Nurse Resilience: A Concept Analysis

Abstract

Nurse resilience is attracting increasing attention in research and practice. Possession of a high level of resilience is cited as being crucial for nurses to succeed professionally and manage workplace stressors. There is no agreed definition of nurse resilience. A concept analysis was undertaken to examine nurse resilience using a priori selected analysis framework. This concept analysis aims to systematically analyse resilience as it relates to nurses and establish a working definition of nurse resilience. Sixty-nine papers met the search criteria for inclusion. Key attributes of nurse resilience were social support, self-efficacy, work-life balance/self-care, humour, optimism and being realistic. Resilience enables nurses to positively adapt to stressors and adversity. It is a complex and dynamic process which varies over time and context and embodies both individual attributes and external resources. Sustaining nurse resilience requires action and engagement from both individuals and organisations.

Keywords: Resilience; nurses; concept analysis; definition; adversity

Introduction

The stressful nature of nursing work places nurses at increased risk of burnout, depression, anxiety, secondary traumatic stress (STS) and suicide (Alderson et al., 2015; Craigie et al., 2015; D Hegney et al., 2014; Khamisa et al., 2013; Ray et al., 2013). Like other health professionals and emergency personnel, nurses are exposed to a wide variety of stressors including trauma, shift work, workplace violence and insufficient resources (Happell et al., 2013; Hsieh et al., 2016; Mealer et al., 2017; Zander et al., 2013). Specifically, in a mental health context, nurses are exposed to unique stressors including witnessing patients inflict self-harm and caring for patients who may attempt and complete suicide (Hagen et al., 2017; Tofthagen et al., 2014). A recent study found the emotional labour of suppressing emotions during interactions with patients negatively affected the resilience of mental health nurses (Delgado, Roche, Fethney, & Foster, 2020).

Moral distress can contribute to burnout and is when an individual is unable to act according to their core values due to internal and external restraints (Fumis et al., 2017; Rushton et al., 2015; Wagner, 2015). The nature of a nurses' role, involves providing continuous care and forming close relationships with patients and families, placing them at increased risk of compassion fatigue (CF) and burnout (Boyle, 2011; Jarrad et al., 2018). Protective factors which enable nurses to positively adapt in stressful work situations have been reported. Personal resilience has been identified as a key protective attribute in dealing with these circumstances (Cusack et al., 2016; Gillespie et al., 2009; Manzano García & Ayala Calvo, 2012; Meredith Mealer et al., 2012; Rushton et al., 2015). Maintenance of psychological wellbeing and mental health are common outcome indicators of a resilient process following adverse events (Foster et al., 2020; Gao et al., 2017; Itzhaki et al., 2015).

The origins of research in resilience stem from psychology, initially in children (Garmezy et al., 1984; Werner & Smith, 1982), then in groups including; adults (Connor & Davidson, 2003; Liu et al., 2015), veterans (Elbogen et al., 2012; Pietrzak et al., 2014), patients with chronic illness (Guest et al., 2015; Tan-Kristanto & Kiropoulos, 2015) and trauma victims (Anderson et al., 2012; Daniels et al., 2012). Most people are exposed to one or more life-threatening experiences (Southwick et al., 2014) as well as regular stressors throughout their lifetime (Fletcher & Sarkar, 2013; Southwick et al., 2014). Understanding what facilitates resilience and positive adaptation may play an important role in improving mental health for people across many contexts.

Resilience has been defined as a trait, a process and an outcome (Fletcher & Sarkar, 2013). When considered as a personality trait, resilience is fixed and stable over time whereas, when viewed as a dynamic process resilience can develop throughout life and vary across context and time (Atkinson et al.,

2009). Defining resilience as a trait originates in psychology when identifying the characteristics of resilient individuals was a focus (Fletcher & Sarkar, 2013; O'Dougherty-Wright et al., 2013). Consideration of the more complex nature of resilience gave rise to the view of a dynamic process where adaptive systems beyond individual characteristics interplay and affect individual resilience including biological, social and cultural processes (O'Dougherty-Wright et al., 2013). Definitions based on possessing a high level of resilience focus on positive adaptation and successful coping (Fletcher & Sarkar, 2013). Regardless of perspective, most definitions centre around adversity and positive adaptation (Fletcher & Sarkar, 2013). Adversity is an unpleasant or difficult situation (English Oxford Dictionary, 2018). Positive adaptation is '…the processes by which individuals' attain overall patterns of adjustment that represent unusually favourable developmental trajectories, given their background and available resources' (Mahoney & Bergman, 2002, p. 197).

Due to variations in any concept's utilisation across disciplines and contexts, clarity is required when employing a concept in nursing research (Baldwin, 2008; Foley & Davis, 2017; Walker & Avant, 2011). Concept analysis (CA) is utilised to inform a precise definition and provide mutual understanding (Foley & Davis, 2017).

Design

Concept Analysis is a precise and rigorous process, pioneered by the philosopher Wilson (1963), with the methodology spreading across disciplines. In nursing CA emerged in models developed by Rodgers and Knafl (1993), Walker and Avant (1995), Morse (1995) and Chinn and Kramer (1995). Walker and Avant's (1995) model is the most widely applied in the literature (Fitzpatrick & McCarthy, 2016) and has been further updated and refined. Their approach uses an eight-step process (Table 1) to guide a deeper understanding of a concept. These steps are *iterative* rather than *sequential* (Walker & Avant, 2011). Using Walker and Avant's method, an analysis of the critical attributes of resilience related to nurses is presented. The antecedents and consequences are described and model, borderline and contrary cases define the concept.

Table 1. Adaptation of Walker and Avant (2011) steps of concept analysis

Steps of Concept Analysis	Description
Select a concept	Concept selection for analysis
Determine the aims or purposes of analysis	Focus on the purpose and intention of performing the CA
Identify all uses of the concept you can discover	'…. Identify as many uses of the concept as you can find' (Walker & Avant, 2011, p.161)
Determine the defining attributes	Establish the cluster of attributes most frequently associated with the concept
Identify a model case	'…an example of the use of the concept that demonstrates all the defining attributes of the concept'. (Walker & Avant, 2011, p.163)
Identify additional cases	Used to illustrate what the concept is and is not. Borderline, related and contrary cases are frequently used invented and illegitimate cases are not always required.
Identify antecedents and consequences	Antecedents are '…events or incidents that must occur or be in place prior to the occurrence of the concept. Consequences are '…events or incidents that occur as a result of occurrence of the concept'. (Walker & Avant, 2011, p.167)

Define empirical referents	'…classes or categories of actual phenomena that by their existence or presence demonstrate the occurrence of the concept'. (Walker & Avant, 2011, p.168)

Aim

Concept and Purpose

Whilst resilience is increasingly being referred to and explored in the nursing literature, there is no clear definition of what resilience means for nurses (Aburn et al., 2016). The aim of this CA is to inform a working definition of nurse resilience. An important potential implication of this study is that use of a consistent definition of resilience could guide future research efforts in the area. By knowing the key markers of nurse resilience, studies can be designed that focus specifically on the measurement of these variables.

Definitions and Uses of the Concept

In order to fully understand resilience, all uses must be considered including exploring literature outside of the discipline to avoid bias (Walker & Avant, 2011).

Primary Definitions

The origin of the term resilience is in the Latin word *resilire* meaning to 'spring back' (Online Etymology Dictionary, 2017). The English Oxford Dictionary (*English Oxford Dictionary*, 2017) defines resilience as 'the capacity to recover quickly from difficulties; toughness' or 'the ability of a substance or object to spring back into shape; elasticity'. Synonyms include flexibility, strength, pliability, buoyancy, toughness and hardiness and antonyms include rigidity, fragility, vulnerability and weakness (English Oxford Dictionary, 2017).

In science resilience refers to how easily a material returns to its original shape after elastic deformation (Gorse et al., 2012) or the rate that a system regains structure and function following stress or perturbation (Park & Allaby, 2017). In sport resilience is a measure of a body's resistance to deformation (Kent, 2006). In social ecology resilience is the capacity of a system to absorb or withstand disturbances and reorganise while undergoing change yet retain the same structure, function and identity (Walker et al., 2004).

Resilience in Psychology

In children research focused on how, when faced with significant adversities such as having a mother with schizophrenia (Garmezy & Streitman, 1974), socioeconomic disadvantage (Garmezy, 1991; Werner & Smith, 1982), maltreatment (Cicchetti et al., 1993; Moran & Eckenrode, 1992), chronic illness (Wells & Schwebel, 1987) or catastrophic life events (O'Dougherty-Wright et al., 1997) some were able to positively adapt and thrive. Studies focused on identifying characteristics or attributes resilient individuals possess (Garmezy, 1991; Kobasa et al., 1982; Rutter, 1987; Werner, 1982; Werner & Smith, 1982). Examples include a supportive environment, hardiness, good self-esteem and an easy temperament. These protective factors, are considered to foster positive outcomes in children exposed to adversity (Bonanno, 2004). A number of definitions have been offered for resilience in children including; '…the positive pole of individual differences in people's response to stress and adversity' (Rutter, 1987, p. 316) and '…a dynamic process encompassing positive adaptation within the context of significant adversity' (Luthar et al., 2000, p. 543).

The study of resilience moved beyond developmental and social-psychological studies when post-traumatic stress disorder (PTSD) as a diagnostic entity arose in 1980 (Agaibi & Wilson, 2005). Research focused on adults, examining responses to trauma and the development of PTSD. Psychologists sought to establish factors associated with vulnerability and resilience to PTSD (Agaibi & Wilson, 2005; Zuckerman,

1999). Studies focused on groups exposed to extreme trauma including; war veterans (Bartone, 1999; Hendin & Haas, 1984), prisoners of war (Gold et al., 2000; Kluznik et al., 1986) and holocaust survivors (Cohen et al., 2002; Kahana et al., 1988). In the context of acute trauma, resilient individuals are those that do not develop PTSD (Hoge et al., 2007). Definitions of resilience in adults include; 'Resilience embodies the personal qualities that enable one to thrive in the face of adversity' (Connor & Davidson, 2003, p. 76) and '… resilience reflects the ability to maintain a stable equilibrium' (Bonanno, 2004, p. 20). Despite the risk of psychopathology following trauma most people positively adapt and display resilience (Bonanno, 2004). This acknowledgement of the commonality of resilience stimulated a move away from focusing on psychopathology and towards a positive paradigm (Pan & Chan, 2007). The presence of resilience in individuals frequently exposed to adversity and how to foster and maintain this has become an area of particular interest.

A number of professionals including firefighters (Carpenter et al., 2015; Kimbrel et al., 2011; Meyer et al., 2012), police officers (Gershon et al., 2009; Martinussen et al., 2007), air traffic controllers (Jou et al., 2013; Maier, 2011; Martinussen & Richardsen, 2006) and health professionals (Felton, 1998; Koinis et al., 2015; Meredith Mealer et al., 2012) are subjected to extreme levels of stress, adversity and trauma at work which can result in negative psychological outcomes. The need to support individuals working in such areas is recognised and resilience has been identified as a key protective factor (Galatzer-levy et al., 2013; Lee et al., 2014; Papazoglou & Andersen, 2014). Drawing on definitions offered in psychology in their study of firefighters Lee et al., (2014, p. 129) state; 'Resilience can be defined as the ability to adapt and successfully cope with acute or chronic adversity'. Galatzer-levy et al., (2013, p. 545) cite the work of Bonanno (2004) identifying resilience as commonplace in police officers facing frequent exposure to potentially traumatic events; '… with the largest group being asymptomatic or having very low symptoms overtime, a pattern designated as resilience'.

