



Research insight  
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# Developing resilience

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# Introduction

The resilience research project was conducted by Affinity Health at Work (AHAW) and funded by the Affinity Health at Work Research Consortium, including the CIPD, Business in the Community (BitC) and the Institution of Occupational Safety and Health (IOSH). AHAW were commissioned to perform a practitioner and academic literature review on psychological resilience at both individual and organisational levels, in order to develop a grid that summarises the information. The objective of the grid approach is to provide guidance and knowledge to practitioners on what the evidence base is for resilience interventions.

The first part of this report will explore the concept of resilience at both the individual and organisational level. This will include definitions, conceptualisations, a brief comment on measures as well as some of the limitations of the resilience construct. The second section of this report features the grid, which outlines organisational and individual interventions at both practitioner and academic levels.

## **Aims and objectives**

The overall aim of this report is to assist practitioners in understanding resilience and approaches to building resilience, as well as identifying gaps in these domains.

The objectives of the grid provided in Part 2 include:

- to review interventions designed to build resilience offered both by practitioners and by the academic community
- to outline the evidence base on which these resilience interventions are built
- to review information on resilience interventions in a way that is accessible and useful to practitioner audiences.

# Part 1: What is resilience?

## Findings from the literature review

### Resilience at the individual level

Resilience has a compelling history in psychology and psychiatry. It began with developmental studies of children who were functioning well despite less than healthy family backgrounds. Subsequently, a vast amount of research in the health domain emerged, focusing on the effects of resilience for coping with traumatic situations. This research was broadened to encompass external factors (social/structural) that promote resilience. The finding that certain factors 'buffer' individuals from stressors also fuelled research that has developed related concepts such as hardiness, sustainability, self-efficacy, personal causation, learned resourcefulness, sense of coherence, locus of control, potency and stamina (Garmezy 1993, Glantz and Sloboda 1999, Luthar and Cicchetti 2000, Luthar et al 2000, Ryff et al 1998).

A consistent theme among the definitions of resilience is a sense of recovery and rebounding despite adversity or change. Most conceptualisations are consistent in identifying resilience as a dynamic process that involves a personal negotiation through life that fluctuates across time, life stage and context (Tusaie and Dyer 2004). The diversity and complexity of definitions, concepts and approaches used by researchers in the field of resilience renders the task of identifying a precise definition of resilience very difficult. However, Windle (1999) captures the essence of resilience succinctly and describes it as:

*'the **successful** adaptation to life tasks in the face of social disadvantage or highly adverse conditions'* (p163).

This basic conceptualisation of resilience as adaptation despite adversity is broadly evident, however resilience is contextual in many ways. Isolated adverse experiences have a different significance for

resilience to similar experiences occurring alongside other adverse events. Therefore, resilience is best understood as multidimensional and variable across time and circumstance. One reason for a lack of consensus on one definition of resilience may perhaps be the many different psychological disciplines that resilience straddles. Despite the breadth and depth of definitions, the basic conceptualisation of resilience as adaptation and bounce back despite adversity is considered a good starting point for the purpose of a common frame of reference.

### Resilience at the organisational level

According to Erica Seville and colleagues (2008), each organisation has their own 'perfect storm': a combination of events or circumstances that has the potential to bring adversity to any organisation. To overcome this, it is important to define what resilience means for an organisation (independent of the cause of crisis) and to identify the circumstances which pose the greatest threat to survival. Further, it is important to acknowledge that organisations may become more susceptible to adverse events if they have faced many crises, as their resources are stretched and defences weakened by earlier events.

It is suggested that the greater the diversity of resilience strategies available to an organisation, the greater the ability to respond to challenges. More strategies have the effect of providing a bigger buffer to survive larger crises, or the cumulative effect of more frequent crises. Risk management provides a good framework for organisations to be more proactive in thinking about and managing the unexpected. However, risk management is faced by ontological uncertainties such as 'we don't know what we don't know'.

In sum, resilience is conceptualised and defined exactly the same way for organisations as it is for individuals, however the key differentiator is the area of focus.

Where individual resilience looks at the individual's ability to bounce back from adversity, organisational resilience looks at how well the organisation can 'weather the storm' or adapt to challenges it faces. This may seem a rather obvious observation to make; however, resilience at the organisational level must consider not only individuals within it but also the processes and culture those individuals work with on a daily basis.

### Team resilience

Team resilience appears to lie somewhere in between individual resilience and organisational resilience. There was very little research available on team resilience, as it seemed to be subsumed under organisational resilience. There may be some theoretical connection between team resilience and social capital. Putman (2000) regards social capital as networks and norms that enable participants to co-operate effectively to pursue common interests and objectives. This may be the case with resilient teams. This idea echoes Bandura's (2000) concept of collective efficacy, which suggests that a social group can feel that they have the positive ability to change their environment effectively.

