Team Resilience: A Scoping Review of Conceptual and Empirical Work

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Abstract

The purpose of this scoping review was to examine the literature on team resilience to gain insight into current thinking regarding its definition and conceptualisation, and to identify how researchers have operationalised and measured this concept. We conducted a systematic scoping review using the following 5-phase approach proposed by Arksey and O'Malley (2005): identifying the research question, identifying potentially relevant studies, study filtering and selection, charting the data, and collating, summarising and reporting the results. A total of seven databases were searched, followed by a citation search of eligible papers via Google Scholar. Of the 275 articles identified via the search process, 27 papers were deemed eligible for review. Several key findings regarding the literature on team resilience were observed: (i) definitions varied in terms of content (e.g., input or process), breadth (e.g., unidimensional versus multidimensional), and quality (e.g., essential and necessary attributes of key components); (ii) there was a predominance of single-level conceptualisations of team resilience; and (iii) there has been a reliance on cross-sectional research designs in empirical studies, which is incongruent with the dynamic nature of this concept. Key recommendations from the findings of this scoping review include: the need to advance the definitional quality of team resilience, the need to develop an overarching theoretical framework to integrate existing research with future work, and the use of methodological approaches that are commensurate with the multilevel, dynamic nature of team resilience.

Keywords: coordination; emergence; emergent construct; multilevel theory; teamwork

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Adversity is inherent within most – if not all – occupational contexts in which the performance of individuals and teams is crucial for organisational effectiveness. Adversity encompasses major assaults that can impede human functioning, which can be acute (e.g., equipment malfunction) or chronic (e.g., workplace bullying) in nature (Bonanno, 2004). With its central focus on what enables people to resist, bounce back, or recover from adverse events that threaten their functioning, viability, or development (Masten, 2014), it is unsurprising that the concept of resilience has garnered a substantial and rich body of work over the past 40 years. The majority of this past work has focused on resilience among individuals (e.g., Kossek & Perrigino, 2016; Pangallo, Zibrarras, Lewis & Flaxman, 2015). Yet in most occupational (e.g., workplace) or achievement settings (e.g., sport, education), individuals complete tasks within teams of two or more individuals who work interdependently for a specified timeframe to achieve a common and valued outcome or objective (Sundstrom, de Meuse, & Futrell, 1990). To this end, goal achievement is dependent on the capacity of individual team members as a collective to resist, bounce back, or recover from adversity. Therefore, the notion that collective functioning is optimal within complex, dynamic, and uncertain environments when teams are resilient has intuitive and practical appeal. However, the concept of team resilience has received much less scholarly attention than the rich literature on individual resilience. In what follows, we first provide a brief review of resilience research focusing on the various waves of scientific work that have emerged over the past 40 years. We then overview key work on team resilience to shed light on the rationale and need for the current study.

Resilience: A Brief Historical Overview

The scientific study of resilience dates back to the 1970s when scholars sought to understand the development and prevention of psychopathology among individuals at high

risk due to a range of adverse events and issues such as poverty, trauma or disaster (e.g.,

Garmezy, 1985; Rutter, 1979). Of particular interest in this first wave of research were

definitional, conceptual, and measurement issues (Masten, 2007). Given the lifetime

prevalence of adverse events among most people (Bonanno, 2004), and the potentially

maladaptive psychological and physiological outcomes of these experiences (McVicar,

2003), the notion of adversity was common to all definitions and conceptualisations of

resilience. Defined as "disturbances to the function or viability of a system" (Wright, Masten,

& Narayan, 2013, p. 17), where a system can range from cellular level to societal or cultural

levels, adverse events have been categorised broadly into either acute (e.g., natural disaster)

or chronic (e.g., workplace bullying) forms to capture the temporal component of the

adversity experience (Cosco, Kaushal, Hardy, Richards, Kuh, & Stafford, 2017). Researchers

observed the effects of adversity to vary across individuals; essentially, the outcomes of

adversity experiences could range from inconsequential to significant for their functioning,

and the enduring nature of maladaptive effects could be short-lived or long-lasting (Iverson et

al., 2007; Linley & Joseph, 2004; Van Kessel, 2013). Those individuals who displayed the

absence of maladaptive outcomes, or bounced back quickly after deteriorations in their

functioning, were subsequently classified as 'resilient' and ignited an interest in the concept.

Recent work has underscored the plausibility of nonlinear effects of adversity, in the form of

a U-shaped curves where some (moderate) exposure to adversity is better than little or no

exposure or very high levels of adversity exposure (for a review, see Seery & Quinton, 2016).

Other work also highlighted the potential for particular stressors types (i.e., challenge

stressors) to enhance resilience downstream (Crane & Searle, 2016). As such, this first wave

of research focused on identifying and understanding the individual, family, and

environmental characteristics to develop a concise yet relatively robust list of protective

resources (e.g., self-esteem; Masten, 2007), neurobiological dimensions (e.g., autonomic

reactivity; Murphy, 1962), and psychosocial factors (e.g., quality of relationships with caregivers; Gottesman, 1974) of resilient individuals (Masten, 2014). Ecological resilience was also being explored around this period, though independent of the work on understanding resilience at the individual level (Holling, 1973).

In the mid-1980s, the focus on protective factors broadened to explore those aspects 'external' to the individual resulting in the formation of three areas of protective factors, namely; attributes of the individual (as studied in the first wave of research), aspects of their families, and characteristics of the broader social environment (Masten & Garmezy 1985; Rutter, 1985). This descriptive assessment of protective factors paved the way for the exploration of processes underpinning resilience development, thereby signifying the emergence of a second wave of resilience research. In this wave of research, the focus shifted from the examination of 'what' resilience is, towards understanding the process of 'how' resilience develops within individuals. Of particular relevance was the salience of social, temporal, contextual and cultural factors identified as shaping this development, and thus the complex nature of resilience was established (Masten, 2013).

The third wave of inquiry, originating around the late-1990's onwards, encompassed the exploration of a range of multifaceted interventions to build individual resilience in order to prevent or ameliorate the maladaptive outcomes associated with experiences of adversity (for reviews, see Leppin et al., 2014; Macedo et al., 2014). A key focus within this wave of research was to test mechanisms and outcome variables of resilience hypothesised within earlier waves. For example, Forgatch and Degarmo (1999) evaluated the effectiveness of a parental training program consisting of child behaviour management techniques (e.g., non-coercive discipline, contingent encouragement) and personal skills (e.g., emotion regulation) on resilience within young children. In contrast, Hawkins, Catalano, Kosterman, Abbott, and Hill (1999) approached the development of resilience within this same demographic through

a school-based intervention. This school-based approach comprised teacher training (i.e., fostering proactive class management, interactive teaching and cooperative learning), with children and parents receiving training to develop social skills and prosocial behaviour reinforcement skills respectively.