Positive psychology has been applied to explore how organisations can influence resilience and well-being of employees (Bakker & Schaufeli, 2008; Bardoel et al., 2014; Youssef & Luthans, 2007) as can positive organisational behaviour (Bakker & Schaufeli, 2008). Conditions and resources organisations can provide include; social supports at work, employee assistance programs, flexible work arrangements, reward and benefit systems, development programs and work-life balance practices (Bardoel et al., 2014). Positive organisational behaviour benefits employees and results in better outcomes for organisations (Lengnick-Hall et al., 2011). There is evidence that behaviours of nurse managers can affect nurses' well-being and their ability to provide quality care (Adams et al., 2018) mirroring findings in other workplaces (Boddy, 2014; Chughtai et al., 2015).

The definitions of resilience utilised in the context of nursing research remain ill defined. Whilst the origins of the construct labelled 'resilience' arises from developmental psychology it is evident that the ability to be resilient is not limited to childhood. Like others, nurses are exposed to significant stressors and adversity in the workplace that may be modulated by resilience but have the potential to cause stress, depression or anxiety.

Methods

Nursing Literature Search

In reviewing resilience literature relevant to nurses the following electronic databases were searched from the date each was available to July 2019: CINHAL, MEDLINE, and PSYCINFO. Terms used were, resilienc*, AND nurs*. Titles and abstracts for all papers were reviewed to determine suitability and reference lists of retrieved articles were manually searched to identify additional studies. Inclusion criteria captured qualitative studies, quantitative studies, discussion papers and reviews, in English, explicitly discussing or investigating resilience in nurses (Figure 1). Exclusion criteria are listed below:

1. Resilience in nurses not a main focus

2. Student nurses
3. All other health professionals*
4. Patients or carers
5. Healthcare systems resilience

* due to similarities between nursing and midwifery professions, papers describing both disciplines were included, those solely on midwives were excluded.
Included papers were read and analysed to discover the attributes, antecedents and consequences related to resilience in nurses.

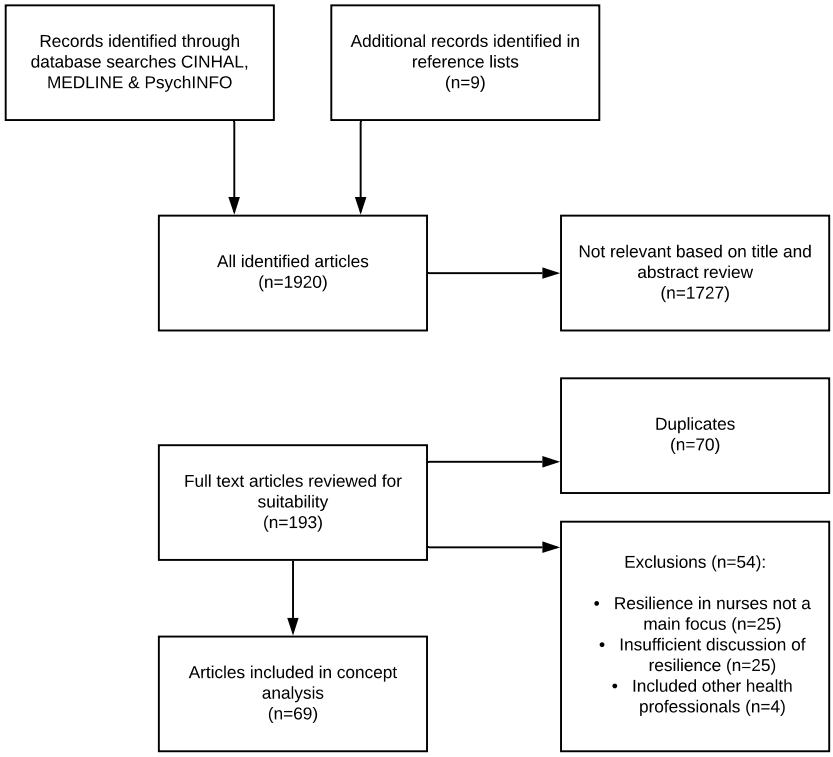

Figure 1. Literature Search

Findings

Resilience in Nursing

Nursing is a high stress profession facing increasing pressures in a changing social and ethical context. These pressures can lead to moral distress, CF and burnout which negatively impact nurses and the patients under their care (D. Hegney et al., 2014; Meredith Mealer et al., 2012; Rushton et al., 2015). The study and understanding of individual resilience in nurses has become increasingly important. Whilst there is currently no universally agreed definition of resilience in the nursing literature a number of themes have been identified '… rising above to overcome adversity, adaptation and adjustment, "ordinary magic", good mental health as a proxy for resilience and the ability to bounce back' (Aburn et al., 2016, p. 984). The nursing literature has considered individual characteristics associated with resilience, resilience as a dynamic process and resilience as an innate energy or motivating life force (Grafton et al., 2010). It is believed resilience can be enhanced and modified in nurses and is therefore not a fixed personality trait (Craigie et al., 2016; Foster et al., 2018; Foureur et al., 2013; McDonald et al., 2013; Mealer et al., 2014; Slatyer, Craigie, Heritage, et al., 2017). Resilience of nurses has been studied in

a variety of settings including; mental health (Itzhaki et al., 2015; Matos et al., 2010; Prosser et al., 2017), intensive care (Mealer et al., 2017; M. Mealer, J. Jones, J. Newman, et al., 2012; Meredith Mealer et al., 2012), oncology (Kutluturkan et al., 2016; Lim et al., 2016; Zander et al., 2013), operating theatres (Gillespie et al., 2009; Gillespie et al., 2007), emergency departments (Flarity et al., 2013; Hsieh et al., 2017; Tubbert, 2016) and aged care (Cameron & Brownie, 2010; V. C. Cope et al., 2016). There is agreement that resilience is vital in enabling nurses to cope with workplace stress and pressures (Hart et al., 2014; Hegney et al., 2015; McAllister & McKinnon, 2009; Meredith Mealer et al., 2012; Tusaie & Dyer, 2004). Resilience is associated with the prevention of negative outcomes including burnout, CF, STS, depression, stress and anxiety (Hegney et al., 2015; Kutluturkan et al., 2016; Lanz & Bruk-Lee, 2017; Lanz & Bruk-Lee, 2017; Manzano García & Ayala Calvo, 2012; Mealer et al., 2017; Meredith Mealer et al., 2012; Rushton et al., 2015).

Numerous attributes associated with resilience in nurses have been identified (Table 2 – see supplementary material). A variety of definitions have been employed, often drawing on definitions used in psychology. Pipe et al., (2012, p. 11) consider resilience to be '… the ability to adapt to life's ever-changing landscape and recover quickly from stressors and potential stressors'. The analogy of "bouncing back" is frequently employed in definitions of resilience in nursing (Aburn et al., 2016; Hart et al., 2014; Mealer et al., 2017; Tubbert, 2016). Wei et al., (2014) employed a more complex definition considering resilience as a multifaceted construct including personal determination, the ability to endure, adapt and recover from adversity. Delgado et al. (2017) viewed resilience in nursing as a personal capacity that helps nurses manage workplace adversity and demands. Definitions vary and no universal definition from a nursing perspective has been established. To analyse the concept of resilience in relation to nurses the defining attributes require deeper examination.

Defining Attributes

Determining the defining cluster of attributes most frequently associated with the concept is a crucial aspect of the analysis (Walker & Avant, 2011). These help to differentiate the concept of resilience from other concepts. Numerous attributes of nurse resilience have been identified (Table 2 – see supplementary material). The defining attributes are not exhaustive however, they are based on analysis of the literature of resilience in nurses. Six **key** defining attributes most frequently cited in the literature are; social support, self-efficacy, work-life balance/self-care, humour, optimism and being realistic. These attributes are described in detail below:

1) Social support:

Social supports promoting resilience in nurses were frequently identified in the literature. Effective social support results in individuals feeling valued, cared for and provides a sense of belonging (Cobb, 1976). Nurses can draw on social support from colleagues, managers, friends and families. Individuals need to engage with social supports and workplaces can provide support systems and foster positive collegial relationships.

2) Self-efficacy:

Self-efficacy refers to an individual's belief in their ability to succeed in a given situation or activity (Bandura, 1978). An individual's perception of self-efficacy will influence the activities they engage in and those with higher levels of self-efficacy are more likely to persevere and succeed (Bandura, 1978).

3) Work-life balance/self-care:

Achieving work-life balance and self-care is crucial to well-being. Work-life balance is the division of an individual's time between work and family or leisure activities. Work-life balance does not mean time is equally divided between work and non-work activities but can vary over time and is the perception that work and non-work activities are compatible (Kalliath & Brough, 2008). Self-care is when an individual actively practices protecting their well-being and happiness. This encompasses practices which maintain

and protect both physical and mental well-being (Orem, 1985). Self-care includes a wide range of activities including; exercise, good nutrition, mindfulness, meditation and socialising (Richards et al., 2010).

4) Humour:

The ability to make light of adversity through humour has long been recognised as a way in which nurses and other health professionals cope with workplace stress (Wanzer et al., 2005). Humour can foster relationships with colleagues and patients enabling teamwork, relieving tension (Dean & Major, 2008) and improving experiences (Åstedt-Kurki & Isola, 2001; Tanay et al., 2014).

5) Optimism:

Optimism is the extent to which individuals hold favourable expectations for the future and is linked to increased levels of coping and better physical health whereas, pessimism is the expectation that bad things will happen (Carver et al., 2010). Hope is related to optimism but differs as it is a feeling of expectation or desire for a particular thing to happen rather than a general favourable outlook (Bryant & Cvengros, 2004). There is evidence that positive emotions may sustain psychological resilience (Fredrickson, 2001). In nurses optimism is often discussed in the context of remaining positive and looking for the positive in adversity (Hart et al., 2014; Jackson et al., 2007; McDonald et al., 2012; Pipe et al., 2012).

6) Being realistic:

Nurses also need to be realistic as clearly not all situations they encounter have positive outcomes. Being realistic can be described as having a practical and sensible idea of what can be achieved or expected. This includes reframing experiences, having realistic expectations about caregiving, cultivating a realistic perspective on life and realistic goal setting. (Cline, 2015; Gillman et al., 2015, Leverence, 2015; Prosser et al., 2017; Zander et al, 2013). Being realistic is important because unrealistic optimism has potential negative consequences for physical and psychological well-being (Shepperd et al., 2017).

Case Studies

The defining attributes of resilience can now be employed to construct model, borderline and contrary cases. Walker and Avant (2011) indicate these can be from real life, constructed or in the literature. The purpose of the cases is to demonstrate what the concept *is* and *is not* by the presence or absence of the defining attributes. In order to demonstrate all attributes, it is common to use constructed case studies (Earvolino-ramirez, 2007; Vázquez-Calatayud et al., 2017; Wang, 2004). The presented cases reflect the adversity and stressors nurses can face in their daily work and the context in which nurse resilience has been explored in the literature.

Model Case

The following constructed model case presents a '…pure case of the concept,…' (Walker & Avant, 2011, p. 163).

Sarah is a registered nurse (RN) working on an acute psychiatric ward. Each day she faces numerous stressors including caring for high acuity patients, skill mix and resourcing issues, traumatic situations including patient self-harm and suicide attempts, and workplace violence. Sarah is an experienced RN confident in her abilities, demonstrating a high level of self-efficacy. She has effective social support at work and in her personal life. Sarah will often de-brief with colleagues formally in facilitated de-brief sessions, if there has been a particularly traumatic event, and informally, going out with colleagues after work. The organisation Sarah works for provides access to counselling and support. She also has the support of family and friends who she shares her feelings and experiences with. Sarah can rely on her sense of humour in difficult situations and will take away the positive in any situation, remaining optimistic. Sarah has a realistic outlook and acknowledges every patient's experience and recovery journey differs. Sarah maintains her

work-life balance, making time to do things she enjoys outside of work including; practising mindfulness, exercise, travel and socialising.

Borderline Case
The following constructed borderline case provides an example where most of the attributes of resilience are present.

