnel • N=32 • 88% female 	<ul style="list-style-type: none"> • Maslachs Burnout Inventory (MBI) • Professional Quality of Life (ProQOL) scale • Levels of biological markers of stress • Utrecht Work Engagement Scale (UWES) • Attendance and mindfulness practice measures • Evaluation 	<ul style="list-style-type: none"> • 97% overall retention (100% in intervention group) • Work satisfaction increase significantly in intervention group; no change in control group • Negative correlations found between vigour subscale scores of work engagement and emotional exhaustion on burnout and burnout on ProQOL • Participants rated recognising stress response as main benefit
Kinser et al., 2016	<ul style="list-style-type: none"> • Mindfulness course developed using interprofessional education competencies and based on foundational mindfulness and yoga literature • Two-hour weekly sessions for eight weeks • Sessions led by the study author 	<ul style="list-style-type: none"> • Healthcare professionals and trainees • N=27 • 78% female 	<ul style="list-style-type: none"> • Patient Health Questionnaire • Perceived Stress Scale-10 (PSS) • State-Trait Anxiety Inventory Form Y • Ruminative Responses Scale • MBI 	<ul style="list-style-type: none"> • 100% retention • Significant reductions in perceived stress, anxiety and specific aspects of burnout • Enhanced sense of personal accomplishment over time
Mehta et al., 2016	<ul style="list-style-type: none"> • Mind-body programme designed to promote resiliency adapted for palliative care • Based on positive psychology and CBT. Multimodal approach: didactics, in-session activities, discussions and weekly practice assignments • Five sessions over two months (total 12 hours) 	<ul style="list-style-type: none"> • Palliative care clinicians employed full time • N=15 • 80% female 	<ul style="list-style-type: none"> • PSS • Positive and Negative Affect Schedule • Interpersonal Reactivity Index • Life Orientation Test-Revised • Brief Satisfaction with Life Scale • General Self-Efficacy Scale 	<ul style="list-style-type: none"> • Intervention was feasible. Attendance was an average of 4/5 sessions. • Reductions in perceived stress • Improved perspective taking, optimism, satisfaction and self-efficacy
Song and Lindquist., 2015	<ul style="list-style-type: none"> • Mindfulness Based Stress Reduction (MBSR), described as an 'adaptive coping program' • Included yoga, sitting, walking, breath work, body scan and eating mindfully • Two hours per week for eight weeks • Home assignments • Led by a trained instructor with over 10 years of background experience in MBSR 	<ul style="list-style-type: none"> • Nursing students • N=44 • Majority female • Intervention and control groups 	<ul style="list-style-type: none"> • Depression, Anxiety and Stress Scale • Mindfulness Attention Awareness Scale – Korean version 	<ul style="list-style-type: none"> • At baseline, no significant differences between groups in depression, anxiety, stress or mindfulness • Intervention group – scores of depression decreased by half, anxiety and stress reduced. Mindfulness increased • Control group – depression and anxiety slightly reduced
Klatt et al., 2015	<ul style="list-style-type: none"> • Mindfulness in Motion – modified mindfulness-based intervention to be less time intensive and delivered in the workplace. Teaches mindful awareness principles, rehearses mindfulness as a group, emphasises use of gentle yoga stretches, uses unique relaxing background music and requires daily individual practice • Delivered onsite during work hours • An hour a week for eight weeks, plus two-hour retreat 	<ul style="list-style-type: none"> • ICU healthcare staff • N=34 intervention group • Wait list control group • % female not specified 	<ul style="list-style-type: none"> • Connor-Davidson Resiliency Scale • Utrecht Work Engagement Scale • Count respiration rate before and after each session • Weekly evaluation of components 	<ul style="list-style-type: none"> • Decrease in breath count – statistically significant for most time points • Intervention group – statistically significant increase in resilience • Work engagement score significantly increased (mainly vigour subscale) • No change in wait list • Highest scores for trained instructor, music, breathing awareness, meditation, yoga stretches and mindful eating

Table 2: Thematic analysis grid (continued)