Teams seek the familiar to help them recover from adversity, and many efforts are made to form community as they struggle with this task. While an individual may be able to face difficult decisions by drawing on their own skills, teams can strengthen those values in situations of oppression and moral dilemma. Where team members can be open and balance their needs and views through dialogue, collective resilience is strengthened. Collective resilience is about knowing there are people with whom you can share upsetting experiences and make light of problems, if only temporarily. Therefore team resilience may be viewed as either a social process (existing in teams or groups) or an individual trait expressed collectively (for example as a group or team effort).

### How has resilience been conceptualised in research and practice?

After a review of the practitioner and academic literature, it became apparent that conceptualisations of resilience could be grouped into key themes for both individual and organisational resilience. These thematic groupings have been used as a basis for the

grid provided in Part 2 and are explained below. Please note: team resilience may fit into either individual or organisational categories and did not merit a category of its own.

#### *Categories of conceptualisations of individual resilience*

The research reviewed clustered into three categories that are similar in terms of approach and conceptualisation. Using this categorisation helps the reader see the similarities and differences in approaches, according to whether they focus on: internal attributes of the person; the social environment; or a combination of the two.

**1 Personality/individual characteristics** – resilience is internal to the individual and is seen as an innate ability the individual possesses that forms part of their personality. These include: internal locus of control (control over one's life), perseverance, emotional management and awareness, optimism, perspective, sense of humour, self-efficacy (belief in own capabilities) and the ability to problem-solve: '*innate human psychological immune capacity*' (Kelley 2005).

**2 Environment** – resilience is wholly dependent on the experiences that a person has with their environment. So, factors external to the individual will determine how resilient a person is, such as how much social support they receive. The person's personality is not seen as relevant: '*a multi-faceted process from which people draw and learn from the best they can find in their environment, which can include family, school or the community*' (Greef 2002).

**3 Person–environment** – resilience is a product of a person's personality in combination with environmental influences such as family, peers and social environment: '*...categories that promote resilience, namely individual dispositional attributes, family support and cohesion, and external support systems*' (Richardson 2002).

#### *Categories of conceptualisations of organisational resilience*

The following four categories cluster research into areas that are similar in terms of approach and conceptualisation. As with individual resilience, this categorisation helps the reader focus on

similarities and differences in approaches, such as: the characteristics of a person's job; the culture and operating procedures of an organisation; the characteristics and influence of leaders in the organisation; or external events and environment within which the organisation operates:

**1 Job design** – resilience is dependent on the features of a person's job role, that is, how demanding the person's job is, how much control they have in their job, what type of motivators or rewards (internal and external) are associated with a particular job: *'the ability to interpret events, manage complexities, improvise, redefine roles, immediately correct errors and learn from them'* (Weick and Sutcliffe 2001).

**2 Organisational culture and structure** – the culture of the organisation and way the organisation adopts work processes and procedures are seen as central to resilience. For example, if an organisation has a bureaucratic structure coupled with a command and control culture, this may be detrimental to the extent to which people within the organisation are able to respond and adapt to challenges: *'A resilient organisation effectively aligns its strategy, operations, management systems, governance structure and decision support capabilities so that it can uncover and adjust to continually changing risks, endure disruptions to its primary earnings drivers, and create advantages...'* (Starr et al 2007).

**3 Leadership** – some researchers believe that emergent leadership (leadership from middle managers) and engaging, supportive leadership styles may heavily influence the ability of employees to be resilient to adverse events: *'Leaders are the stewards of organisational energy [resilience]...they inspire or demoralise others, first by how effectively they manage their own energy and next by how well they manage, focus, invest and renew the collective energy [resilience] of those they lead'* (Loehr and Schwartz 2003).

**4 Systemic/external environment** – the external environment and social relationships are seen to be key to resilience. If networks of successful relationships are not established, both for employees and for the organisation itself, the organisation, according to this

conceptualisation, is not seen as having the resources to adapt to change effectively and positively. Social and institutional support is seen as key at every level. Also, organisational resilience is seen as dependent on the resilience of stakeholders, competitors and the industry in which it operates: *'People with trustworthy relationships and personal support systems at work and with friends and family are more able to cope with stress and organisations more likely to hold up in a crisis'* (Johnson-Lenz 2009).