Angela is a RN on a surgical ward. She cares for high acuity patients and resource and skill mix issues occur frequently. Angela is confident and competent caring for surgical patients although she becomes "flustered" if things don't quite go according to her shift plan. She is expected to co-ordinate on the ward, a role the organisation has not prepared her for or provided support for. She gets on well with colleagues and has a supportive family. Angela has an active social life, making time for life outside of work. Angela likes routine where she can stick to her care plan for the shift. When there are unexpected complications or poor outcomes, she feels responsible for the consequences although they are often outside her control. This leaves Angela feeling stressed and anxious for a time.

Contrary Case
The following constructed contrary case provides an example of where the attributes of resilience are not present.

Joe is a RN working on a medical ward which is often poorly staffed and does not have an adequate skill mix. Some patients are confused and can be aggressive towards staff. Joe cares for patients who are dying. Although Joe is a RN he does not feel confident in his abilities and feels pessimistic about his work. Frequently Joe has trouble completing the tasks on his plan. The organisation Joe works for has few supports in place for staff. Joe doesn't engage with his colleagues nor does he discuss the stresses of work with family or friends. Joe often calls in sick and after stressful days at work he will isolate himself and drink alone. He often thinks of leaving the nursing profession but is not sure what he would do instead.

Antecedents
Antecedents are the events or incidents that must occur prior to the occurrence of the concept (Walker & Avant, 2011). The main antecedent for resilience is adversity. In order for an individual to employ and demonstrate resilience significant stressors must be encountered which contribute to the experience of adversity. Nurses frequently encounter significant adversity in their work including; exposure to traumatic situations (Mealer et al., 2017; Morrison & Korol, 2014), shift work (Happell et al., 2013; Zander et al., 2013), workplace violence (Hsieh et al., 2016; Koen et al., 2011), staff shortages (Koen et al., 2011; McDonald et al., 2013; Zander et al., 2013), skill mix issues (Happell et al., 2013; Zander et al., 2013), poor remuneration (Khamisa et al., 2013; Koen et al., 2011; McHugh et al., 2011), gender inequalities (Evans, 1997; Williams, 2013), inter-professional conflict (Lanz & Bruk-Lee, 2017), patient acuity (V. Cope et al., 2016) and death and dying (Lanz & Bruk-Lee, 2017; Mealer et al., 2017; Shimoinaba et al., 2015). Although these are not unique to nurses the level of exposure to patients through direct involvement in care and extended interpersonal contact is unique to the profession (Boyle, 2011; Jarrad et al., 2018).

Consequences
Consequences are the events or incidents that result from the occurrence of the concept. The most cited consequences of possessing resilience in the literature are the prevention of negative psychological outcomes, increased job satisfaction, remaining in the workforce and increased quality of patient care (Table 2 – see supplementary material). These consequences are important given the global predictions of nursing shortages which will adversely impact care quality (World Health Organisation, 2013). The attributes associated with resilience enable nurses to adapt and bounce back.

Empirical Referents

The final step of CA is determining the empirical referents by which the defining attributes can be recognised and measured (Walker & Avant, 2011). A number of scales have been designed to measure individual resilience by measuring the attributes associated with resilience. The Connor Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003) is a 25 item scale which is a multidimensional measure and draws on numerous attributes (Table 3). The CD-RISC has been used across a variety of populations and studies measuring resilience in nurses (Gillespie et al., 2009; Guo et al., 2017; Hudgins, 2016; Manzano García & Ayala Calvo, 2012; Meredith Mealer et al., 2012; Rushton et al., 2015; Russo et al., 2018). Five of the six key attributes identified in nurses are included in the CD-RISC (Connor & Davidson, 2003). These attributes are also measurable with a variety of other tools including; self-efficacy (Chen et al., 2001; Sherer et al., 1982), optimism (Scheier et al., 1994), social support (Sarason et al., 1983) and humour (Martin & Lefcourt, 1984; Thorson & Powell, 1991). The attribute of work-life balance/self-care is not included in the CD-RISC but other tools do exist to measure these such as the Mindful Self-Care Scale (Cook-Cottone & Guyker, 2018) which encompasses physical and psychological self-care and considers work-life balance.

Table 3. Characteristics of Resilient People identified by Connor and Davidson (2003)

View change or stress as a challenge/opportunity
Commitment
Recognition of limits to control
Engaging the support of others
Close, secure attachments to others
Personal or collective goals
Self-efficacy
Strengthening effect of stress
Past successes
Realistic sense of control/having choices
Sense of humour
Action orientated approach
Patience
Tolerance of negative effect
Adaptability to change
Optimism
Faith

Working Definition

The nature of nurses' work is characterised by extended interpersonal contact and direct involvement in delivery of patient care having the potential to create stress and adversity demanding interpersonal resilience. This CA has identified that resilience is vital in enabling nurses to positively adapt. There are a number of antecedents, defining attributes and consequences that contribute to nurse resilience (Figure 2). Based on the CA presented we propose the following definition:

Resilience is a complex and dynamic process which when present and sustained enables nurses to positively adapt to workplace stressors, avoid psychological harm and continue to provide safe, high quality patient care.

To sustain resilience, nurses need to draw upon their own resources (including family, friends and colleagues) and have organisational conditions and support which promote resilience. Without the combination of personal attributes, social and workplace support, nurses will face difficulty in continuing in the profession and are likely to leave employment or worse, suffer psychological harm. If steps to sustain nurse resilience are not taken it is likely that nursing shortages will be further exacerbated resulting in poorer health outcomes for patients.

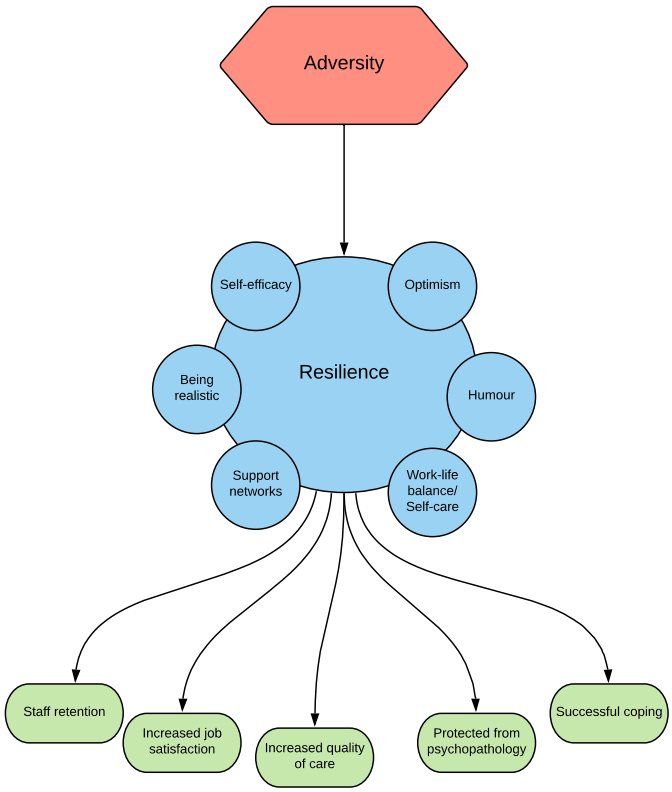

Figure 2. The concept of resilience in nurses

Discussion

Clearly, nurse resilience is gaining increasing attention in both research and practice illustrated by the large number of publications exploring the topic in recent years. Gaining an understanding of resilience and how to sustain nurse resilience is viewed as an essential requirement for the nursing profession. This move towards a focus on protective factors is in distinct contrast to earlier research which concentrated on the potential negative outcomes of working as a nurse (Cusack et al., 2016; Gillespie et al., 2009; Manzano García & Ayala Calvo, 2012; Meredith Mealer et al., 2012; Rushton et al., 2015). Given the increasing pressures faced by the nursing profession including nursing shortages, reducing resources and increasing patient complexity and acuity this shift in focus is needed (Koen et al., 2011; McDonald et al., 2013; Zander et al., 2013). Finding solutions to the challenges nurses face is crucial, promoting and sustaining nurse resilience could potentially play a role in supporting nurses and avoiding harm.

Through the process of concept analysis a detailed description of resilience specific to nurses has been drawn. The six key defining attributes incorporate internal and external factors which are cited as promoting nurse resilience. The use of case studies assists in the demonstration of the concept of resilience specific to nurses applying the presence or absences of the attributes in a clinical context. The clinical working environment is associated with adversity and stressors (Happell et al., 2013; Hsieh et al., 2016; Mealer et al., 2017; Zander et al., 2013) which are antecedents for resilience and are reflected in the case studies presented. A frequently described consequence of possessing high levels of resilience is the prevention of negative psychological outcomes (Table 2 – supplementary material). This includes the prevention or reduction of symptoms of burnout, depression and anxiety which nurses can experience as a result of their work (Hegney et al., 2015; Kutluturkan et al., 2016; Lanz & Bruk-Lee, 2017; Lanz & Bruk-

Lee, 2017; Manzano García & Ayala Calvo, 2012; Mealer et al., 2017; Meredith Mealer et al., 2012; Rushton et al., 2015). As well as being considered as a protective factor it is suggested resilience also results in benefits for nurses, organisations and patients, with increased job satisfaction, staff retention and increased quality of patient care (Table 2 – see supplementary material). Resilient processes are also associated with positive individual outcomes including the maintenance of psychological wellbeing and mental health (Foster et al., 2020; Gao et al., 2017; Itzhaki et al., 2015).

It is evident the literature to date has focused primarily on the actions individual nurses can take to develop and sustain resilience. This approach has recently been questioned and criticised as an incomplete because it largely ignores the working conditions nurses endure which can place them at risk (Taylor, 2019; Traynor, 2017; Virkstis et al., 2018). A more comprehensive approach to sustaining resilience in nurses is needed including consideration of the role organisations can play in promoting resilience of nurses under their employment. The scope and understanding of factors which affect nurse resilience beyond an internal locus is needed to fully optimise resilience research and resulting interventions.

Conclusion

In this paper we have provided a working definition of nurse resilience that has been empirically derived. The six key attributes that define nurse resilience provide a useful framework to guide future research in the area. Until now, research investigating nurse resilience is difficult to interpret due to the use of a multitude of different terms and concepts. We believe that a unified definition of resilience in the nursing profession will enable a more consistent understanding to guide research and interpretation to practice.

Relevance for Clinical Practice

Resilience is needed to successfully adapt and prosper as a nurse in clinical practice. Understanding resilience in the context of nurses and the factors which affect nurse resilience are critical to the development of effective research, policies, interventions and work environments to protect nurse wellbeing, retain nurses in the profession and ensure the provision of quality care. Organisations need to develop and provide strategies which promote and sustain resilience in mental health nurses. Given the complexity of nurse resilience, multifaceted approaches are needed which consider the unique stressors mental health nurses encounter and includes changes to work environment and conditions, as well as programs which help to develop and maintain individual resilience. These strategies need to implemented, tested and evaluated in different mental health settings to optimise resilience, reduce the risk of psychological harm and promote the wellbeing of mental health nurses.

Acknowledgements

We would like to acknowledge Dr Shirley McGough for her critical review of the manuscript.