Paper	Summary of intervention	Participants	Measures	Summary of results
Weidlich and Ugarriza., 2015	<ul style="list-style-type: none"> The Army's Care Provider Support Program (CPSP). Aim is to improve the resiliency of military healthcare providers One-hour lessons monthly in developing coping skills to reduce compassion fatigue, burnout and stress. Providers interact and receive feedback from the instructors 	<ul style="list-style-type: none"> Convenience sample of military and civilian registered nurses, licensed practical nurses (LPN) and medics N=93 % female not specified 	<ul style="list-style-type: none"> Connor-Davidson Resilience Scale Ways of Coping Questionnaire ProQOL 	<ul style="list-style-type: none"> No significant difference in resilience scores between time points No significant difference in total Ways of Coping scores CPSP training has a positive effect on the ProQOL burnout scale Secondary traumatic stress and compassion satisfaction were not significantly different
Poulsen et al., 2015	<ul style="list-style-type: none"> A one-day workshop with educational material supplemented by practical exercises and interactive discussion. The aim was to support individuals to develop healthy self-care practices Expanded on the four recovery pathways (psychological detachment, relaxation, mastery and control) to include a module on social support during goal setting and using peer mentoring 	<ul style="list-style-type: none"> Cancer care workers N=70 Intervention and control group Majority female 	<ul style="list-style-type: none"> Recovery Experiences Questionnaire Satisfaction with self-care practices Perceived sleep quality 	<ul style="list-style-type: none"> Greater mean changes six weeks post intervention for total recovery experiences, self-care satisfaction and perceived sleep quality Experimental group had significantly higher scores following training for all measures Control groups had lower scores, particularly for psychological detachment, relaxation and control Workshop feedback indicated that they were well received and met participants' needs
Jameson., 2014	<ul style="list-style-type: none"> Hardiness educational programme, based on theory, research and practice Six weekly teaching sessions and a workbook to enhance attitudes, coping strategies and interaction patterns of hardiness 	<ul style="list-style-type: none"> Full-time, junior-level baccalaureate nursing students attending accredited nursing programmes N=79 Control and intervention groups 97.5% female 	<ul style="list-style-type: none"> Personal Views Survey III-R Perceived Stress Scale 	<ul style="list-style-type: none"> No significant difference in hardiness scores Decrease in perceived stress scores with a significant impact
Mealer et al., 2014	<ul style="list-style-type: none"> Mindfulness Based Stress Reduction (MBSR), expressive writing and exercise Two-day educational workshop with introduction to resilience training, self-care topics and CBT MBSR expert conducted a two-hour guided mindfulness exercise and provided CDs Expressive writing experts conducted a four-hour introduction to written exposure 12-week intervention including regular exercise, mindfulness practice, one-to-one CBT and expressive writing 	<ul style="list-style-type: none"> Qualified nurses working in an ICU N= 28 Intervention and control group Majority female 	<ul style="list-style-type: none"> Connor-Davidson Resilience Scale Posttraumatic Diagnostic Scale Hospital Anxiety and Depression Scale MBI Client [Patient] Satisfaction Questionnaire Q-8 	<ul style="list-style-type: none"> Intervention successfully implemented with 100% attendance Level of satisfaction with each component was high Four main themes in written work: patient centric; cognitive processing; work structure; and workplace relationships Intervention group had significant reductions in symptoms of depression compared with control group Both had a significant reduction in PTSD symptoms, and improved resiliency scores
Foureux et al., 2013	<ul style="list-style-type: none"> Brief, modified version of Kabat-Zinn's MBSR Offsite one-day workshop taught by experienced psychologist, included the impact of stress on being in the present moment, an introduction to mindfulness, grounding and diffusion strategies and information on forming habits Daily self-practice of mindfulness for 20 mins for eight weeks. Linked to Acceptance and Commitment Therapy (ACT) 	<ul style="list-style-type: none"> Midwives and nurses N=40 enrolled nurses and midwives 100% female 	<ul style="list-style-type: none"> GHQ-12 Sense of Coherence - Orientation to Life Questionnaire Depression Anxiety Stress Scales Log of practice Focus group Individual interviews 	<ul style="list-style-type: none"> Statistically significant scores for general health, orientation to life and stress in a positive direction Participation in workshop reported as enjoyable Qualitative data themes: learning gained through participation in the research and the workshop in particular; challenges and benefits of becoming more mindful; and incorporating mindfulness practice into day to day work and home life Differences: feeling relaxed, calmer and more focused