### Measures

Below are some general points that can be made regarding the measures used to study resilience:

- Quantitative scales tend to be used more than qualitative measures (Luthar and Cicchetti 2000, Masten et al 2006, Rutter 1993, Tusaie and Dyer 2004).
- Outcome measures (for example absence of mental illness) are often used that may not necessarily be relevant to the workplace (where looking at absenteeism or measures of performance might be more pertinent).
- There appears to be no uniform measure for researching resilience, so it is hard to make conclusions that apply across different contexts.
- Due to the fact that there are so many dimensions that can contribute to resilience, it is important that measures are conceptually similar to the area of resilience they are studying. For example, if risk factors such as poor manager behaviour are being measured, a suitable measure to assess manager behaviour should be used rather than a general resilience measure (Garmezy 1993, Luthar and Cicchetti 2000, Masten et al 2006, Tusaie and Dyer 2004).
- Given that resilience is seen as a complex construct that is dynamic, not static, there need to be measures of resilience that can capture the complexities of resilience over time (Glantz and Sloboda 1999, Luthar et al 2000, Rutter 1993, Windle 1999).
- Measures need to start exploring underlying mechanisms and processes of resilience such as what combination of factors lead to resilience (Fergus and Zimmerman 2005, Luthar and Cicchetti 2000).

- Research may reflect the values of dominant middle classes, which do not represent the population as a whole and do not take into consideration diversity of cultures and communities.

*Please refer to the Appendix for the various types of measures used in the resilience research reviewed. This list is by no means exhaustive, but indicative of the types of measures used. Any measures used in the grid will be indicated by an asterisk (\*). For example, \*DAS – indicates that the Depression and Anxiety Scale was used in the study.*

### Gaps and limitations

This section outlines some of the limitations identified in the literature as well as limitations specific to individual and organisational resilience.

There are three major and inter-related sets of issues and implications identified in the literature, which can be grouped as follows: inconsistency in approaches; the appropriateness of measures; and limited explanatory power of research. The lack of an agreed conceptual framework is problematic as there is a varied use of key terms such as ‘protective factors’ (Luthar and Cicchetti 2000, Luthar et al 2000) and ‘risk factors’ used to evaluate the resilience process (Windle 1999). Further, the considerable differences in the objectives and outcomes of interventions make it difficult to consider results collectively.

Despite an extensive literature review, there are no apparent guidelines on whether resilience interventions should be used in a preventive or remedial capacity. Nor can information on what specific interventions should be used with which populations be found at the individual or organisational levels. There is a particular lack of evidence to support interventions at the organisational level that is not contextualised in emergency or disaster response settings.

An apparent weakness in the resilience literature has been its lack of attention to social/cultural contexts in which disadvantaged individuals and groups live. Research on resilience and adaptation could therefore be strengthened by having a greater space for consideration of situational influences that shape responses to adversity, with increased opportunities

for identifying and targeting risk and protective factors. Minority groups are reported to have been underrepresented in research on resilience, and it is also suggested that research on resilience has focused too much on individual factors and has not paid enough attention to situational influences on behaviours and adaptations (Luthar and Cicchetti 2000, Miller 1999, Ryff et al 1998).

A further limitation identified in this review is that very little information is provided on the characteristics and quality of the interventions studied. Also, the vast majority of evidence reviewed is US-centric, and although socio-cultural similarities exist between the UK and US, differences between the two countries mean that this evidence should also be treated with some caution.

### What limitations are common to both individual and organisational resilience?

- Both individual and organisational resilience research fail to reach consensus on an exact definition. Resilience seems to be viewed and operationalised very differently according to who is conducting the research and what is being researched. There also appears to be a great deal of cross-sectional research (studies that examine an event at one point in time only) at the expense of longitudinal studies (studies that look at whether there is a cause–effect relationship by looking at an event at two time points; reactions to an adverse event six and twelve months after the event). This makes it hard to establish cause–effect relationships and determine whether, for example, increased support from managers actually increases resilience in the workplace.
- An over-reliance on self-reports is also evident in the literature. This is problematic as people may not recall the past as it unfolded (memory bias) and there is much room for placing personal meaning or interpretations (after the fact) when trying to recall incidents. With a construct such as resilience it would have been useful to use diaries to record exact feelings and reactions to adverse events, to look at resilience over time and also to have a more accurate recollection of the adverse event.
- There is a need for a more balanced approach of research methods using various forms of data



collection methods and more robust methodologies. Small samples are very common in many of the studies reviewed, which means that studies may not detect effects or may detect spurious effects due to a very small pool of people being studied. Poor methodology such as this can also render results meaningless as they cannot be applied across different situations and contexts.

- The samples being studied are often quite restricted, for example sharing a primary demographic feature. In some studies, students were used as participants with very little trauma in their history and with very similar demographic backgrounds. This would have skewed the results and made them unrepresentative of the general population, which would make it difficult to make meaningful conclusions from the research. In other studies the research participants were all white, male, blue-collar workers. It then becomes difficult to say with confidence that the results of these studies would apply to groups with different demographic characteristics more representative of the wider working population.