References

Ablett, J., R., & Jones, R., S., P. (2007). Resilience and well-being in palliative care staff: A qualitative study of hospice nurses' experience of work. *Psycho-Oncology*, *16*(8), 733-740. https://doi.org/10.1002/pon.1130

Aburn, G., Gott, M., & Hoare, K. (2016). What is resilience? An integrative review of the empirical literature. *Journal of Advanced Nursing*, *72*(5), 980-1000. https://doi.org/10.1111/jan.12888

Adams, A. M. N., Chamberlain, D., & Giles, T. M. (2018). The perceived and experienced role of the nurse unit manager in supporting the wellbeing of intensive care unit nurses: An integrative literature review. *Australian Critical Care*. https://doi.org/10.1016/j.aucc.2018.06.003

Agaibi, C. E., & Wilson, J. P. (2005). Trauma, PTSD, and resilience: A review of the literature. *Trauma, Violence, & Abuse*, *6*(3), 195-216. https://doi.org/10.1177/1524838005277438

Alderson, M., Parent-Rocheleau, X., & Mishara, B. (2015). Critical Review on Suicide Among Nurses. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, *36*(2), 91-101. https://doi.org/10.1027/0227-5910/a000305

Anderson, K. M., Renner, L. M., & Danis, F. S. (2012). Recovery:Resilience and growth in the aftermath of domestic violence. *Violence Against Women*, *18*(11), 1279-1299. https://doi.org/10.1177/1077801212470543

Ang, S. Y., Uthaman, T., Ayre, T. C., Mordiffi, S. Z., Ang, E., & Lopez, V. (2018). Association between demographics and resilience - a cross-sectional study among nurses in Singapore. *International Nursing Review*. https://doi.org/10.1111/inr.12441

Åstedt-Kurki, P., & Isola, A. (2001). Humour between nurse and patient, and among staff: Analysis of nurses' diaries. *Journal of Advanced Nursing*, *35*(3), 452-458. https://doi.org/10.1046/j.1365-2648.2001.01860.x

Atkinson, P. A., Martin, C. R., & Rankin, J. (2009). Resilience revisited. *Journal of Psychiatric and Mental Health Nursing*, *16*(2), 137-145. https://doi.org/10.1111/j.1365-2850.2008.01341.x

Bakker, A. B., & Schaufeli, W. B. (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior*, *29*(2), 147-154. https://doi.org/10.1002/job.515

Baldwin, M. (2008). Concept analysis as a method of inquiry. *Nurse Researcher*, *15*(2), 49-58. https://doi.org/10.7748/nr2008.01.15.2.49.c6329

Bandura, A. (1978). Self- efficacy: Toward a unifying theory of behavioral change. *Advances in Behaviour Research and Therapy*, *1*(4), 139-161. https://doi.org/10.1016/0146-6402(78)90002-4

Bardoel, E. A., Pettit, T. M., De Cieri, H., & McMillan, L. (2014). Employee resilience: An emerging challenge for HRM. *Asia Pacific Journal of Human Resources*, *52*(3), 279-297. https://doi.org/10.1111/1744-7941.12033

Bartone, P. T. (1999). Hardiness protects against war-related stress in army reserve forces. *Consulting Psychology Journal: Practice and Research*, *51*(2), 72-82. https://doi.org/10.1037/1061-4087.51.2.72

Boddy, C. (2014). Corporate psychopaths, conflict, employee affective well-being and counterproductive work behaviour. *Journal of Business Ethics*, *121*(1), 107-121. https://doi.org/10.1007/s10551-013-1688-0

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, *59*(1), 20-28. https://doi.org/10.1037/0003-066X.59.1.20

Boyle, D. A. (2011). Countering compassion fatigue: A requisite nursing agenda. *Online Journal of Issues in Nursing*, *16*(1), 2. https://doi.org/10.3912/OJIN.Vol16No01Man02

Brennan, E. (2017). Towards resilience and wellbeing in nurses. *British Journal of Nursing*, *26*(1), 43. https://doi.org/10.12968/bjon.2017.26.1.43

Brown, J., Francis, K., Cusack, L., & Hegney, D. (2016). Comprehensive systematic review of appropriateness and effectiveness of intervention programs that aim to build and maintain resilience in nurses and midwives. In Y. Mak, V. Chiang, & O. Fung (Eds.), *Enhancing patient safety through quality nursing education - the challenges and solutions from a multi-disciplinary perspective* (pp. 70-89). The Hong Kong Society for Nursing Education Limited.

Cameron, F., & Brownie, S. (2010). Enhancing resilience in registered aged care nurses. *Australasian Journal on Ageing*, *29*(2), 66-71. https://doi.org/10.1111/j.1741-6612.2009.00416.x

Carpenter, G. S. J., Carpenter, T. P., Kimbrel, N. A., Flynn, E. J., Pennington, M. L., Cammarata, C., Zimering, R. T., Kamholz, B. W., & Gulliver, S. B. (2015). Social support, stress, and suicidal ideation in professional firefighters. *American Journal of Health Behavior*, *39*(2), 191. https://doi.org/10.5993/AJHB.39.2.5

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, *30*(7), 879-889. https://doi.org/10.1016/j.cpr.2010.01.006

Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational Research Methods*, *4*, 62-83. https://doi.org/10.1177/109442810141004

Chinn, P. L., & Kramer, M. K. (1995). *Theory and nursing : A systematic approach*. Mo:Mosby.

Chughtai, A., Byrne, M., & Flood, B. (2015). Linking ethical leadership to employee well-being: The role of trust in supervisor. *Journal of Business Ethics*, *128*(3), 653-663. https://doi.org/10.1007/s10551-014-2126-7

Cicchetti, D., Rogosch, F. A., Lynch, M., & Holt, K. D. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. *Development and Psychopathology*, *5*(4), 629-647. https://doi.org/10.1017/S0954579400006209

Cline, S. (2015). Nurse leader resilience: Career defining moments. *Nursing Administration Quarterly*, *39*(2), 117-122. https://doi.org/10.1097/NAQ.0000000000000087

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*(5), 300-314. https://doi.org/10.1097/00006842-197609000-00003

Cohen, E., Dekel, R., & Solomon, Z. (2002). Long-term adjustment and the role of attachment among Holocaust child survivors. *Personality and Individual Differences*, *33*(2), 299-310. https://doi.org/10.1016/S0191-8869(01)00156-8

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC. *Depression and Anxiety*, *18*(2), 76-82. https://doi.org/10.1002/da.10113

Cook-Cottone, C., & Guyker, W. (2018). The development and validation of the Mindful Self-Care Scale (MSCS): An assessment of practices that support positive embodiment. *Mindfulness*, *9*(1), 161-175. https://doi.org/10.1007/s12671-017-0759-1

Cope, V., Jones, B., & Hendricks, J. (2016). Resilience as resistance to the new managerialism: Portraits that reframe nursing through quotes from the field. *Journal of Nursing Management*, *24*(1), 115-122. https://doi.org/10.1111/jonm.12279

Cope, V., Jones, B., & Hendricks, J. (2016). Why nurses chose to remain in the workforce: Portraits of resilience. *Collegian*, *23*(1), 87-95. https://doi.org/10.1016/j.colegn.2014.12.001

Cope, V. C., Jones, B., & Hendricks, J. (2016). Residential aged care nurses: Portraits of resilience. *Contemporary Nurse*, *52*(6), 736-752. https://doi.org/10.1080/10376178.2016.1246950

Craigie, M., Osseiran-Moisson, R., Hemsworth, D., Aoun, S., Francis, K., Brown, J., Hegney, D., & Rees, C. (2015). The influence of trait-negative affect and compassion satisfaction on compassion fatigue in Australian nurses. *Psychological Trauma: Theory, Research, Practice and Policy.*, *8*(1), 88-97. https://doi.org/10.1037/tra0000050

Craigie, M., Slatyer, S., Hegney, D., Osseiran-Moisson, R., Gentry, E., Davis, S., Dolan, T., & Rees, C. (2016). A pilot evaluation of a mindful self-care and resiliency (MSCR) intervention for nurses. *Mindfulness*, *7*(3), 764-774. https://doi.org/10.1007/s12671-016-0516-x

Cusack, L., Smith, M., Hegney, D., Rees, C., Breen, L., Witt, R., Rogers, C., Williams, A., Cross, W., & Cheung, K. (2016). Exploring environmental factors in nursing workplaces that promote psychological resilience: Constructing a unified theoretical model. *Frontiers In Psychology*, *7*(600). https://doi.org/10.3389/fpsyg.2016.00600

Daniels, J. K., Hegadoren, K. M., Coupland, N. J., Rowe, B. H., Densmore, M., Neufeld, R. W. J., & Lanius, R. A. (2012). Neural correlates and predictive power of trait resilience in an acutely traumatized sample: A pilot investigation. *The Journal of Clinical Psychiatry*, *73*(3), 327-332. https://doi.org/10.4088/JCP.10m06293

Dean, R. A., & Major, J. E. (2008). From critical care to comfort care: The sustaining value of humour. *Journal of Clinical Nursing*, *17*(8), 1088-1095. https://doi.org/10.1111/j.1365-2702.2007.02090.x

Delgado, C., Upton, D., Ranse, K., Furness, T., & Foster, K. (2017). Nurses' resilience and the emotional labour of nursing work: An integrative review of empirical literature. *International Journal of Nursing Studies*, *70*, 71-88. https://doi.org/10.1016/j.ijnurstu.2017.02.008

Dolan, G., Strodl, E., & Hamernik, E. (2012). Why renal nurses cope so well with their workplace stressors. *Journal of Renal Care*, *38*(4), 222-232. https://doi.org/10.1111/j.1755-6686.2012.00319.x

Dyess, L. S. M., Prestia, S. A., & Smith, C. M. (2015). Support for caring and resiliency among successful nurse leaders. *Nursing Administration Quarterly*, *39*(2), 104-116. https://doi.org/10.1097/NAQ.0000000000000101

Earvolino-ramirez, M. (2007). Resilience: A concept analysis. *Nursing Forum*, *42*(2), 73-82. https://doi.org/10.1111/j.1744-6198.2007.00070.x

Elbogen, E. B., Johnson, S. C., Wagner, H. R., Newton, V. M., Timko, C., Vasterling, J. J., & Beckham, J. C. (2012). Protective factors and risk modification of violence in Iraq and Afghanistan War veterans. *The Journal of Clinical Psychiatry*, *73*(6), e767-e773. https://doi.org/10.4088/JCP.11m07593

English Oxford Dictionary. (2017). Retrieved 16th September from https://en.oxforddictionaries.com/definition/resilience

English Oxford Dictionary. (2018). Retrieved 1st September from https://en.oxforddictionaries.com/definition/adversity

Evans, J. (1997). Men in nursing: Issues of gender segregation and hidden advantage. *Journal of Advanced Nursing*, *26*(2), 226-231. https://doi.org/10.1046/j.1365-2648.1997.1997026226.x

Felton, J. S. (1998). Burnout as a clinical entity - its importance in health care workers. *48*(4), 237-250.

Fitzpatrick, J. J., & McCarthy, G. (2016). *Nursing concept analysis : Applications to research and practice*. Springer Publishing Company.