Table 2: Thematic analysis grid (continued)

Paper	Summary of intervention	Participants	Measures	Summary of results
Ingham et al., 2013	<ul style="list-style-type: none"> Intensive workshop designed to increase resilience. Included aspects of CBT and ACT Experiential tasks 	<ul style="list-style-type: none"> Direct care staff working with people with intellectual disabilities in inpatient settings N=58 Intervention and control group % female not specified 	<ul style="list-style-type: none"> Emotional responses to aggressive and challenging behaviour MBI Helpful aspects of workshop questionnaire 	<ul style="list-style-type: none"> Significant difference within intervention group on emotional responses No change in levels of burnout
Wallbank., 2013	<ul style="list-style-type: none"> Group restorative supervision (Wallbank, 2007) Designed to support professionals facing a significant emotional demand Uses the Solihull approach, motivational interviewing and leadership concepts This paper focuses on the group sessions but individuals were also offered one-to-one input 	<ul style="list-style-type: none"> Health visitors who had experienced up to six group sessions of restorative supervision N= 174 % female not specified 	<ul style="list-style-type: none"> Measures of compassion satisfaction, burnout and stress (ProQOL-IV) 	<ul style="list-style-type: none"> Reduced levels of stress and burnout Group supervision maintained and increased levels of compassion satisfaction
Potter et al., 2013	<ul style="list-style-type: none"> Compassion fatigue resiliency program designed for oncology staff nurses and based on the concepts of the Accelerated Recovery Program Five-week programme, designed to promote resiliency through self-regulation, intentionality, self-validation, connection and self-care Four 90-minute sessions and a four-hour retreat conducted offsite 	<ul style="list-style-type: none"> Oncology staff nurses Baseline n=14; final data analysis n=13 Majority female 	<ul style="list-style-type: none"> MBI – Human Services Survey ProQOL-IV Impact of Event Scale – revised Nursing Job Satisfaction Scale Weekly + final evaluation form 	<ul style="list-style-type: none"> Comparisons between baseline and post programme show no significant changes in burnout, professional quality of life or nurse job satisfaction Mean scores for Impact of Event Scale improved significantly Programme evaluated positively Significant reduction in secondary trauma stress at six months
Mcdonald et al., 2013	<ul style="list-style-type: none"> Six-day resilience workshops and a mentoring programme conducted over six-month period Each workshop focused on two characteristics with the following covered throughout: positive and nurturing relationships and networks; mentoring; positive outlook; hardiness; intellectual flexibility; emotional intelligence; life balance; spirituality; reflection and critical thinking Sessions included didactic instruction, use of arts and humanities (drawing, painting, photography, music, etc.) plus therapeutic elements, such as hand massage 	<ul style="list-style-type: none"> Nurses and midwives working in a women's and children's health service N=14 100% female 	<ul style="list-style-type: none"> Face to face, semi-structured interviews discussing effectiveness of workshop in relation to health, wellbeing and personal resilience 	<ul style="list-style-type: none"> Personal gains: an experiential learning opportunity; creative self-expression; exposure to new ideas and strategies Professional gains: increased assertiveness at work; improved workplace relationships and communication; increase collaborative capital; understanding self-care practices

Qualitative analysis

A thematic analysis grid was developed to summarise the interventions for each study and the outcome of this intervention (see Table 2, above). The information in the thematic analysis was scrutinised by the authors and the following trends, within the deductive framework, were identified.

Interventions used to improve resilience in registered nurses and student nurses

A range of interventions aiming to improving resilience among student and registered nurses were found throughout the literature. Bass et al. (2016), Song and Lindquist (2015) and Jameson (2014) focused their interventions on students; the remainder focused on registered staff, apart from Kinser et al. (2016) and Ingham et al. (2013), who had both students and registered staff. While each of the interventions described in the literature had its own approach, the following common components were identified: the use of mindfulness, didactic education and group intervention.