The fourth and most recent wave expanded the study of individual resilience to take into account cross-level interactions among developmental systems such as biological, neurological, and social ecological (Masten, 2014; Masten & Cicchetti, 2016). For example, researchers have examined the roles of genetic structure (Meaney, 2010) and neural function (Karatoreos & McEwen, 2013) within multilevel models of resilience. One important consequence of this fourth wave has been a progression in the definition of resilience. Early definitions focused primarily on coping with adverse events. Contemporary work, however, aligns with the prevailing acceptance of systems theory within developmental science (Zelazo, 2013), such that there is general agreement among researchers of resilience as the "capacity of a dynamic system to adapt successfully to disturbances that threaten its function, viability, or development" (Masten, 2014, p. 10). Thus, the capacity of a system to adapt is typically inferred from salient indicators within and across each of the multiple levels of analysis for that system (e.g., biological, psychological). Also inherent within a systems conceptualisation is the interdependence among individuals, the ecological context within which they operate (i.e., environment, time, culture), and other levels of analysis (e.g., from genes to sociocultural context) (Bronfenbrenner, 1979; Wright et al., 2013). For example, resilience within the dynamic system of a young child could be seen to be a context-specific capacity emerging from the interaction of past experience, socio-psychological resources, and genetic make-up. A further strength of the systems definition is that it can be generalised across different systems or levels within a specific system. With regard to humans, for example, one can hone in on resilience within specific systems (e.g., immune, cardiovascular)

or the person as a whole (e.g., resilience in response to failing an important educational test). The integration of two or more humans extends to the resilience of dyads (Thompson & Ravlin, 2016), families (Walsh, 2016), and communities (Berkes & Ross, 2012). Finally, a systems perspective of resilience provides relevance for non-human systems such as ecosystems, economics, and animals (Angelini et al., 2016; Ellsworth, Wrobleski, Kauffman, Reis, 2016; Kim & Marcouiller, 2015).

From Individual to Team Resilience

Teams have been defined as "interdependent collections of individuals who share responsibility for specified outcomes" (Sundstrom, De Meuse, & Futrell, 1990, p. 120). The pervasiveness of team systems within occupational settings reflects the importance of optimising such collaborative and interdependent groupings of individuals. Functional interactions between interdependent personnel can provide a critical enhancement over the capabilities of individuals when performing within complex and dynamic environments. For example, the demands associated with preparing for and responding to natural (e.g., floods) and technological (e.g., traffic accidents) disasters necessitates the prevalence of highly proficient disaster management teams (e.g., firefighters, police, medics) to protect wider society (Phillips, 2015). Teams are also essential in contexts where a range of skill-sets are necessary for the execution of complex procedures (e.g., surgical operations within medical settings; Dobbins et al., 2016).

Coupled with this potential for enhanced performance capabilities is the paradoxical awareness that dysfunctional team processes may contribute to decrements in organisational outcomes (e.g., increases in patient harm events within the medical industry; Hughes et al., 2016). With this recognition in mind, certain industries are predisposed to encountering potential external disruptions to such functioning. Teams within the armed forces, for example, are often susceptible to unanticipated attacks from enemy forces when conducting

military operations (Shuffler, Pavlas, & Salas, 2012), whereas aircrew teams on a flight deck

may experience malfunctions in computer equipment or severe weather conditions that place

extreme demands on their performance (Kanki, 1996). Growing economic, professional and

practical demands upon such teams across occupational settings (McCray, Palmer, & Chmiel,

2016), as well as an increasing commonality of shared accountability between group

members (Hudson, 2007), illustrates the need for a team to be able to recognise and adapt

collaboratively to emerging adversities. The ability to do so presents potentially unique

opportunities to gain both a performance advantage within certain contexts (e.g., military,

business) and, equally, prevent disastrous outcomes within others (e.g., medicine, aviation).

Research on teams has flourished over the past three decades (for reviews, see

Kozlowski, Grand, Baard, & Pearce, 2015; Maloney, Bresman, Zellmer-Bruhn, & Beaver,

2016; Mathieu, Hollenbeck, van Knippenberg, & Illgen, 2017). This work has substantially

enhanced understanding of team-level constructs such as coordination and dynamics

(Gorman, 2014), cognition (Grand, Braun, Kuljanin, Kozlowski, & Chao, 2016), and

adaptation (Maynard, Kennedy, Sommer, 2015), just to name a few. However, in contrast to

this body of work on related constructs, research on team resilience is still in its infancy, with

systematic efforts to investigate and understand this construct produced only in the past

decade (e.g., Alliger, Cerasoli, Tannenbaum, & Vessey, 2015; Blatt, 2009; Edson, 2012).

Building on this emerging body of work, this paper offers several important contributions to

the literature on team resilience. Firstly, there has been no attempt to date to systematically

scope the body of peer-reviewed research on team resilience with the view to uncover what is

currently known about team resilience and how researchers have studied this concept.

Secondly, as existing reviews or perspectives of team resilience have focussed upon a

specific context including sport (Galli, 2016; Morgan et al., 2017), organisations (Flint-

Taylor & Cooper, 2017, Rogriguez-Sanchez & Perea, 2015), and the armed forces,

emergency services, and first responders (Zaccaro, Weiss, Hilton, & Jeffries, 2011), there is a need to scope the literature across all occupational settings. Finally, we focus on both conceptual *and* methodological characteristics of past work, thereby shedding light on how researchers have operationalised team resilience through measurement and intervention.

Aims of This Study

Against this backdrop of past work on resilience, the overarching aim of this study is to review published work on team resilience to synthesise what is currently known about this concept. Given the broad nature of this study objective, we adopted a scoping review methodology. Scoping reviews are used to assess the extent, range and nature of research on a given topic; they differ from a systematic review or meta-analysis in that the question is much broader and is therefore useful for developing conceptual clarity and/or identifying gaps in knowledge (Arksey & O'Malley, 2005). A scoping review was preferred for the purposes of the present study because systematic reviews and meta-analyses require much greater clarity about a concept than currently exists with respect to team resilience. The systematic approach to the identification of relevant articles, and analysis of retrieved studies with regard to the aims of a study provides an important distinction between narrative and scoping reviews (Levac, Colquhon & O'Brien, 2010), and as mentioned previously, provides an important extension upon past reviews of the literature. In this case, a scoping review is timely because there is a need to consider the scope and nature of research and theory on team resilience, with the view to summarise commonalities and discrepancies in substantive and methodological issues. Enriching our understanding of current approaches to conceptualising and operationalising team resilience will shed light on strengths and weaknesses of such work and highlight unique or unchartered avenues that may help shape the next frontier of the science of team resilience.