Flarity, E. K., Gentry, E. J., & Mesnikoff, E. N. (2013). The effectiveness of an educational program on preventing and treating compassion fatigue in emergency nurses. *Advanced Emergency Nursing Journal*, *35*(3), 247-258. https://doi.org/10.1097/TME.0b013e31829b726f

Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts, and theory. *European Psychologist*, *18*(1), 12-23. https://doi.org/10.1027/1016-9040/a000124

Foley, S. A., & Davis, H. A. (2017). A guide to concept analysis. *Clinical Nurse Specialist*, *31*(2), 70-73. https://doi.org/10.1097/NUR.0000000000000277

Foster, K., Shochet, I., Wurfl, A., Roche, M., Maybery, D., Shakespeare-Finch, J., & Furness, T. (2018). On PAR: A feasibility study of the Promoting Adult Resilience programme with mental health nurses. *International Journal of Mental Health Nursing*. https://doi.org/10.1111/inm.12447

Foureur, M., Besley, K., Burton, G., Yu, N., & Crisp, J. (2013). Enhancing the resilience of nurses and midwives: Pilot of a mindfulnessbased program for increased health, sense of

coherence and decreased depression, anxiety and stress. *Contemporary Nurse*, *45*(1), 114-125. https://doi.org/10.5172/conu.2013.45.1.114
Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. *American Psychologist*, *56*(3), 218-226. https://doi.org/10.1037/0003-066X.56.3.218
Fumis, R., Junqueira Amarante, G., Fátima Nascimento, A., & Vieira Junior, J. (2017). Moral distress and its contribution to the development of burnout syndrome among critical care providers. *Annals of Intensive Care*, *7*(1), 1-8. https://doi.org/10.1186/s13613-017-0293-2
Galatzer-levy, I. R., Brown, A. D., Henn-haase, C., Metzler, T. J., Neylan, T. C., & Marmar, C. R. (2013). Positive and negative emotion prospectively predict trajectories of resilience and distress among high-exposure police officers. *Emotion*, *13*(3), 545-553. https://doi.org/10.1037/a0031314
Gao, T., Ding, X., Chai, J., Zhang, Z., Zhang, H., Kong, Y., & Mei, S. (2017). The influence of resilience on mental health: The role of general well-being. *International journal of nursing practice*, *23*(3). https://doi.org/10.1111/ijn.12535
Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist*, *34*(4), 416-430. https://doi.org/10.1177/0002764291034004003
Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development*, *55*(1), 97-111. https://doi.org/10.2307/1129837
Garmezy, N., & Streitman, S. (1974). Children at risk: The search for the antecedents of schizophrenia. Part I. Conceptual models and research methods. *Schizophrenia Bulletin*, *8*, 14-90. https://doi.org/10.1093/schbul/1.8.14
Gershon, R. R. M., Barocas, B., Canton, A. N., Xianbin, L., & Vlahov, D. (2009). Mental, Physical, and Behavioral Outcomes Associated With Perceived Work Stress in Police Officers. *Criminal Justice and Behavior*, *36*(3), 275-289. https://doi.org/10.1177/0093854808330015
Gillespie, B. M., Chaboyer, W., & Wallis, M. (2009). The influence of personal characteristics on the resilience of operating room nurses: A predictor study. *International Journal of Nursing Studies*, *46*(7), 968-976. https://doi.org/10.1016/j.ijnurstu.2007.08.006
Gillespie, B. M., Chaboyer, W., Wallis, M., & Grimbeek, P. (2007). Resilience in the operating room: Developing and testing of a resilience model. *Journal of Advanced Nursing*, *59*(4), 427-438. https://doi.org/10.1111/j.1365-2648.2007.04340.x
Gillman, L., Adams, J., Kovac, R., Kilcullen, A., House, A., & Doyle, C. (2015). Strategies to promote coping and resilience in oncology and palliative care nurses caring for adult patients with malignancy: A comprehensive systematic review. *JBI Database of Systematic Reviews and Implementation Reports*, *13*(5), 131-204.
Glass, N. (2009). An investigation of nurses' and midwives' academic/clinical workplaces: A healing model to improve and sustain hope, optimism, and resilience in professional practice. *Holistic Nursing Practice*, *23*(3), 158-170. https://doi.org/10.1097/HNP.0b013e3181a056c4
Gold, P. B., Engdahl, B. E., Eberly, R. E., Blake, R. J., Page, W. F., & Frueh, B. C. (2000). Trauma exposure, resilience, social support, and PTSD construct validity among former prisoners of war. *Social Psychiatry and Psychiatric Epidemiology*, *35*(1), 36-42. https://doi.org/10.1007/s001270050006
Gorse, C., Johnston, D., & Pritchard, M. (2012). *A dictionary of construction, surveying, and civil engineering*. Oxford University Press.

Grafton, E., Gillespie, B., & Henderson, S. (2010). Resilience: The power within. *Oncology Nursing Forum*, *37*(6), 698. https://doi.org/10.1188/10.ONF.698-705

Guest, R., Craig, A., Nicholson Perry, K., Tran, Y., Ephraums, C., Hales, A., Dezarnaulds, A., Crino, R., & Middleton, J. (2015). Resilience following spinal cord injury: A prospective controlled study investigating the influence of the provision of group cognitive behavior therapy during inpatient rehabilitation. *Rehabilitation Psychology*, *60*(4), 311-321. https://doi.org/10.1037/rep0000052

Guo, Y., Cross, W., Plummer, V., Lam, L., Luo, Y., & Zhang, J. (2017). Exploring resilience in Chinese nurses: A cross-sectional study. *Journal of Nursing Management*, *25*(3), 223-230. https://doi.org/10.1111/jonm.12457

Hagen, J., Knizek, B. L., & Hjelmeland, H. (2017). Mental health nurses' experiences of caring for suicidal patients in psychiatric wards: An emotional endeavor. *Archives of Psychiatric Nursing*, *31*(1), 31-37. https://doi.org/10.1016/j.apnu.2016.07.018

Happell, B., Dwyer, T., Reid-searl, K., Burke, K. J., Caperchione, C. M., & Gaskin, C. J. (2013). Nurses and stress: Recognizing causes and seeking solutions. *Journal of Nursing Management*, *21*(4), 638-647. https://doi.org/10.1111/jonm.12037

Hart, P. L., Brannan, J. D., & De Chesnay, M. (2014). Resilience in nurses: An integrative review. *Journal of Nursing Management*, *22*(6), 720-734. https://doi.org/10.1111/j.1365-2834.2012.01485.x

Hegney, D., Craigie, M., emsworth, D., Osseiran-Moisson, R., Aoun, S., Francis, K., & Drury, V. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: study 1 results. *Journal of Nursing Management*, *22*, 506-518. https://doi.org/10.1111/jonm.12160

Hegney, D., Craigie, M., Hemsworth, D., Osseiran-Moisson, R., Aoun, S., Francis, K., & Drury, V. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: study 1 results. *Journal of Nursing Management*, *22*, 506-518. https://doi.org/10.1111/jonm.12160

Hegney, D., Rees, C. S., Eley, R., Osseiran-Morrison, R., & Francis, K. (2015). The contribution of individual psychological resilience in determining the professional quality of life of Australian nurses. *Frontiers in Psychology*, *6*, 1613. https://doi.org/10.3389/fpsyg.2015.01613

Hendin, H., & Haas, A. P. (1984). *Wounds of war: The psychological aftermath of combat in Vietnam*. Basic Books.

Hoge, E. A., Austin, E. D., & Pollack, M. H. (2007). Resilience: Research evidence and conceptual considerations for posttraumatic stress disorder. *Depression and Anxiety*, *24*(2), 139-152. https://doi.org/10.1002/da.20175

Hsieh, H., Chang, S., & Wang, H. (2017). The relationships among personality, social support, and resilience of abused nurses at emergency rooms and psychiatric wards in Taiwan. *Women Health*, *57*(1), 40-51. https://doi.org/10.1080/03630242.2016.1150385

Hsieh, H., Hung, Y., Wang, H., Ma, S., & Chang, S. (2016). Factors of resilience in emergency department nurses who have experienced workplace violence in Taiwan. *Journal of Nursing Scholarship*, *48*(1), 23-30. https://doi.org/10.1111/jnu.12177

Hudgins, T. A. (2016). Resilience, job satisfaction and anticipated turnover in nurse leaders. *Journal of Nursing Management*, *24*(1), E62-E69. https://doi.org/10.1111/jonm.12289

Itzhaki, M., Peles-Bortz, A., Kostistky, H., Barnoy, D., Filshtinsky, V., & Bluvstein, I. (2015). Exposure of mental health nurses to violence associated with job stress, life satisfaction, staff resilience, and post-traumatic growth. *International Journal of Mental Health Nursing*, *24*, 403-412. https://doi.org/10.1111/inm.12151

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. *Journal of Advanced Nursing*, *60*(1), 1-9. https://doi.org/10.1111/j.1365-2648.2007.04412.x

Jarrad, R., Hammad, S., Shawashi, T., & Mahmoud, N. (2018). Compassion fatigue and substance use among nurses. *Annals of General Psychiatry*, *17*(13). https://doi.org/10.1186/s12991-018-0183-5

Jou, R.-C., Kuo, C.-W., & Tang, M.-L. (2013). A study of job stress and turnover tendency among air traffic controllers: The mediating effects of job satisfaction. *Transportation Research Part E*, *57*, 95-104. https://doi.org/10.1016/j.tre.2013.01.009

Kahana, B., Harel, Z., & Kahana, E. (1988). Predictors of psychological well-being among survivors of the Holocaust. In J. P. Wilson, Z. Harel, & B. Kahana (Eds.), *Human adaptation to extreme stress: From the Holocaust to Vietnam* (pp. 171-192). Plenum Press.

Kalliath, T., & Brough, P. (2008). Work-life balance: A review of the meaning of the balance construct. *Journal of Management and Organization*, *14*(3), 323-327. https://doi.org/10.5172/jmo.837.14.3.323

Kent, M. (2006). *The Oxford dictionary of sports science & medicine* (3rd ed.). Oxford University Press.

Khamisa, N., Peltzer, K., & Oldenburg, B. (2013). Burnout in relation to specific contributing factors and health outcomes among nurses: A systematic review. *International Journal of Environmental Research and Public Health.*, *10*, 2214-2240. https://doi.org/10.3390/ijerph10062214

Kimbrel, N. A., Steffen, L. E., Meyer, E. C., Kruse, M. I., Knight, J. A., Zimering, R. T., & Gulliver, S. B. (2011). A revised measure of occupational stress for firefighters: Psychometric properties and relationship to posttraumatic stress disorder, depression, and substance abuse. *Psychological Services*, *8*(4), 294-306. https://doi.org/10.1037/a0025845

Kluznik, J. C., Speed, N., Van Velkenberg, C., & MacGraw, R. (1986). Forty-year follow-up of United States prisoners of war. *American Journal of Psychiatry*, *143*(11), 1443-1446. https://doi.org/10.1176/ajp.143.11.1443

Kobasa, S. C., Maddi, S. R., & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology*, *42*(1), 168-177. https://doi.org/10.1037/0022-3514.42.1.168

Koen, M., van Eeden, C., & Wissing, M. (2011). The prevalence of resilience in a group of professional nurses. *Health SA Gesonheid*, *16*(1), 1-11. https://doi.org/10.4102/hsag.v16i1.576

Koinis, A., Giannou, V., Drantaki, V., Angelaina, S., Stratou, E., & Saridi, M. (2015). The impact of healthcare workers job environment on their mental-emotional health. Coping strategies: the case of a local general hospital. *Health Psychology Research*, *3*(1). https://doi.org/10.4081/hpr.2015.1984

Kornhaber, R. A., & Wilson, A. (2011). Building resilience in burns nurses: A descriptive phenomenological inquiry. *Journal of Burn Care & Research*, *32*(4), 481-488. https://doi.org/10.1097/BCR.0b013e3182223c89

Kutluturkan, S., Sozeri, E., Uysal, N., & Bay, F. (2016). Resilience and burnout status among nurses working in oncology. *Annals of General Psychiatry*, *15*(33). https://doi.org/10.1186/s12991-016-0121-3

Lanz, J. J., & Bruk-Lee, V. (2017). Resilience as a moderator of the indirect effects of conflict and workload on job outcomes among nurses. *Journal of Advanced Nursing*, *73*(12), 2973-2986. https://doi.org/10.1111/jan.13383

Lanz, J. J., & Bruk-Lee, V. (2017). Resilience as a moderator of the indirect effects of conflict and workload on job outcomes among nurses. *Journal of Advanced Nursing*, *73*(12), 2973-2986. https://doi.org/10.1111/jan.13383

Lee, J.-S., Ahn, Y.-S., Jeong, K.-S., Chae, J.-H., & Choi, K.-S. (2014). Resilience buffers the impact of traumatic events on the development of PTSD symptoms in firefighters. *Journal of Affective Disorders*, *162*, 128-133. https://doi.org/10.1016/j.jad.2014.02.031

Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. *Human Resource Management Review*, *21*(3), 243-255. https://doi.org/10.1016/j.hrmr.2010.07.001

Lim, H. A., Tan, J. Y. S., Liu, J., Chua, J., Ang, E. N. K., Kua, E. H., & Mahendran, R. (2016). Strengthening resilience and reducing stress in psychosocial care for nurses practicing in oncology settings. *Journal of Continuing Education in Nursing*, *47*(1), 8-10. https://doi.org/10.3928/00220124-20151230-03

Liu, D., Fairweather-Schmidt, A., Burns, R., & Roberts, R. (2015). The Connor-Davidson resilience scale: Establishing invariance between gender across the lifespan in a large community based study. *Journal of Psychopathology and Behavioral Assessment*, *37*(2), 340-348. https://doi.org/10.1007/s10862-014-9452-z

Lowe, L. D. (2013). Creating a caring work environment and fostering nurse resilience. *International Journal for Human Caring*, *17*(4), 52-59.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, *71*(3), 543-562. https://doi.org/10.1111/1467-8624.00164

Mahoney, J. L., & Bergman, L. R. (2002). Conceptual and methodological considerations in a developmental approach to the study of positive adaptation. *Journal of Applied Developmental Psychology*, *23*(2), 195-217. https://doi.org/10.1016/S0193-3973(02)00104-1

Maier, R. (2011). Dimensions of stress among air traffic controllers. *Journal of Psychological and Educational Research*, *19*(1), 52-62.