The use of mindfulness as a coping strategy for increasing resilience was prominent throughout the literature. Jon Kabat-Zinn (2017), the founder of Mindfulness Based Stress Reduction (MBSR), describes mindfulness as 'an awareness that arises from paying attention in a particular way: on purpose, in the present moment, nonjudgmentally'. Five of the identified interventions were specifically based on MBSR, although they adapted it in some way to improve its accessibility for healthcare staff (Foureur et al., 2013; Mealer et al., 2014; Klatt et al., 2015; Song and Lindquist, 2015). These involved teaching mindfulness principles and practice of the technique.

Kinser et al., (2016), Bass et al., (2016), Mehta et al., (2016) and Steinberg et al., (2017) also explicitly focused their interventions on mindfulness practice. Although there was no specific focus on mindfulness in other interventions, there was a focus on developing self-regulation skills and cognitive reframing as coping strategies for dealing with distress (Ingham et al., 2013; Potter et al., 2013; Jameson, 2014; Mealer et al., 2014; Poulsen et al., 2015; Weidlich and Ugarriza, 2015; Bass et al., 2016). This commonality highlighted the consistent use of mindfulness-informed interventions as a form of coping strategy throughout the literature.

The format of all the interventions was very similar, with the majority using workshops. Many of the workshops focused on didactic sharing of information and discussion, and a popular topic of didactic instruction was education around stress – types of stressors and the impact of stress (Foureur et al., 2013; Potter et al., 2013; Mealer et al., 2014; Weidlich and Ugarriza, 2015). Other authors focused on resilience, featuring relevant new concepts and skills (McDonald et al., 2013; Jameson, 2014; Weidlich and Ugarriza, 2015; Mehta et al., 2016).

Alternatively, Wallbank (2013) used a clinical supervision format, based on group restorative supervision as opposed to a workshop. Individuals were offered up to six group supervision sessions that provided an opportunity to reflect and a supportive space. Bass et al. (2016) identify their intervention as a 'structured programme of activity', although participants were required to share stories and then take part in focused and reflective conversations with a facilitator. This was similar to a clinical supervision session and therefore differed from the traditional workshop with didactic information.

Finally, it is important to note that all the studies used a group format for the intervention. Some included one-to-one work but with the predominant feature being group work (Wallbank, 2013; Mealer et al., 2014). In particular, Im et al. (2016) based their huddling programme intervention on group dynamics and support. The length of the interventions ranged from one day (Foureur et al., 2013; Poulsen et al., 2015) to six months (McDonald et al., 2013).

Outcomes of interventions

As indicated in Table 2, a number of tools to measure outcomes were used, the most common being Maslach's Burnout Inventory (Ingham et al., 2013; Potter et al., 2013; Mealer et al., 2014; Kinser et al., 2016; Steinberg et al., 2016), the Professional Quality of Life Scale (Potter et al., 2013; Weidlich and Ugarriza, 2015; Steinberg et al., 2016) and the Connor-Davidson Resilience Scale (Mealer et al., 2014; Klatt et al., 2015; Weidlich and Ugarriza, 2015).

The Connor-Davidson Resilience Scale (Connor and Davidson, 2003) was used to measure levels of resilience and indicated, in some cases, a post-intervention improvement (Mealer et al., 2014; Klatt et al., 2015). Weidlich and Ugarriza (2015) found no changes in levels of resilience post-intervention. Although not all studies measured resilience explicitly, there was a noted improvement post-intervention in factors relating to resilience: perceived stress (Foureur et al., 2013; Wallbank, 2013; Jameson, 2014; Kinser et al., 2016; Mehta et al., 2016); anxiety (Song and Lindquist, 2015; Kinser et al., 2016) and burnout (Potter et al., 2013; Wallbank, 2013; Weidlich and Ugarriza, 2015; Kinser et al., 2016). Some authors reported a decrease in symptoms of depression (Mealer et al., 2014), with Song and Lindquist (2015) finding depression scores decreased by more than half.

Steinberg et al. (2016) also measured the biological impact of their interventions. They measured levels of salivary amylase and this had significantly decreased post-intervention, despite there being no change in work stressors.