Methods

This scoping review adhered to the 5-step approach proposed by Arksey and O'Malley (2005) and incorporated the enhancements to scoping reviews recommended by Levac et al. (2010), such as selecting team members with expertise in team resilience and related concepts, systematic reviews, and the inclusion of diverse research methodologies.

Stage 1: Identifying the Research Question

Consistent with the broad nature of scoping reviews (Arksey & O'Malley, 2005), we aimed to map the peer-reviewed literature on team resilience, with a particular focus on (i) definitional, (ii) theoretical, and (iii) methodological factors, to inform an understanding of the extent, range, and nature of research on this concept. The focus on peer-reviewed literature was deemed necessary as research areas within the early stages of development are often driven by such work. Although imperfect in some respects, the peer-review process maximises the scientific community's confidence in the quality and credibility of work that has been subjected to scrutiny by academic peers (Bornmann, 2011; Brustad, 1999). Within the context of this overarching research focus, we honed our mapping of the literature on (i) conceptual and (ii) methodological factors to inform an understanding of the extent, range and nature of research on team resilience.

Stage 2: Identifying Relevant Studies

Search procedure. DG performed an electronic search on January 4th 2017 of papers published anytime up until December 31st 2016 using seven databases: (i) Web of Science (core collection), (ii) Scopus, (iii) Embase, (iv) Medline, (R), (v) PsycInfo, (vi) CINHAL Plus, and (vii) Business Source Complete. Search filters were chosen based on common terminology identified in published literature known to the authors: (i) "team resilien*" OR (ii) "resilient team*". Depending on the features of each database, we applied these terms to search topics, abstracts, titles, and/or full texts (see online supplementary file for full details of the search process). We also conducted a citation search of papers that were deemed

eligible for data extraction (see processes detailed in Stage 3) using Google Scholar to

maximise the reach of our search (e.g., to capture papers that were 'in press').

Inclusion and exclusion criteria. We considered papers for inclusion if they were

written in English, published in a peer-reviewed outlet, and aimed to explore (e.g., conceptual

analysis) and/or directly assessed team resilience (e.g., surveys, interviews). Papers were

deemed ineligible if they were a conference abstract, book, thesis, book chapter, or popular

press article (e.g., magazine, newspaper); excluded humans as part of the team make-up (e.g.,

computer systems only); were written in languages other than English; and if the full text was

unavailable via our University library subscriptions.

Stage 3: Study Selection

Papers identified in Stage 2 as potentially relevant for this scoping review were

screened independently by two reviewers (DG and RL) using a two-step process. First, the

reviewers screened the titles and abstracts of studies using the inclusion and exclusion criteria

detailed in Stage 2. When it was unclear whether a study was eligible for inclusion based on

the information presented in the title or abstract, the paper was retained for further analysis.

Second, the assessors screened full texts of papers that passed the initial review using the

inclusion and exclusion criteria detailed in Stage 2. Disagreements ($N = 5$) were clarified

through discussion of the rationale for each analysts' choice to include or exclude an article.

Stage 4: Charting the Data

We created an electronic data form to extract key information (e.g., definition of team

resilience, research setting; see online supplementary material: http://bit.ly/2Ah1L5N) from

full-text records that passed the two-step screening process outlined in Stage 3 (see

supplementary material). To maximise reliable interpretation of key information, we

transposed raw data as described in the original record. DG and RL conducted the data

extraction process of all eligible papers independently; discrepancies ($N = 2$) were resolved to a consensus through discussion and re-examination of the raw data.

Stage 5: Collating, Summarising, and Reporting Results

We conducted an analysis of the methodological and conceptual features of extracted data. The methodological analysis focused on providing a descriptive account of the types of papers (e.g., conceptual, empirical with new data), occupational settings (e.g., crisis response, sport), geographical distribution, participant characteristics, and methodological features (e.g., design) of eligible studies. With regard to the conceptual analysis, we focused on examining common and unique themes among definitions of team resilience and their operationalisation, as well as primary research findings as they pertained to team resilience.

Results

Overview of Article Search, Retrieval Process and Retrieved Studies

A visual depiction of the full search process is provided in the online supplementary material (http://bit.ly/2Ah1L5N) In total, 275 papers were identified at the initial stage of the search process. After duplicates were removed ($n = 73$), screening of the titles and abstracts of 202 papers assessed against the inclusion and exclusion criteria excluded 164 papers. A total of 38 full-texts were assessed of which 21 were deemed ineligible against the exclusion criteria. Finally, we conducted a citation search on the 17 retained papers, which resulted in the identification of an additional 10 papers. Reasons for these additional papers escaping our initial search procedure included: (i) papers being 'in press' at the time of the search process ($n = 3$), (ii) authors using unique terms for the target concept within the title or abstract (e.g., resilience in entrepreneurial teams; Blatt, 2009; top management team condensed to TMT; Carmeli et al., 2013) ($n = 6$), and (iii) papers published within journals that were not indexed within the seven databases of our primary search ($n = 1$).

The 27 papers identified from the search process were published across an 8 year period (2009-2017), with a total of 81% ($n = 22$) being empirical in nature and the remaining 19% ($n = 5$) providing conceptual reviews of team resilience. With reference to the empirical or conceptual context, team resilience was examined within business ($n = 9$), education ($n = 4$), sport ($n = 3$), information technology ($n = 3$), natural and nuclear power industries ($n = 3$), military ($n = 2$), health and social care ($n = 1$), music ($n = 1$), and space exploration ($n = 1$) contexts. In terms of geographical location among the empirical work, studies were conducted across three continents, namely: North America (United States, $n = 7$), Europe (UK, $n = 3$; Netherlands, $n = 3$; Spain, $n = 2$; Belgium, $n = 1$; Norway, $n = 1$; Finland, $n = 1$; Portugal, $n = 1$) and Asia (Israel, $n = 2$; India, $n = 1$). The majority of empirical studies utilised cross-sectional surveys ($n = 9$, 41%), interventions designed to foster team resilience among participants ($n = 5$, 23%, of which 3 studies drew from the same intervention and produced multiple papers), and interview-based approaches ($n = 2$, 9%). Other designs included a longitudinal survey with two time points, archival analysis, case study, laboratory- and field-based experiments, and a mixed methods approach (i.e., interviews combined with archival data from manuals, websites, and published articles).