Manzano García, G., & Ayala Calvo, J. C. (2012). Emotional exhaustion of nursing staff: influence of emotional annoyance and resilience. *International Nursing Review*, *59*(1), 101-107. https://doi.org/10.1111/j.1466-7657.2011.00927.x

Marie, M., Hannigan, B., & Jones, A. (2017). Resilience of nurses who work in community mental health workplaces in Palestine. *International Journal of Mental Health Nursing*, *26*(4), 344-354. https://doi.org/10.1111/inm.12229

Martin, R. A., & Lefcourt, H. M. (1984). Situational Humor Response Questionnaire: Quantitative measure of sense of humor. *Journal of Personality and Social Psychology*, *47*(1), 145-155. https://doi.org/10.1037/0022-3514.47.1.145

Martinussen, M., & Richardsen, A. (2006). Air Traffic Controller Burnout: Survey Responses Regarding Job Demands, Job Resources, and Health. *Aviation, Space and Environmental Medicine*, *77*(4), 422-428.

Martinussen, M., Richardsen, A. M., & Burke, R. J. (2007). Job demands, job resources, and burnout among police officers. *Journal of Criminal Justice*, *35*(3), 239-249. https://doi.org/10.1016/j.jcrimjus.2007.03.001

Matos, P. S., Neushotz, L. A., Quinn Griffin, M. T., & Fitzpatrick, J. J. (2010). An exploratory study of resilience and job satisfaction among psychiatric nurses working in inpatient units. *International Journal of Mental Health Nursing*, *19*(5), 307-312. https://doi.org/10.1111/j.1447-0349.2010.00690.x

McAllister, M. (2013). Resilience: A personal attribute, social process and key professional resource for the enhancement of the nursing role. *Professioni Infermieristiche*, *66*(1), 55-62. https://doi.org/10.7429/pi.2013.661055.

McAllister, M., & McKinnon, J. (2009). The importance of teaching and learning resilience in the health disciplines: A critical review of the literature. *Nurse Education Today*, *29*(4), 371-379. https://doi.org/10.1016/j.nedt.2008.10.011

McDonald, G., Jackson, D., Vickers, M. H., & Wilkes, L. (2016). Surviving workplace adversity: a qualitative study of nurses and midwives and their strategies to increase personal resilience. *Journal of Nursing Management*, *24*(1), 123-131. https://doi.org/10.1111/jonm.12293

McDonald, G., Jackson, D., Wilkes, L., & Vickers, M. (2013). Personal resilience in nurses and midwives: Effects of a work-based educational intervention. *Contemporary Nurse*, *45*(1), 134-143. https://doi.org/10.5172/conu.2013.45.1.134

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 Education Today*, *32*(4), 378-384. https://doi.org/DOI 10.1016/j.nedt.2011.04.012

McHugh, M. D., Kutney-Lee, A., Cimiotti, J. P., Sloane, D. M., & Aiken, L. H. (2011). Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. *Health Affairs (Project Hope)*, *30*(2), 202. https://doi.org/10.1377/hlthaff.2010.0100

Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., & Moss, M. (2014). Feasibility and acceptability of a resilience training program for intensive care unit nurses. *American Journal of Critical Care*, *23*(6), 97-105. https://doi.org/10.4037/ajcc2014747

Mealer, M., Jones, J., & Meek, P. (2017). Factors affecting resilience and development of posttraumatic stress disorder in critical care nurses. *American Journal of Critical Care*, *26*(3), 184-192. https://doi.org/10.4037/ajcc2017798

Mealer, M., Jones, J., & Moss, M. (2012). A qualitative study of resilience and posttraumatic stress disorder in United States ICU nurses. *Intensive Care Medicine*, *38*(9), 1445-1451. https://doi.org/10.1007/s00134-012-2600-6

Mealer, M., Jones, J., Newman, J., McFann, K. K., Rothbaum, B., & Moss, M. (2012). The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: Results of a national survey. *International Journal of Nursing Studies*, *49*(3), 292-299. https://doi.org/10.1016/j.ijnurstu.2011.09.015

Mealer, M., Jones, J., Newman, J., McFann, K. K., Rothbaum, B., & Moss, M. (2012). The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: Results of a national survey. *International Journal of Nursing Studies*, *49*, 292-299. https://doi.org/10.1016/j.ijnurstu.2011.09.015

Meyer, E. C., Zimering, R., Daly, E., Knight, J., Kamholz, B. W., & Gulliver, S. B. (2012). Predictors of posttraumatic stress disorder and other psychological symptoms in trauma-exposed firefighters. *Psychological Services*, *9*(1), 1-15. https://doi.org/10.1037/a0026414

Moran, P. B., & Eckenrode, J. (1992). Protective personality characteristics among adolescent victims of maltreatment. *Child Abuse and Neglect: The International Journal*, *16*(5), 743-754. https://doi.org/10.1016/0145-2134(92)90111-4

Morrison, K., & Korol, S. (2014). Nurses' perceived and actual caregiving roles: identifying factors that can contribute to job satisfaction. *Journal of Clinical Nursing*, *23*, 3468-3477.

Morse, M. J. (1995). Exploring the theoretical basis of nursing using advanced techniques of concept analysis. *Advances in Nursing Science*, *17*(3), 31-46. https://doi.org/10.1097/00012272-199503000-00005

O'Dougherty-Wright, M., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of Resilience in Children* (2 ed.). Springer.

O'Dougherty-Wright, M., Masten, A. S., Northwood, A., & Hubbard, J. J. (1997). Long-term effects of massive trauma: Developmental and psychobiological perspectives. In D. Cicchetti & S. L. Toth (Eds.), *Rochester Symposium on Developmental Psychopathology.* (Vol. 8, pp. 181-225). University of Rochester.

Online Etymology Dictionary. (2017). Retrieved 1st October from http://www.etymonline.com/word/resilient

Orem, D. E. (1985). *Nursing: Concepts of practice* (3rd ed.). McGraw-Hill.

Pan, J., & Chan, C. L. W. (2007). Resilience: A new research area in positive psychology. *Psychologia*, *50*(3), 164-176. https://doi.org/10.2117/psysoc.2007.164

Papazoglou, K., & Andersen, J. P. (2014). A guide to utilizing police training as a tool to promote resilience and improve health outcomes among police officers. *Traumatology: An International Journal*. https://doi.org/10.1037/h0099394

Park, C., & Allaby, M. (2017). *A dictionary of environment and conservation* (3rd ed.. ed.). Oxford University Press.

Pietrzak, R. H., Tsai, J ., Kirwin, P. D., & Southwick, S. M. (2014). Successful aging among older veterans in the United States. *American Journal Geriatric Psychiatry*, *22*, 551-563. https://doi.org/10.1016/j.jagp.2012.11.018

Pipe, T. B., Buchda, V. L., Launder, S., Hudak, B., Hulvey, L., Karns, K. E., & Pendergast, D. (2012). Building personal and professional resources of resilience and agility in the healthcare workplace. *Stress and Health*, *28*(1), 11-22. https://doi.org/10.1002/smi.1396

Prosser, S. J., Metzger, M., & Gulbransen, K. (2017). Don't just survive, thrive: Understanding how acute psychiatric nurses develop resilience. *Archives of Psychiatric Nursing*, *31*(2), 171-176. https://doi.org/10.1016/j.apnu.2016.09.010

Ray, S. L., Wong, C., White, D., & Heaslip, K. (2013). Compassion satisfaction, compassion fatigue, work life conditions, and burnout among frontline mental health care professionals. *Traumatology*, *19*(4), 255-267. https://doi.org/10.1177/1534765612471144

Richards, K., Campenni, C., & Muse-Burke, J. (2010). Self-care and well-being in mental health professionals: The mediating effects of self-awareness and mindfulness. *Journal of Mental Health Counseling*, *32*(3), 247-264. https://doi.org/10.17744/mehc.32.3.0n31v88304423806

Rodgers, B. L., & Knafl, K. A. (1993). *Concept development in nursing : foundations, technqiues, and applications*. PA : Saunders.

Rushton, C., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burnout and resilience among nurses practising in high-intensity settings. *American Journal of Critical Care*, *24*(5), 412-420. https://doi.org/10.4037/ajcc2015291

Russo, C., Calo, O., Harrison, G., Mahoney, K., & Zavotsky, K. (2018). Resilience and Coping After Hospital Mergers. *Clinical Nurse Specialist*, *32*(2), 97-102. https://doi.org/10.1097/NUR.0000000000000358

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*(3), 316-331. https://doi.org/10.1111/j.1939-0025.1987.tb03541.x

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology*, *44*(1), 127-139. https://doi.org/10.1037/0022-3514.44.1.127

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test.

Journal of Personality and Social Psychology, *67*(6), 1063-1078. https://doi.org/10.1037/0022-3514.67.6.1063
Shepperd, J. A., Pogge, G., & Howell, J. L. (2017). Assessing the consequences of unrealistic optimism: Challenges and recommendations. *Consciousness and Cognition*, *50*, 69-78. https://doi.org/10.1016/j.concog.2016.07.004
Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports*, *51*(2), 663-671. https://doi.org/10.2466/pr0.1982.51.2.663
Shimoinaba, K., Connor, M., Lee, S., & Kissane, D. (2015). Nurses' resilience and nurturance of the self. *International Journal of Palliative Nursing*, *21*(10), 504-510. https://doi.org/10.12968/ijpn.2015.21.10.504
Shirey, R. M. (2012). How resilient are your team members? *The Journal of Nursing Administration*, *42*(12), 551-553. https://doi.org/10.1097/NNA.0b013e318274b4d6
Slatyer, S., Craigie, M., Heritage, B., Davis, S., & Rees, C. (2017). Evaluating the effectiveness of a brief mindful self-care and resiliency (MSCR) intervention for nurses: A controlled trial. *Mindfulness*, 1-13. https://doi.org/10.1007/s12671-017-0795-x
Slatyer, S., Craigie, M., Rees, C., Davis, S., Dolan, T., & Hegney, D. (2017). Nurse experience of participation in a mindfulness-based self-care and resiliency intervention. *Mindfulness*. https://doi.org/10.1007/s12671-017-0802-2
Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*(1). https://doi.org/10.3402/ejpt.v5.25338
Tan-Kristanto, S., & Kiropoulos, L. A. (2015). Resilience, self- efficacy, coping styles and depressive and anxiety symptoms in those newly diagnosed with multiple sclerosis. *Psychology, Health & Medicine*, *20*(6), 635-645. https://doi.org/10.1080/13548506.2014.999810
Tanay, M., Wiseman, T., Roberts, J., & Ream, E. (2014). A time to weep and a time to laugh: Humour in the nurse–patient relationship in an adult cancer setting. *Supportive Care in Cancer*, *22*(5), 1295-1301. https://doi.org/10.1007/s00520-013-2084-0
Taylor, R. A. (2019). Contemporary issues: Resilience training alone is an incomplete intervention. *Nurse Education Today*, *In press*. https://doi.org/https://doi.org/10.1016/j.nedt.2019.03.014
Thorson, J. A., & Powell, F. C. (1991). Measurement of sense of humor. *Psychological Reports*, *69*(2), 691-702.
Tofthagen, R., Talseth, A., & Fagerström, L. (2014). Mental health nurses' experiences of caring for patients suffering from self-harm. *Nursing Research and Practice*, *2014*, 905741. https://doi.org/10.1155/2014/905741
Traynor, M. (2017). Resilience: Part of the problem or part of the solution? *Mental Health Nursing*, *37*(6), 8-10.
Tubbert, S. J. (2016). Resiliency in emergency nurses. *Journal of Emergency Nursing*, *42*(1), 47-52. https://doi.org/10.1016/j.jen.2015.05.016
Turner, S. B., & Kaylor, S. D. (2015). Neuman systems model as a conceptual framework for nurse resilience. *Nursing Science Quarterly*, *28*(3), 213-217. https://doi.org/10.1177/0894318415585620
Tusaie, K., & Dyer, J. (2004). Resilience: A historical review of the construct. *Holistic Nursing Practice*, *18*(1), 3-10. https://doi.org/10.2466/pr0.2003.93.3f.1339