Evaluations of interventions indicated positive experiences and a high level of satisfaction among individual participants (Foureur et al., 2013; Potter et al., 2013; Mealer et al., 2014; Poulsen et al., 2015). This was borne out by high attendance rates (Mealer et al., 2014; Kinser et al., 2016; Steinberg et al., 2016).

A small number of the studies used qualitative data. Participants expressed positive experiences of mindfulness, finding that the intervention supported them to implement a daily practice (Kinser et al., 2016), helped them feel relaxed, calmer and more able to handle negative thoughts and stress (Foureur et al., 2013). Bass et al. (2016) found that individuals had an increased sense of confidence and ability to reflect. The findings of McDonald et al. (2013) corroborated this, with the added benefits of improved communication skills and understanding of self-care techniques.

However, it is difficult to identify whether the positive impact of these studies was due to the intervention itself or a group effect. Having a professional supportive network was seen by participants as one of the most important aspects of the intervention (Wallbank, 2013; Mealer et al., 2014; Steinberg et al., 2016). Reasons identified were: knowing that others felt the same way (Potter et al., 2013; Mealer et al., 2014; Bass et al., 2016); exposure to new ideas and strategies (McDonald et al., 2013; Wallbank, 2013; Bass et al., 2016); and a sense of belonging and support (Bass et al., 2016; Steinberg et al., 2016).

Not all the results indicated a positive change. A number of studies found no significant post-intervention difference in levels of resilience (Jameson, 2014; Weidlich and Ugarriza, 2015; Im et al., 2016) or burnout (Ingham et al., 2013; Steinberg et al., 2016). None of these noted a negative impact, suggesting unchanged resilience. The workshop conducted by Ingham et al. (2013) lasted only a day, and these authors believe the brief nature of the intervention may have contributed to a lack of change.

Bass et al. (2016) reported that 90% of attendees found the intervention helpful. Four participants (10%) did not find it helpful, although three of these had not attended all the sessions offered so it could be argued that theirs was not a fully informed evaluation. Foureur et al. (2013) also reported that one participant had a negative experience of the mindfulness aspect of their information, so that individual did not practice this, although there was no indication whether this impacted on the outcomes. Most participants in this study expressed positive views and requested further sessions.

Finally, institutional support was recognised as an important factor in implementation (Klatt et al., 2015; Mehta et al., 2016). Without institutional support, negotiating time to attend workshops was found to be difficult (Foureur et al., 2013). Steinberg (2016) also found that individuals did not always attend the sessions on time, which underlines the need for consistent leadership support. Ingham et al. (2013) and McDonald et al. (2013) both argued that changes from management and leadership are needed to increase levels of resilience in healthcare.

Discussion

The findings of the articles reported here offer insight in to the way in which resilience is conceptualised, taught and developed. It appears that value is placed on the acquisition of skills that enable individuals to cope with stressful situations, such as mindfulness (Foureur et al., 2013; Mealer et al., 2014; Klatt et al., 2015; Song and Lindquist, 2015). This supports the premise that resilience is associated with an individual's ability to respond positively to adversity (Hart et al., 2014). Despite the individualised nature of this outcome, it was often fostered within a group learning forum. However, the influence of groups on experience and learning was not considered within the studies, so the effect of community, emphasised in the ecological definition of resilience (Joseph, 2013), requires further exploration.

Where a positive change in a direct or alternative outcome measure of resilience was not identified, it was suggested that resilience was sustained at a high level and there was no capacity for further development (Potter et al., 2013; Jameson, 2014). This assumption is reminiscent of the engineering definition of resilience, which refers to materials and the outcome of pressure being a return to a steady state (Chandler, 2014). By conceptualising people in the same way as materials the potential for growth and development within the individual, as advocated by Wallbank (2013), is not prioritised. Additionally, assuming that a proportion of the workforce was already showing a high level of resilience implies the association between resilience and improved retention may not be as linear as previously accepted (McAllister and McKinnon, 2009; Bass et al., 2016; Thomas and Asselin, 2018). A number of confounding external factors and internal characteristics may be influential in a person's decision to leave or to remain in the profession. This supports the need for a conceptualisation of resilience that accounts for diverse responses and an understating of complex systems, as suggested by Joseph (2013).