Conceptual Analysis

Defining team resilience. The definitions of team resilience among the included body of work are detailed in Table 1. An examination of the range of definitions adopted within the scope of studies indicates the absence of a widely accepted definition within the literature. The definition formulated by West et al. (2009) was the most prevalent among the included studies (19%, $n = 5$); they defined team resilience as "the capacity to bounce back from failure, setbacks, conflicts, or any other threat to well-being that they may experience" (p. 253). The second most prevalent (15%, $n = 4$) definition was that of Morgan and colleagues (2013), who defined team resilience as "a dynamic, psychosocial process which protects a

group of individuals from the potential negative effect of stressors they collectively

encounter. It comprises of processes whereby team members use their individual and

collective resources to positively adapt when experiencing adversity" (p. 552). Of the 27

studies included in the analysis, 9 (33%) papers excluded a formal definition of the concept.

Closer inspection of the definitions reveals several commonalities and unique features

of how scholars have defined team resilience. First, an examination of the specific attributes

within the 11 definitions reveals all but one (Edson, 2012) to encompass the presence of

stressors, setbacks, pressure, challenge or adversity. From this finding, we can see that there

is shared agreement that team resilience involves addressing disturbances of some sort.

Inherent within the majority of definitions was the notion that such disturbances can originate

from external or internal factors; however, the definition adopted by Glowinski et al. (2016)

explicitly acknowledges the external nature of these perturbations. Second, the majority of

definitions spoke to the nature of team functioning in the midst of such demands. Team

functioning was operationalised predominantly through references to the maintenance of

team performance, either explicitly or inferred through notions such as to 'overcome crisis',

'positively adapt', 'increase reliability' and display 'minimum decrement of team

performance'. The exact nature of such team performance remained unclear, with only one

definition specifically citing the ability to 'successfully perform particular tasks' (Amaral,

Fernandes & Varajao, 2015, p. 1184). Further inspection reveals alternate conceptualisations

including a more holistic perspective, such as well-being, longevity and thriving to be

indicative of team functioning (Amaral, et al., 2015; Kennedy, Landon & Maynard, 2016;

West et al., 2009). Third, inferences regarding the overarching nature of the concept within

these definitions predominantly suggest team resilience to be either an ability or capacity,

thus referencing the inputs into the system that exist prior to experiencing stress or adversity.

However, there were exceptions to this general finding; Kennedy et al. (2016) likened team

resilience to a shared belief, whereas Morgan et al. (2013) expressed the nature of team

resilience as a psychosocial process.

There were several unique findings within these definitions of team resilience. Only

one definition within these results made explicit reference to the temporal nature of team

resilience, albeit with minimal specificity as to the temporal boundaries. Van der Klij et al.,

(2011, p. 2158) defined team resilience as an "ability of teams to respond to sudden,

unanticipated demands for performance *quickly*". This unique definition speaks to a general

conceptual assumption within past work, that is, the temporal nature of team resilience is

conceptualised implicitly rather than explicitly in available definitions. Several examples of

this implicit recognition include the notion of 'bouncing back' inferring an immediate or

short-term return to optimal functioning, whereas 'recovery' and 'growth' were also cited,

inferring an extended or continued period until such a point is realised.

Quality assessment of definitions of team resilience. The criteria set out by

Podsakoff, Mackenzie, and Podsakoff (2016) for the development of high quality concept

definitions were used to assess the quality of the definitions included in this review, namely:

(i) identify the essential *property* or nature of the concept and the *entity* to which it applies;

(ii) detail the necessary (i.e., essential that all exemplars must possess) and sufficient (i.e.,

unique features of the exemplars) attributes; (iii) specify the dimensional properties (i.e.,

unidimensional or multidimensional); (iv) stipulate the robustness of the concept in terms of

temporal (i.e., stability over time) and contextual (i.e., generalises across situations, contexts,

cases, etc.) factors; and (v) delineate how the conceptual features of the construct differ from

related concepts, and if possible, provide an initial description of the nomological network

(e.g., antecedents, outcomes). An overview of our assessment of the definitions provided

within the retained studies against these criteria is detailed in Table 1. Below we provide a

narrative assessment of the two most commonly utilised definitions against these criteria.

Overall, none of the existing definitions completely satisfied all criteria for high quality

definitions, as proposed by Podsakoff et al. (2016).

The most commonly occurring conceptualisation of team resilience reported within

the studies identified in this scoping review, that of West et al. (2009), partially satisfies the

criteria for high-quality concept definition proposed by Podsakoff et al. (2016). Strengths of

this definition include the specification of the essential *property* or nature of the concept (i.e.,

"a capacity" or input into the system) and the *entity* to which it applies (i.e., "team"). There is

also reference to the essential attributes of team resilience within this definition, namely the

capacities that foster the ability of teams to either thrive, improvise, adapt or recover from

significant change or stress. However, this definition is silent on those attributes unique to

this concept within these contexts. Key limitations of this definition and conceptualisation of

team resilience include: (i) the absence of critical differentiation from similar concepts; (ii)

limited justification for the integration of team resilience within a nomological network of

related constructs, and the exclusion of others; (iii) absence of information regarding the

contextual stability of team resilience, though brief mention is made of the temporal

dimensions (i.e., "emerge …[sic] as teams develop"; West et al., 2009, p.262); and (iv) no

formal specification of the dimensionality of team resilience.

Morgan and colleagues' (2013) definition of team resilience represented an

advancement in terms of satisfying Podsakoff et al.'s (2016) definitional criteria. The

strengths of their definition include: (i) explicit reference to the essential property of team

resilience as a 'psychosocial process' and 'a group of individuals' as the entity to which it

applies; (ii) establishment of the concept as 'dynamic' in nature (i.e., temporally and

contextually specific); and (iii) the provision of four distinct dimensions (i.e., mastery

approaches, social capital, collective efficacy and group structure) that capture the

multidimensionality of the concept. However, there was ambiguity regarding why or how the

four essential attributes of group structure, mastery approaches, social capital, collective efficacy are unique to team resilience. In other words, as the four attributes are established concepts each backed by their own theory and research, it is unclear why these dimensions and not others coalesce to characterise team resilience. Two further weaknesses can also be found in this definition; first, the ambiguity as to the specific dynamics between team resilience and other concepts (e.g., team adaptation, collective efficacy) within the nomological network discussed (i.e., sub-dimensions of model); and second, the absence of critical differentiation of team resilience from these conceptually similar constructs.

Conceptual models of team resilience. Alliger et al. (2015) acknowledged three behavioural strategies to underpin a team's capacity to deal with pressure, stressors or difficult situations. *Minimising* actions were proactive in nature and said to involve processes of pre-empting challenges, contingency planning, and continual self-assessment of readiness. *Managing* actions were described as reflexive and included strategies to assess and address stressors within 'real-time' situations, whereas *mending* strategies included differing reflection strategies adopted to facilitate recovery and thus a reactive element of the model. Alliger and colleagues further proposed five markers of team resilience, namely: challenge resolution (i.e., addressing problems quickly and effectively), health (i.e., maintain function in a way that facilitates team spirit, and mood), resources (i.e., maintain social emotional resources during challenge resolution), recovery (i.e., ability to 'bounce back' to previous levels) and on-going viability (i.e., maintain ability to meet future challenges optimally).