Vázquez-Calatayud, M., Oroviogoicoechea, C., Saracibar, M., & Pumar-Méndez, M. J. (2017). Transforming care in nursing: A concept analysis. *Contemporary Nurse*, *53*, 217-234. https://doi.org/10.1080/10376178.2016.1260999

Virkstis, K., Herleth, A., & Langr, M. (2018). Cracks in the foundation of the care environment undermine nurse resilience. *The Journal of Nursing Administration*, *48*(12), 597-599. https://doi.org/10.1097/NNA.0000000000000687

Wagner, C. (2015). Moral distress as a contributor to nurse burnout. *American Journal of Nursing*, *115*(4), 11-11. https://doi.org/10.1097/01.NAJ.0000463005.73775.9e

Walker, B., Holling, C., Carpenter, S., & Kinzig, A. (2004). Resilience, adaptability and transformability in social-ecological systems. *Ecology and Society*, *9*(2). https://doi.org/10.5751/ES-00650-090205

Walker, L. O., & Avant, K. C. (1995). *Strategies for theory construction in nursing* (3rd ed.). Appleton & Lange.

Walker, L. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing* (5th ed.). Prentice Hall.

Wang, L., Tao, H., Bowers, B. J., Brown, R., & Zhang, Y. (2017). Influence of social support and self-efficacy on resilience of early career registered nurses. *Western Journal of Nursing Research*, 193945916685712. https://doi.org/10.1177/0193945916685712

Wang, T. (2004). Concept analysis of functional status. *International Journal of Nursing Studies*, *41*(4), 457-462. https://doi.org/10.1016/j.ijnurstu.2003.09.004

Wanzer, M., Booth-Butterfield, M., & Booth-Butterfield, S. (2005). "If we didn't use humor, we'd cry": Humorous coping communication in health care settings. *Journal of Health Communication*, *10*(2), 105 - 125.

Wei, W., & Taormina, R. J. (2014). A new multidimensional measure of personal resilience and its use: Chinese nurse resilience, organizational socialization and career success. *Nursing Inquiry*, *21*(4), 346-357. https://doi.org/10.1111/nin.12067

Wells, R. D., & Schwebel, A. I. (1987). Chronically ill children and their mothers: Predictors of resilience and vulnerability to hospitalization and surgical stress. *Journal of Developmental and Behavioral Pediatrics*, *18*, 83-89.

Werner, E. E. (1982). *Vulnerable, but invincible : A longitudinal study of resilient children and youth*. New York : McGraw-Hill.

Werner, E. E., & Smith, R. S. (1982). *Vulnerable, but invincible : A longitudinal study of resilient children and youth*. McGraw-Hill.

Williams, C. (2013). The glass escalator, revisited: Gender inequality in neoliberal times. *Gender and Society*, *27*(5), 609-629. https://doi.org/10.1177/0891243213490232

Williams, J., Hadjistavropoulos, T., Ghandehari, O. O., Malloy, D. C., Hunter, P. V., & Martin, R. R. (2016). Resilience and organisational empowerment among long-term care nurses: Effects on patient care and absenteeism. *Journal of Nursing Management*, *24*(3), 300-308. https://doi.org/10.1111/jonm.12311

Wilson, J. (1963). *Thinking with concepts*. Cambridge University Press.

World Health Organisation. (2013).

Youssef, C. M., & Luthans, F. (2007). Positive organizational behavior in the workplace. *Journal of Management*, *33*(5), 774-800. https://doi.org/10.1177/0149206307305562

Zander, M., Hutton, A., & King, L. (2013). Exploring resilience in pediatric oncology nursing staff. *Collegian*, *20*, 17-25. https://doi.org/10.1016/j.colegn.2012.02.002

Zheng, Z., Gangaram, P., Xie, H., Chua, S., Ong, S. B. C., & Koh, S. E. (2017). Job satisfaction and resilience in psychiatric nurses: A study at the Institute of Mental Health, Singapore.

International Journal of Mental Health Nursing, *26*(6), 612-619. https://doi.org/10.1111/inm.12286

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. American Psychological Association.

2.4 Supplementary Material to the Publication

Table 2. Literature utilised in the concept analysis

Authors	Country	Design	Antecedents	Defining Attributes	Empirical Referents	Consequences
Tusaie & Dyer. (2004)	USA	Historical review	Significant stress or adversity	Optimism, intelligence, humour, social skills, wide range of coping strategies, perceived social support	N/A	Bouncing back, cope successfully
Ablett et al. (2007)	UK	Qualitative	Workplace stress	High degree of commitment, sense of purpose, hardiness, sense of coherence, spirituality, work-life balance, collegial support, good social networks	Interviews	Job satisfaction, maintenance of well-being, staff retention, quality patient care
Gillespie et al. (2007)	Australia	Quantitative	Adversity, workplace stress	Hope, self-efficacy, coping, control and competence	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Retention of nurses
Jackson et al. (2007)	Australia	Literature review	Adversity	Positive and nurturing professional relationships, maintaining positivity, emotional insight, life balance and spirituality, reflection	N/A	Reduced vulnerability to workplace adversity, maintenance of normal functioning, retain nurses

Gillespie et al. (2009)	Australia	Quantitative	Workplace stress, adversity	Experience (more experienced nurses had higher resilience levels)	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Ability to adapt or cope
Glass. (2009)	Australia, New Zealand, UK & USA	Qualitative	Adversity	Hope, optimism, being realistic, flexibility, adaptability, critical reflection, emotional intelligence, self-care, social support, work-life balance	Participant observation, semi-structured conversational interviews art-based reflections and written reflections	Intrapersonal strength, personal growth, job satisfaction, effective workplace practices, delivery of quality healthcare
McAllister & McKinnon. (2009)	Australia	Literature review	Adversity	Internal locus of control, pro-social behaviour, empathy, positive self-image, optimism and the ability to organise daily responsibilities	N/A	Development of coping skills, thrive in busy dynamic workplaces
Cameron & Brownie (2010)	Australia	Qualitative	Adversity	Collegial support, debriefing, work-life balance, self-care, a sense of purpose, humour, optimism and positive thinking, strong social support network, spiritual practice, confidence, personal satisfaction and pride	Interviews	Competent, skilful holistic care. Retention of workforce.

Grafton et al. (2010)	Australia	Literature review	Stress, adversity	Holistic self-care practices, spiritual well-being	N/A	Enables nurses to better manage responses to stress, recover from or prevent depletion of self and reduce vulnerability to the impact of future stress
Matos et al. (2010)	USA	Quantitative	Adversity	Positive professional status, effective interpersonal relationships, communication	The Resilience Scale (Wagnild & Young, 1993)	Job satisfaction, protection against negative outcomes
Koen et al. (2011)	South Africa	Quantitative	Workplace adversity	High levels of hope, optimism, coping self-efficacy, sense of coherence and flourishing mental health	The Resilience Scale (Wagnild & Young, 1993)	Overcome adversity
Kornhaber & Wilson. (2011)	Australia	Qualitative	Adversity	Hardiness, emotional toughness, developing coping mechanisms, work-life balance, emotional detachment, natural selection (an innate ability), nursing and multidisciplinary team support, pragmatism, determination, perseverance, self-efficacy	Interviews	Retain nurses, transcend adversity, personal growth, sustain nurses through difficult and challenging working environments, improved outcomes for nurses and patients

Dolan et al. (2012)	Australia	Mixed methods	Adversity, stress	Sense of purpose, sense of achievement, self-reliance, enjoyment in work, not working shifts, emotional distancing	The Resilience Scale (Wagnild & Young, 1993)	Protection from negative consequences such as burnout, ability to care
Manzano Garcia & Calvo (2012)	Spain	Quantitative	Adversity	Self-awareness, realistic expectations, positive emotions	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Protection from emotional exhaustion and burnout, staff retention
McDonald et al. (2012)	Australia	Qualitative	Adversity	Peer support, reflection, hardiness, positive outlook, emotional intelligence, intellectual flexibility, creative and critical thinking, work-life balance, spirituality	Post intervention interviews, workshop evaluations, field notes and research journals	Positive supportive relationships and networks, increased confidence, increased awareness, well-being in the workplace and other spheres, assertive communication and conflict resolution
Mealer et al. (2012a)	USA	Quantitative	Adversity	Social support, engaging in relationships, safe workplace, higher general life satisfaction, engaging in fun and leisure activities	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Lower prevalence of post-traumatic stress disorder and burnout
Mealer et al. (2012b)	USA	Qualitative	Extreme stressors	Spirituality, supportive social network, optimism, having a resilient role model, acceptance that	Telephone interviews with highly resilient nurses and	Ability to continue to work successfully in stressful ICU environment,

				death is part of life, acceptance patient outcome cannot be controlled, humour, emotional intelligence, positive reframing, critical reflection, viewing trauma as a learning and/or growing experience, engaging in exercise, rituals	nurses with PTSD	prevent the development of PTSD,
Pipe et al. (2012)	USA	Mixed Methods	Stress	Positive approach, optimism, positive coping skills	The Personal and Organisational Quality Assessment – Revised (POQ-R)	Use of positive coping strategies, enhanced wellbeing, increased confidence, empowerment, improved physical health, staff retention
Shirey (2012)	USA	Discussion paper	Workplace change and adversity	Self-efficacy, hope, coping, confidence, hardiness, optimism, patience, tolerance, adaptability, a sense of humour, collegial support	N/A	Positive adaptation, cognitive transformation, personal control, personal growth in the wake of disruption, more readily accept change