The majority of interventions described in the studies adopted didactic approaches to teaching the perceived skills and attributes associated with resilience. This approach to the development of resilience implies acceptance that a standardised method will be effective, without taking into account the variety of experiences and mechanisms used by individuals to maintain a sense of wellbeing – again an expectation of the type of consistent response to stress displayed by materials (Chandler, 2014). It has been argued that standardised conceptualisations of resilience is a form of 'governmentality', whereby organisations are dictating and conditioning individuals to respond to complexity by adopting a set of organisationally approved strategies (Rolfe and Gardner, 2006; Chandler, 2014). The individual's ability to 'bounce back' after encountering a traumatic experience is of great benefit to the organisation. This perpetuates a culture where adverse working conditions are managed by the individual, which relieves the organisation of its responsibility to restructure systems and mobilise resources that present the opportunity for renewal (Joseph, 2013).

In terms of the overall evidence for resilience-based educational interventions, a number of the identified studies were pilots (Foureur et al., 2013; Mealer et al., 2014; Weidlich and Ugarriza, 2015; Kinser et al., 2016; Mehta et al., 2016; Steinberg et al., 2016). Each of the studies had a small sample size, with the mean size being just under 47. A number of the studies reported that the majority of participants were female (Foureur et al., 2013; McDonald et al., 2013; Potter et al., 2013; Jameson, 2014; Poulsen et al., 2015; Bass et al., 2016; Im et al., 2016; Kinser et al., 2016; Steinberg et al., 2016) and all participants self-selected. A subjective interest is the most identifiable reason for engaging in research (Clark, 2010) and this has implications for the generalisability of findings.

A further limitation arises from the methodology. Not all the studies used control groups in order to measure cause and effect (Ingham et al., 2013; Jameson, 2014; Mealer et al., 2014; Klatt et al., 2015; Poulsen et al., 2015; Song and Lindquist, 2015; Im et al., 2016). Additionally, none of the studies attempted to distinguish between group effect and the intervention itself. Other external influences, such as institutional change or decreased stressors, were not considered.

Similarly, despite a number of interventions basing their rationale on the association between resilience and improved patient care, none of the studies attempted to measure this association; this is a longstanding issue due to the confounding variables, which would have influenced the validity of any association. However, Health Education England (2019) has underlined the need to support a culture that encourages compassion to oneself and where self-care is 'normalised'. This is due to the increasing recognition that if a person is intolerant of their own distress, they may not be able to tolerate the distress of others – particularly relevant for healthcare staff. This recommendation situates resilience in both the workforce and practice development agenda as it requires the development of resilience to be delivered as an inclusive, participatory and collaborative intervention. When redefined in this way, resilience and its association with quality of patient care becomes integral to practice development (Bradd et al., 2017).

Conclusion

The current evidence base exploring the experience and outcome of resilience-based educational strategies is limited by its size, sample and lack of acknowledgment of the complex system within which healthcare professionals are navigating. This is perhaps as a result of the non-critical manner in which the conceptualisation of resilience has been portrayed within the nursing literature. Definitions that relate more to materials than people and communities have informed the design and evaluation of interventions – this is unlikely to provide a solution for complex healthcare systems. In the light of the significant influence of contextual, environmental and intrinsic factors on the expression of resilience, future research could benefit from taking a case study approach. The thick description of context enhances the transferability of findings to other settings and the use of multiple sources of data enables the exploration of confounding influences that may influence a quantitative change (Houghton et al., 2013).

Implications for practice development

Interventions and evaluations should adopt a multilevel approach in order to develop and maintain resilience that embraces instability, and enables significant restructuring and capacity for renewal. While skills to manage the emotional consequences of healthcare practice are present at an individual level, they should be developed as part of a community that shares a critical dialogue, offers supportive relationships and enables reflective discussion. This requires a commitment from organisations to mobilise resources to facilitate these spaces and an obligation to respond to the inevitable challenges that arise when resilience is promoted as an emancipatory concept.

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