Glowinksi et al. (2016) proposed a multidimensional model made up of four temporally defined features. These included *monitoring* ongoing situations and the existence of internal or external perturbations to team functioning; *responding* to variations in the levels of disturbances to functioning; *learning* from experiences of perturbations to functioning; and *anticipating* changes and demands within future situations. Combinations of

the magnitude of perturbations, and levels of cognitive efforts (i.e., automaticity) and team coordination (i.e., individual or team centred) were proposed to predict collectively whether or not a team was enacting either of the four features and consequently its level of team resilience.

Kennedy et al. (2016) conceptualised team resilience as an emergent state rather than a capacity or ability of a team, identifying temporal dynamics in the form of team life-cycle as a key factor. Represented across cognitive, motivational, and affective states, Kennedy and colleagues highlighted the importance of a multilevel perspective, emphasising the need to consider the nature of triggers (i.e., team- or task-based) and adaptive outcomes (i.e., maintenance, meritorious or maladaptive) of team resilience. Finally, they noted team resilience to be distinct from, but a demonstration of, team adaptability and to potentially hold a reciprocal relation with this concept.

Within their review, Rodrigues-Sanchez and Perea (2015) adopted a multidimensional perspective of team resilience highlighting it as a capacity that is malleable in nature. Adopting a psycho-behavioural perspective, key determinants of team resilience encompassed collective efficacy, transformational leadership, teamwork at the team level, and organisational practices at the organisational level. Lawrence and Maitlis (2012) proposed three sets of beliefs engendered within caring narrative practices to underpin the development of a team resilience capacity. *Potency* or a collective belief arising from positive past experiences purportedly facilitated development through reinforcing team goals and increasing team persistence; *contextualising people's struggles* fostered a sense of agency and enhanced team responses to problems; and *transcendent hope* maximised team resilience through energising team members and providing belief of positive future experiences.

Operationalisations of team resilience. It is important to consider how researchers have translated theoretical definitions of team resilience into measurable concepts using

different empirical methods and approaches. Of particular relevance here are those studies

that assessed team resilience through surveys ($n = 10$, 37%), observations ($n = 3$, 11%), and

intervention ($n = 5$, 19%). Differences in the dimensionality of team resilience were observed

within survey methods; for example, five studies assessed team resilience as a

unidimensional concept, whereas five others adopted a multidimensional perspective. A

variety of characteristics or hypothesised protective factors were also assessed within the

multidimensional approach to survey assessments. West and colleagues (2009) adapted items

from the PsyCap questionnaire (Luthans, Avolio, Avey & Norman, 2007) using a referent-

shift approach (i.e., adapted items from the individual to the collective level; Chan, 1998) to

capture resilience at the team level; they reported adequate internal reliability evidence ($\alpha =$

.76), yet no factor analysis was conducted to assess the structural properties of the scale in

their sample. Decroos et al. (2017) and Sharma and Sharma (2016) both leveraged findings

from Morgan et al. (2013) to create items that assess four dimensions of mastery approaches,

social capital, collective efficacy and group structure via a lower-order measurement model.

Through a series of factor analyses, Decroos et al. reduced the item pool into two broad

dimensions related to a team's ability to display resilient characteristics and vulnerabilities

under pressure, and reported excellent internal reliability evidence at the within-team ($\omega =$

.90) and between-team levels ($\omega = .99$). Sharma and Sharma (2016) conducted an exploratory

factor analysis, which supported a 10-factor model for the 50 items, and which demonstrated

adequate internal reliability evidence for each factor ($\alpha > .72$). Carmeli, Friedman, and

Tishler (2013) constructed six questions and conducted exploratory factor analysis to support

the two dimensions of efficacious beliefs ($\alpha = .82$) and resilience as adaptive capacity ($\alpha =$

.86) to operationalise team resilience. Finally, Van der Beek and Schraagen (2015) developed

a scale for analysing and developing adaptability and performance in teams to enhance

resilience (ADAPTER). Factor analysis support six-factors consisting of items characteristic

of responding, learning, anticipating, monitoring, cooperation with departments, and shared

leadership; internal reliability evidence was mixed, with Cronbach's alpha ranging between

.49 and .94.

With regard to unidimensional survey approaches, three studies adapted measures

utilised in previous research. Blatt (2009) utilised a referent shift approach (Chan, 1998) to

modify two items from the Safety Organising Survey (Vogus & Sutcliffe, 2007) and four

from the Brief Resilient Coping Scale (Sinclair & Wallston, 2004) in order to measure

reactions and preparedness for 'challenges'; however, neither internal reliability estimates nor

factor analyses results were reported. In contrast, Meneghel, Martínez et al. (2016) and

Mengehel, Salanova et al. (2016) adapted seven items from Mallak's (1998) principles of

organisational resilience, including perceptions of experiences, tolerance for uncertainty and

ability to perform adaptive behaviours. They did not report a factor analysis of the structural

properties of the scale, yet reported adequate internal reliability evidence for the

unidimensional factors (α =.83). Finally, two unidimensional surveys assessed team resilience

via bespoke scales. Stephens et al. (2013) constructed three items to assess a team's capacity

to bounce back from challenges (α =.92) and confirmed the unidimensional structure via

exploratory factor analysis, whereas Amaral, Gonzales and Varajo (2015) assessed

perceptions of the usefulness of 48 predefined actions (α = .96) in developing team resilience.

In terms of observational work, Savioja et al. (2014) assessed habitual behaviours

within a 'perception-action' cycle (i.e., the flow of information that takes place between an

organism and its environment) as interpretative (e.g., attending to processes of a situation),

confirmative (e.g., double checking) or reactive (e.g., lagging behind events). In an

alternative approach, Furniss et al. (2011) developed a framework of markers based upon the

extent to which they generalise across situational domains, within which four key elements

(resilience repertoire, mode of operation, resources and enabling conditions and

vulnerabilities and opportunities) were used to assess team resilience. Finally, an inspection

of the content of intervention programs provided insight into the hypothesised features or

antecedents of team resilience: an awareness of potential sources of disruption (Bennett et al.,

2010; Broome & Bennett 2011; Petree, Broome & Bennett, 2015), confidence (Bennett et al.,

2010; Broome & Bennett 2011; Petree et al., 2015; Van der Klej et al., 2011), communication

(Siegel & Schraagen, 2017; Van der Klej et al., 2011), and leadership style (Van der Klej et

al., 2011). These psychosocial factors were targeted using a range of techniques (e.g., group

discussion, group reflection), strategies (e.g., behavioural training, role playing), and skills

(e.g., centring, communication skills).