Flarity et al. (2013)	USA	Quantitative	Adverse circumstances	Self-regulation, intentionality, self-validation, connection and support, self-care and revitalisation	N/A	Ability to bounce back or thrive.
Foureur et al. (2013)	Australia	Mixed methods	Stress	Mindfulness	N/A	Increased health, decreased depression, anxiety and stress, increased sense of coherence
Lowe (2013)	USA	Literature review	Adversity	Supportive social networks, optimism, having a resilient role model, spirituality, self-efficacy, a sense of humour, hope, adaptability/flexibility, caring and healthy work environment, self-care	N/A	Successful adaptation, protection against negative psychological outcomes, enhanced job satisfaction, decline in nurse turnover rates, ability to provide compassionate, caring and excellent care to patients
McAllister (2013)	Australia	Discussion paper	Adversity	Internal locus of control, staying calm, sense of humour, optimism, ability to transcend, connectedness to	N/A	Positive adaptation, may improve patient outcomes and build a stronger profession

				social/cultural/physical environment, has a repertoire of coping mechanisms, generativity		
McDonald et al. (2013)	Australia	Qualitative	Workplace adversity, disruption, change	Self-care, self-confidence, self-awareness, creativity, flexibility, hardiness, hope, resourcefulness, optimism, emotional insight, emotional intelligence, positive outlook	Interviews	Increased assertiveness at work, more supportive communication, closer group dynamic, increased collaborative capitol, empowerment, increased job satisfaction, increased retention
Zander & Hutton (2013)	Australia	Qualitative	Stress, negative situations, adversity, loss, hardship	Experience personal and professional, realistic view, self-care, personal rituals, emotional management and expression, talking, problem solving, effective support, insight, reflection, positive attitude	Interviews	Developing from past experiences, ability to overcome negative situations, use knowledge and adapt to new situations
Hart et al. (2014)	USA	Integrative review	Adversity	Hardiness, self-efficacy, hope, optimism, collegial support, humour, positive thinking, engaging in extracurricular activities,	N/A	Staff retention, ability to overcome challenge obstacles, increased quality of life, better health, effective use of

				positive organisational culture in the workplace		adaptive coping strategies
Mealer et al. (2014)	USA	Mixed methods	Trauma, stress	Positive support systems, optimism, faith, cognitive flexibility and self-care	Connor-Davidson Resilience Scale (Connor & Davidson, 2003), written exposure sessions	Mitigating the development of common maladaptive psychological symptoms
Wei & Taormina. (2014)	China	Quantitative	Stressors, adversity	Determination, endurance, adaptability, recuperbility, conscientiousness, work-life balance, higher educational levels, good financial resources (income), physical wellness, Chinese values, future orientation	Authors newly created resilience measure	Career success
Cline. (2015)	USA	Discussion paper	Adversity, stress	Being realistic, self-acceptance, hardiness, courage, collegial support, continued learning, willingness to fail, optimism, positivity, emotional intelligence, self-care, work-life balance	N/A	Longevity, success, enhanced collegial relationships and leadership capabilities, protect emotional and physical health, reduced absenteeism, increased job satisfaction, improved nurse retention, patient

						safety and quality outcomes
Dyess et al. (2015)	USA	Qualitative	Adversity	Self-care, fostering relationships, work-life balance, reflection, accountability, finding meaning and learning in all situations	Interviews	Staff retention, positive adaptation to change
Gillman et al. (2015)	Australia	Systematic review	Stressors	Work-life balance, self-awareness, self-esteem, realistic expectations, optimism, humour, support	N/A	Ability to thrive, coping, job satisfaction
Hegney et al. (2015)	Australia	Quantitative	High level stressors, adversity	Mindfulness, self-efficacy, adaptive coping behaviours	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Improved compassion satisfaction
Itzhaki et al. (2015)	Israel	Quantitative	Stress, workplace violence	Group resilience, collegial support	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Higher staff resilience associated with increased life satisfaction
Kim et al. (2015)	Korea	Qualitative	Adversity	Work-life balance, positive thinking, flexibility, assuming responsibility, self-esteem, family support	Interviews	Positive coping
Leverence. (2015)	USA	Brief discussion paper	Adversity, stressors	Optimism, mindfulness, social support, spiritual practices, realistic	N/A	Reduce burnout, prevent compassion

				outlook, self-care, mentorship, self-reflection, humour		fatigue, improved patient care
Rushton et al. (2015)	USA	Quantitative	Stress	Hope, self-efficacy and coping, external activities such as developing problem-solving skills or engaging in work, prayer, exercise, play, or art	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Protection from emotional exhaustion and increased personal accomplishment, reduced stress
Shimoinaba et al. (2015)	Japan	Qualitative	Negative situations or adversity	Self-nurturing, self-awareness, accepting professional limitations, validating care (receiving feedback), coping adaptively, support from others	Face to face in-depth interviews	High quality care for patients and families, a sense of mastery, effective coping skills
Turner & Kaylor. (2015)	USA	Conceptual framework	Adversity, stressors	Social support, positive professional relationships, work-life balance, reflection, emotional control, exercise, humour, spirituality, self-care	N/A	Overcome adversity, embrace change, maintenance of health/well-being
Brown et al. (2016)	Australia	Systematic review	Acute or chronic threats to personal wellbeing, stressors, adversity	Passion for work, engaging in professional development, maintaining a work-life balance, good social supports	N/A	Enable a sustainable workforce, sense of empowerment, cope better with work stressors, achieve optimal patient outcomes
Cope et al. (2016a)	Australia	Qualitative	Adversity, negative effects of workforce	Self-control, self-efficacy, optimism, hope, leadership, valuing social	Field notes, memos, gesture	Positive adaptation, ability to cope, maintenance of

			challenge and stress	support, humour, emotional endurance, positive attitudes, self-set goals, self-motivation, perseverance	drawings and interviews	normal function, resist and absorb the impact of events, remain working, perform care, advocate, teach
Cope et al. (2016b)	Australia	Qualitative	Adversity	Self-control, self-care, emotional intelligence, staying positive, reflection, hope, humour, valuing social support, paying it forward (undertaking acts of kindness), passion for the profession, taking on challenges, pride, perseverance, experiencing adversity and growing through it, good leadership	Interviews	Positive change and adaptation, perform effectively, retain nurses, protect nurses
Cope et al. (2016c)	Australia	Qualitative	Workplace adversity	Self-control, self-care, reflection, hope, humour, positivity, work-life balance, strong social networks (family, friends & colleagues), professional pride, sense of purpose, enjoyment in taking on a challenge, optimism	Interviews	Ability to survive and thrive, positive adjustment, sustain wellbeing, job satisfaction, staff retention, improved patient safety outcomes
Craigie et al. (2016)	Australia	Quantitative	Stress, adversity,	Self-efficacy, positive coping	Connor-Davidson	Adaptive coping to stress

			trauma, tragedy, threats		Resilience Scale (Connor & Davidson, 2003)	
Cusack et al. (2016)	Australia, Brazil, China	Theoretical model	Adversity	Self-efficacy, coping, mindfulness	N/A	Staff retention, quality patient care, reduction of burnout, compassion fatigue and workplace distress
Hsieh et al. (2016)	Taiwan	Quantitative	Workplace violence, traumatic events, adversity	Extraversion, peer support, work-life balance	The Resilience Scale for Adults (Friborg et al., 2003)	Maintenance of equilibrium, positive coping
Hudgins. (2016)	USA	Quantitative	Adversity	Optimism, self-confidence, work and personal support networks, empowerment, spirituality/sense of purpose, self-awareness	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Increased job satisfaction, retention
Kutluturkan et al. (2016)	Turkey	Quantitative	Stressors	Having children, higher educational level, social support resources, age (older)	The Resilience Scale for Adults (Friborg et al., 2003)	Increased personal accomplishments, prevent burnout and emotional exhaustion
Lim et al. (2016)	Singapore	Quantitative	Adversity, change or risk	Self-efficacy, communication skills	The Resilience Scale (Wagnild & Young, 1993)	Reduction in stress, improve patient care
McDonald et al. (2016)	Australia	Qualitative	Workplace adversity	Collegial support, support from family and friends,	Interviews	Job satisfaction, feelings of

				self-care, self-motivation, autonomy, optimism, self-efficacy, confidence		competence, improve patient care, reduced stress, potential career advantage
Tubbert. (2016)	USA	Qualitative	Stress, adversity	Flexible and creative thinking, decisiveness, tenacity, interpersonal connectedness (social supports), honesty, self-control, optimism	Interviews	Ability to cope with stress, engaged workforce, increased job satisfaction
Williams et al. (2016)	Canada	Quantitative	Adverse events, stress	Self-efficacy, hope, coping, competency, hardiness	The Resilience Scale for Adults (Friborg et al., 2003)	Better quality of care, increased respect for patients
Brennan. (2017)	UK	Discussion paper	Adversity	Self-confidence, resourcefulness, curiosity, self-discipline, level-headedness, flexibility, problem solving ability, emotional stamina, intelligence and a strong sense of self	N/A	Positive adaptation and coping, assists nurses to deliver high-quality care and succeed professionally
Delgado et al. (2017)	Australia	Integrative review	Challenging circumstances or adversity	Optimism, sense of purpose, faith/belief, sense of self, empathy, insight, self-care, hope, self-efficacy, adaptability, emotional intelligence	N/A	Reduction in workplace stress, prevent negative, psychosocial outcomes, increased wellbeing
Gao et al. (2017)	China	Quantitative	Adversity, trauma	Social support, confidence	Connor-Davidson Resilience Scale (Connor &	Reduction in negative psychological outcomes, higher

					Davidson, 2003)	general well-being, positive adaptation
Guo et al. (2017)	China	Quantitative	Workplace adversity	Self-efficacy, education, positive coping style, lifestyle i.e. cigarette use and exercise (non-smokers had higher resilience levels, those who exercised had higher resilience)	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Positive adaptation, increased job satisfaction
Hsieh et al (2017)	Taiwan	Quantitative	Adversity	Higher level of education, seniority, extraversion, family support, peer support	The Resilience Scale for Adults (Friborg et al., 2003)	Ability to deal with violent events, improve safety and sense of well-being
Lanz et al. (2017)	USA	Quantitative	Adversity	Positive emotions, emotional control	The Resilience Scale (Wagnild & Young, 1993)	Ability to bounce back after experiencing conflict in the workplace, reduction in negative effects of social stressors
Marie et al. (2017)	Palestine	Qualitative	Adversity	Facing challenges, being steadfast, commitment, religion, love for the profession, supportive relationships (family, friends), supportive managers and colleagues, education, sense of purpose, experience, tenacity, self-confidence	Interviews and observational data	Successful coping skills
Mealer et al. (2017)	USA	Quantitative	Adversity	Optimism, humour, engaging the support of	Connor-Davidson	Reduced risk of PTSD

				others, personal competence, leadership, perseverance	Resilience Scale (Connor & Davidson, 2003)	
Prosser et al. (2017)	Canada	Qualitative	Adversity	Having a vast perspective, having realistic expectations, expert of self (self-nurturance and self-awareness), clarity in belief systems, being present through staying awake	Face to face semi-structured interviews	Ability to thrive and provide care
Wang et al. (2017)	China	Quantitative	Adversity, stress, trauma, threat, deprivation	Friend and co-worker support, self-efficacy, positive work climate, tenacity, strength, optimism	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Reduce turnover
Zheng et al. (2017)	Singapore	Quantitative	Workplace stress	Age (older), experience (more years), higher education levels, religion, work-life balance	The Resilience Scale (Wagnild & Young, 1993)	Increased job satisfaction, staff retention, adaptive behaviour
Ang et al. (2018)	Singapore	Quantitative	Adversity	Being married or having been married in the past, older age, more years of experience, higher educational levels, self-efficacy	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Retention of nurses
Brown et al. (2018)		Literature Review	Adversity	Optimism, self-efficacy, hope, flexibility	N/A	Reduction in negative psychological outcomes

Foster et al. (2018)	Australia	Qualitative	Adversity, workplace stressors	Peer support, organisational support, education, reflection	Focus groups and interviews	Reduction on negative psychological outcomes, improved patient care, increased job satisfaction, increased self-esteem
Foster et al. (2018)	Australia	Quantitative	Adversity, stressors	Education, good relationships, interpersonal and communication skills	Workplace Resilience Inventory (McLarnon & Rothstein, 2013)	Reduction in negative psychological outcomes, increased well-being
Slatyer et al. (2018)	Australia	Qualitative	Adversity, trauma, tragedy, threats or significant sources of stress	Mindfulness, self-care	Interviews	Staff retention, reduction in negative psychological outcomes
Slatyer et al. (2018)	Australia	Quantitative	Adversity, trauma, tragedy, threats or significant sources of stress	Mindfulness, self-care, social support	Connor-Davidson Resilience Scale (Connor & Davidson, 2003)	Reduced burnout and depressed mood, improved compassion satisfaction and quality of life
Babanataj et al. (2019)	Iran	Quantitative	Adversity, difficulties and hardships of life and occupation	Education and training, internal and external supports		Positive adaptation, personal promotion and growth, reduction in occupational stress