Discussion

The aim of this scoping review was to examine the existing literature on team

resilience to identify and assess the available evidence in terms of definitional, conceptual,

and methodological issues. Of particular relevance was to assess the scope and nature of

conceptual and empirical work on team resilience, with the view to summarise commonalties,

unique perspectives, and discrepancies in substantive and methodological issues. Three key

observations can be made of the existing literature on team resilience on the basis of the

findings of this scoping review. First, our critical assessment of existing definitions of team

resilience revealed a broad array of strengths and weaknesses, yet in most cases the

limitations outweighed the positive features. Second, methodological approaches to

operationalise and measure team resilience varied, and often relied on cross-sectional

snapshots of teams that are inadequate for the study of team resilience due to its dynamic

nature. Third, team resilience has been conceptualised in diverse ways such as an *input* to the

system, a *process* by which individuals interact with each other, and an *outcome* of dynamic

interactions among team members. Such conceptualisations often exclude direct reference to

the multilevel nature of this concept (e.g., individuals embedded within a team, bottom-up and top-down processes).

Assessing existing definitions and conceptual models is an important first step for any effort designed to clarify the substantive features of team resilience. Although the definitions proposed by West et al. (2009) and Morgan et al. (2013) were among the most commonly adopted, there was an absence of a universally recognised definition of team resilience, with researchers often proposing bespoke definitions within the context of their study. Unsurprisingly, the majority of definitions referred directly to the 'team' as the specific entity to which team resilience relates; however, some variation existed in the specific classification with two definitions seemingly vague on the entity (i.e., a system) (Edson, 2010; Hollnagel et al., 2011), and another generalising the definition to multiple systems including individuals, teams and organisations (Sutcliffe & Vogus, 2003). Existing definitions of team resilience can be understood within the context of the input, processes and output model (I-P-O; Ilgen, Hollenbeck, Johnson, & Jundt, 2005) of systems within organisational settings. Predominantly, definitions of team resilience encapsulated the concept as an input, specifically in the form of a predefined capacity or ability of the team (e.g., Alliger et al., 2015; West et al., 2009). In contrast, Morgan et al. (2013) defined team resilience as a psychosocial 'process', whereas Kennedy et al. (2016) described it as an output in the form of a shared belief among team members (Kennedy et al., 2016). Finally, Carmeli et al. (2013, p. 149) defined team resilience as encompassing multiple elements, namely an input ("capacity to cope, recover and adjust") and output (a "team's belief"). Collectively, these results indicate that there are discrepancies in terms of the defining features of team resilience, and therefore efforts are required to work towards consensual agreement on the unique nature of this concept in future work. These discrepancies and opportunities for advancement in definitional quality may be addressed through divergent methods to those currently adopted

within the literature on team resilience. For example, a Delphi study of academic experts may be required to fast-track the evolution and consensus surrounding a definition of team resilience (Okoli & Pawlowski. 2004).

Podsakoff et al. (2016) described problems at two levels that arise from poor conceptual definitions. At the first level, poor concept definitions may impede the ability to compare and discriminate accurately the focal concept with similar and related concepts. Although headway has been made to uncover key aspects of the nomological network of team resilience (Meneghel et al., 2016; Stephens et al., 2013), conceptual ambiguity may impede the understanding of related concepts within this network and also the specific nature of these associations (i.e., antecedents, consequences or correlates of team resilience). At the second level, issues could potentially ensue including deficient (i.e., failure to articulate all essential properties) or contaminated (i.e., lacking precision resulting in other construct elements being involved) characteristics of subsequent operationalisations of team resilience. With few exceptions (Kennedy et al., 2016), researchers offered little insight into the overlap and distinction between team resilience and related concepts with the absence of attention paid to construct validity of team resilience further highlighting this point. This omission is particularly important for conceptual clarity, as several definitions of team resilience shared similarities with the related concepts of team adaptation and adaptability (for reviews, Christian, Christian, Pearsall, & Long, 2017; Maynard et al., 2015). Clarification of the overlap and distinctions between team resilience, team adaptation, and other concepts (e.g., collective efficacy, team effectiveness) is necessary to prevent the occurrence of construct proliferation or the jangle (i.e., the use of several names to describe conceptually overlapping constructs) and jingle fallacies (i.e., the use of the same term with differing meanings to refer to divergent constructs) (Block, 2000) and, ultimately, to establish the discriminant validity of the concept. In addition to the clarification of the necessary and sufficient conditions of the

concept, expositions of how and why team resilience is distinct from related concepts also represents a priority for future work, that is, to conceptually and empirically disentangle team resilience from related concepts, and clarify the relevance and usefulness of this concept. Taking into consideration these substantive issues, Gucciardi et al. (in press) recently defined team resilience as "as an emergent outcome characterizes the trajectory of a team's functioning, following adversity exposure, as one that is largely unaffected or returns to normal levels after some degree of deterioration in functioning" (p. 7).

Conceptual models of team resilience also varied with reference to the I-P-O framework (Ilgen et al., 2005). Some researchers have focused their efforts on conceptualising team resilience as an input (Rodrigues-Sanchez & Perea, 2015) or process (Glowinski et al., 2016), however, predominant among conceptual models is the conceptualisation of team resilience in terms of key outputs or characteristics (e.g., Alliger et al., 2015; Lawrence & Maitlis, 2012; Morgan et al., 2013). Absent from these models is an explicit recognition of how team resilience as an outcome emerges from the dynamic interactions among individual members. For example, Glowinski et al. (2016) and Morgan et al. (2013) attributed broad dimensions of monitoring situations and group structure as higher level properties of resilient teams, respectively, without delineating the processes underpinning their emergence. An exception to this finding is the work of Kennedy et al. (2016), who paid homage to the emergent nature of team resilience; however, specific detail regarding the dynamics of this emergence was absent within their article. It is generally accepted that teams are best viewed as complex and dynamic in nature (McGrath, Arrow & Berdahl, 2000); therefore, the predominance of single level approaches within the conceptual models of team resilience is incongruent with this perspective and highlights a key limitation of existing literature. Future work is required to articulate the conceptual details of these multilevel dynamics, including bottom-up (i.e., how lower-level processes facilitate the

emergence of team resilience at a higher level, such as the team) and top-down (i.e., how

higher-level factors influence lower-level attributes) processes (Kozlowski, Chao, Grand,

Braun & Kuljanin, 2013).

Concept definitions and conceptual models are important because they inform the

operationalisation of constructs through measures and study designs. Of particular relevance

is congruence between definition and operationalisation. For example, if defined as a capacity

or input into the system, the assessment of team resilience requires indicators that capture

these elements at the appropriate level of the system (e.g., individual or team level factors).

This congruence was evident among the majority of work reviewed, primarily with regard to

conceptualisations of team resilience as a capacity or input (e.g., Meneghel, Martínez, et al.,

2016; West et al., 2009). Nevertheless, there were instances of incongruence between

definition and operationalisation. For example, Morgan et al. (2013) defined team resilience

as a psychosocial process, yet their findings provided clarity on four key characteristics or

inputs of this concept rather than the processes by which teams are protected from the

potentially detrimental effects of stressors. Stress and adversity and the capacity of teams and

processes by which they overcome these potentially detrimental circumstances are also

central to most definitions of team resilience. However, with few exceptions (Savioja et al.,

2014), researchers assumed rather than tested directly the resilience enhancing nature of

inputs and processes. To observe directly the influence of inputs and processes on the

emergence of team resilience requires longitudinal or experimental designs in which the

temporal dynamics of team resilience can be examined and understood within the context of

stress and adversity. The reliance on cross-sectional designs to date is likely a reflection of

the limited attention paid to temporal aspects within definitions and conceptual models of

team resilience.

Bonanno, Romero, and Klein (2015) described the importance of paying close attention to the temporal elements of resilience. Specifically, they described the necessity of defining and integrating four essential components within any study of resilience: (i) system functioning prior to the onset of an adverse experience (i.e., baseline measurement); (ii) the specific nature of the adverse experience; (iii) system functioning post-adversity; and (iv) the determinants of functioning during the course of this sequence. With reference to the analysis of methodologies adopted within the studies of this review, the specific characteristics of the adverse experience at play were often absent from the methodological detail and, therefore, offered little insight into key information regarding the central question of 'resilience to what'. As an exception to this general finding, Savioja et al. (2014) provided details on the simulated accident scenario in their investigation of team resilience among nuclear power plant operators. In terms of details regarding the adverse event, Bonanno and colleagues also underscored the importance of understanding its severity (i.e., adverse event is chronic or acute), level of exposure (i.e., individual differences in response to adversity) and trajectory of impact (i.e., immediate or longer term). It is therefore important that future work on team resilience provide this degree of clarity when contextualising adverse experiences.

Central to the operationalisation of resilience for any type of system (e.g., individual, team, family) is clarity regarding the nature of functioning and its trajectory over time within the context of adverse events (Bonanno et al., 2015). With regard to individual resilience, for example, health (e.g., mental, physical) and well-being have been proposed as exemplars of functioning (Kalisch et al., 2017). Primary indicators of functioning for social resilience, in contrast, are concerned with meaningful relationships with others or a sense of connectedness (Cacioppo, Reis, & Zautra, 2011). Clarity on this critical aspect of the conceptualisation of team resilience was absent within the work we identified in this review. Teams are often formed with the purpose of achieving a common objective or shared goal (Sundstrom et al.,

1990) that involve performing tasks outside the capability of individuals (Dobbins et al.,

2016). For this reason, it seems appropriate that the extent to which shared and valued

objectives are met (e.g., efficiency, quantity and quality) represents the defining indicator by

which to assess functioning for the purposes of team resilience. In contrast, a focus on

individual level performance may result in erroneous inferences regarding the demonstration

of team resilience. For example, situations may occur where the functioning of one or two

individual members deteriorates after exposure to adversity, yet appropriate contingencies

from other individuals (e.g., another teammate takes on an increased workload) may offset

the potential ramifications of these individual member reductions in functioning for the

accomplishment of team objectives. Assessment of functioning at the team level therefore

represents an important feature for future research on team resilience.

Past work on resilience suggests that there are three broad possible trajectories of

functioning for a system following some type of adversity (e.g., Bonanno, Westphal, &

Mancini, 2011; Layne, Warren, Watson, & Shalev, 2007; Norris, Tracy, & Galea, 2009).

Systems may (i) *withstand or resist* the effects of adversity in that functioning is minimally

affected, (ii) *bounce back* quickly to normal or healthy levels of functioning after a

significant deterioration, or (iii) *recover* to competent functioning gradually over an extended

period of time. Such trajectories allow resilience to be distinguished from related yet different

concepts, such as post traumatic growth where enhanced functioning is expected post-

adversity (for a review, see Zoellner & Maerker, 2006).

Contextual and team type factors represent important issues for team resilience, yet

they have received little attention among the work reviewed here. Most notably, team size,

team composition (e.g., gender, personality makeup), the level of task interdependence (i.e.,

the amount individuals rely upon others for team performance), skill differentiation (i.e., who

does what), team lifespan, virtuality (i.e., proportion a team is face-to-face or remotely

connected), and authority differentiation (i.e., the degree to which decision making is

distributed across members) are important considerations (Salas, Reyes, & McDaniel, 2018).

For example, recovering to competent functioning after several hours may be indicative of

resilience for a top management team of an investment firm acquiring another firm, yet

would not be the case for a surgical team conducting an operation on a patient with a life-

threating ailment**.** This example further illustrates divergence in the nature (e.g., type or

magnitude) of adversities experienced across team type and the need to consider the adversity

when comparing resilience trajectories across teams of those experiences that would be

considered normative and those that would likely cause significant perturbation to the system.

Future empirical work on team resilience would do well to take into consideration these

contextual and team type factors.

Several of the findings reported in this review of the team resilience literature parallel

other areas of resilience inquiry. In particular, definitional and conceptual disharmony is

prevalent in past work on resilience within individuals, communities, and ecologies, such that

it is often the case that there is a mismatch between definition and operationalisation (Kalisch

et al., 2017). Within the context of community resilience, for example, some scholars define

it as an *ability* to adapt (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008), and

others as an *outcome* or quality (Manyena, 2006). Such definitional inconsistencies are also

observed within the domains of engineering (Hosseini, Barker, Ramirez-Maruquez, 2016)

and ecological systems (Angelini et al., 2016). There are also parallels noticed between

proposed protective processes within team resilience literature and other systems. For

example, although unique processes of team resilience have been uncovered (e.g.,

transformational leadership, Morgan et al. 2015; emotional carrying capacity, Stephens et al.,

2013), many protective processes identified (e.g., hope, positive emotions, leadership and

collective efficacy) mirror those prevalent within the family (Black & Lobo, 2008) and

individual resilience domains (Pangallo et al., 2015). These parallels among the various areas

of resilience research are likely representative of the complexities and challenges associated

with conceptualising and measuring dynamic systems and emergent concepts. Given the

relatively early stage of theory and research on team resilience, there is an opportunity for

scholars to foster consistency between definition and operationalisation in future work in

ways that could inspire scholars who study resilience in other systems.

Strengths and Limitations

A key strength of this scoping review included a systematic approach to the search

method and data extraction, including multiple databases and strategies (e.g., citation search

of included articles). Nevertheless, it is important to acknowledge two key limitations of this

scoping review when considering the conclusions drawn from the reviewed body of work.

First, as is often the case with scoping reviews where the primary focus is on collating

evidence regarding a broad topic of interest (Levac et al., 2010), we did not assess the

methodological quality or rigour of studies identified via our search strategy. Second, only

articles published within peer reviewed academic journals were included within the current

review. As a result, unpublished research (e.g., dissertations, conference abstracts, book

chapters) was excluded, thereby representing a potential source of bias (Rosenthal, 1979).

Conclusions

Through a systematic scoping review of the published literature on team resilience,

we uncovered what is currently known about this concept and how researchers have gone

about generating this information. These findings have the potential to inform future work on

team resilience in several ways. First, there is a need for enhanced conceptual clarity of team

resilience through the development of definitional consensus using recommendations for high

quality definitions (Podsakoff et al., 2016), specifically with regard to the essential and

unique characteristics. Enhanced conceptual clarity is likely to optimise the means by which

team resilience is observed and operationalised within subsequent studies as well as foster the

distinction and comparison of team resilience from related concepts (e.g., team adaptation).

Second, the diverse range of research methods is a strength of the current literature, yet there

is a need for an overarching theoretical framework that fosters integration of such findings.

Specifically, the development of a conceptual framework may look to align with the

generally agreed upon systems perspective and would provide a reference for the systematic

testing of individual and team level factors and processes important to the successful

trajectory of functioning following adversity. Third, there is a need to balance the current

wealth of cross-sectional approaches with longitudinal and experimental studies to

disentangle information regarding the temporal nature of team resilience. Of particular

relevance in this regard is the examination post-adversity functioning relative to functioning

prior to the onset of adversity and characterisation of the specific context of such adverse

experiences (e.g., positive/negative valence, chronicity, severity etc.). Future work should

also look at how resilience develops or declines over time (i.e., across multiple adverse

experiences). Finally, it is important that investigations into the dynamic nature of team

resilience draw from multilevel theory (Kozlowski et al., 2013) in which researchers clarify

the inputs, bottom-up and top-down processes, as well as the outcomes of the emergence of

team resilience. There is also a need for multidisciplinary integration across relevant cognate

areas such as psychology (e.g., stress appraisals), sociology (e.g., social, economic, and

political pressures), organisational behaviour (e.g., work design factors), biological systems

(e.g., physiological indices of stress exposure), and computation (e.g., virtual simulations and

experiments). This multilevel and integrative perspective is consistent with the fourth wave

of resilience research that works towards understanding cross-level interactions among

developmental systems.

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Table 1. *Overview of Definitions and Quality Indicators.*

Source	Primary definition	Secondary citations of primary definition	Measures of definition quality					
			PE	EA	DM	S	N	D
Alliger et al. (2015, p. 177).	"The capacity of a team to withstand and overcome stressors in a manner that enables sustained performance; it helps teams handle and bounce back from challenges that can endanger their cohesiveness and performance."	None	✓	?	X	X	✓	X
Amaral et al. (2015 p. 1184)	"The team's ability to deal with problems, overcome obstacles, or resist the pressure of adverse situations (e.g. the early leaving of a team member), without entering into rupture, and allowing a positive adjustment to successfully perform particular tasks, increase reliability, longevity and the overall performance."	None	✓	✓	X	X	✓	X
Carmeli, A., Friedmand, Y., & Tishler, A. (2013. p. 149)	"A team's belief that it can absorb and cope with strain, as well as a team's capacity to cope, recover and adjust positively to difficulties."	None	✓	X	X	X	X	X
Edson (2010, p. 2)*	"Ability of a system (team/organisation) to adapt its structure while maintaining its function which often entails emergence of new processes (behaviours, norms and hierarchical structures)."	Cited in Edson (2012, p. 501)	✓	?	X	X	X	X
Hollnagel et al., (2011)*.	"The ability of a system to adapt to external perturbations and anticipate future events."	Cited in Glowinski et al. (2016, p. 2)	✓	X	X	X	X	X
Kennedy et al. (2016, p. 468)	"Shared belief held by the team that it can respond to disruptive and challenging events, recover from setbacks, and thrive as a team under these conditions."	None	✓	✓	X	X	X	✓
Morgan, Fletcher, Sarkar (2013, p. 552)	"A dynamic, psychosocial process which protects a group of individuals from the potential negative effect of stressors they collectively encounter. It comprises of processes whereby team members use their individual and collective resources to positively adapt when experiencing adversity."	Cited in; Morgan, Fletcher, Sarkar (2015, p. 92); Sharma & Sharma (2016, p. 38);	✓	✓	✓	✓	✓	X

		Decroos et al. (2017, p. 4)						
Rodriguez-Sanchez & Perea (2015, p. 30)	"A capacity that teams have in order to overcome crisis and difficulties."	None	✓	X	X	X	X	X
Sutcliffe & Vogus, (2003)*	"The ability of individuals, groups, and organisations to absorb the stress that arises from these challenges and to not only recover functioning back to a "normal" level but also learn and grow from the adversity to emerge stronger than before."	Cited in Stephens et al. (2013, p. 15)	✓	✓	X	X	X	X
Van der Klij et al. (2011, p. 4)	"Ability of teams to respond to sudden, unanticipated demands for performance quickly and with minimum decrement of performance."	None	✓	X	X	X	X	X
West et al., 2009, p. 253).	"Provides teams with the capacity to bounce back from failure, setbacks, conflicts, or any other threat to wellbeing that they may experience."	Cited in; McCray et al. (2016, p. 1134); Meneghel, Martinez, Salanova (2016, p. 507); Meneghel, Salanova, Martinez (2016, p. 241); Lawrence & Maitlis (2009, p. 655)	✓	?	X	?	✓	X
N/A	No definition explicitly stated	Bennett et al. (2010); Broome et al. (2011); Petree et al. (2016); Van der Breek & Schragen (2015); Blatt (2009); Gorman et al. (2016); Savioja et al. (2014); Siegel & Schragen (2017).	N/A	N/A	N/A	N/A	N/A	N/A

Note. PE = property and entity; EA = essential and unique attributes; DM = dimensionality; S = stability over time/context; N = nomological network; D = differentiation from similar constructs. *Primary definition cited but not included in the scoping review process.