#### **Limitations in individual resilience research**

- There is a focus on self-selection (people who select themselves to participate in studies). This may lead to a selection bias, which means that people who come forward to participate in studies may represent only a specific part of the population and not be representative of the population in general.
- There is little research about the process of resilience over time. That is, is it stable over time? Does it remain stable throughout one's life stages (for example youth–elderly)?
- There appears to be a lack of demographic awareness in the research. So, looking at the effects of gender, age or level of education, and the impact they have on resilience, is not an area of interest in most cases.
- There is a lack of workplace outcome research; very few outcomes focused on impact on outcomes such as job satisfaction, employee turnover, performance or absenteeism.
- Many studies do not consider the context of the individual, which again may have produced results that are applicable only to a given situation.
- There may be some ethical issues that arise while researching resilience. It is difficult to withhold

resilience interventions from a control group as it may be seen as unfair to this group of participants if an experimental group is receiving some type of intervention and the control group is not during adverse events/situations.

#### **Limitations in organisational resilience research**

- In general, there seems to be a dearth of research on organisational resilience.
- Much of the research into organisational resilience that does exist examines resilience in the context of reactions to disaster events or periods of dramatic change. It could be argued that this may not capture resilience completely and findings could be showing how resilience overlaps with other constructs in these specific situations rather than showing how resilience impacts on specific organisational outcomes or bottom-line performance.
- Due to the narrow area of investigation in many studies, it is difficult to generalise the results and say that all organisations would benefit from findings as it may only apply to the organisations studied, with specific conditions and in similar situations.
- There is no distinction in studies between small, medium and large organisations nor clarity about whether they were in the private, public or third sector. There is also little attention paid to culture in terms of whether the organisation is based in an Eastern or Western culture, which would potentially have quite considerable impact on beliefs, values and practices. This lack of distinction may confuse results as all of these factors may influence findings and make it difficult to suggest practical recommendations that apply to organisations 'across the board'.

#### **Concluding comments**

In spite of the acknowledged variability in approaches to defining and researching resilience, there is still a substantial knowledge base on how and why individuals and organisations are able to achieve a higher level of functioning better than would be expected during exposure to adversity. Although there are some issues that need to be addressed in terms of how positive adaptation or outcomes are defined and operationalised, there is considerable consistency in the literature with regard to identifying factors associated

with positive outcomes: namely, that individual, social and institutional factors all play a role in buffering some of the effects of adversity and facilitating 'healthy' adaptation.

Despite the limited availability of prescriptive models for intervention, it has been possible to group individual and organisational resilience in the following categories to help understand the different areas of emphasis in resilience interventions:

- 1 Individual resilience interventions can be approached by addressing:
  - personality factors
  - the external environment only, or
  - a combination of personality and social factors.
- 2 Organisational resilience interventions target:
  - the demands and design of job roles
  - the processes and culture of the organisation
  - leadership behaviours, or
  - the organisation's external environment.

Finally, some key recommendations can be made with respect to resilience interventions:

- First, it is largely up to practitioners to determine when and whether interventions would add value to their client base. For instance, at the organisational level, it is recommended that organisations consider their available resources before embarking on building resilience, as appropriate human and physical resources will be key to sustaining adaptability and to changing behaviours.

- Second, it may be useful to think of resilience in terms of occupational health and stress of employees. Many of the interventions cited in the literature used approaches that closely modelled stress management interventions. It could be argued, therefore, that components of stress management interventions would be a good place to start thinking about organisational resilience interventions.
- Third, a wider range of approaches for individual interventions are reported in the literature than for organisational interventions. Almost all of these individual intervention approaches draw upon psychological models such as acceptance and commitment therapy, cognitive behavioural therapy, mindfulness and techniques drawn from positive psychology. At the practitioner level particularly, there appears to be a good number of service providers drawing on one or more of these models to address individual resilience.
- Finally, it is also useful to note that in much of the literature and interventions reviewed, coping skills and building buffers to adverse events were only part of the solution. It is increasingly clear that building social networks and support into the intervention is a critical success factor.

# Part 2: The resilience grid

## How to use the grid

The grid has been presented in tabular format so that academic and practitioner information can be compared easily. The following is a quick reference guide on how to use the grid.

- The grid **heading rows** indicate whether information is being presented at individual or organisational and academic or practitioner level. Headings highlighted in **blue** refer to individual interventions and will be separated into academic and practitioner columns. Headings highlighted in **orange** refer to organisational interventions and will also be separated into academic and practitioner columns.
- The **first column** indicates how the literature has been categorised as mentioned on pages 4 and 5 of this report (for example personality, job design, systemic, and so on).
- The **second column** gives a brief description of each category, which are briefer versions of the definitions given on pages 4 and 5 of this report.
- The **third and fourth columns** outline the relevant academic and practitioner interventions respectively. Some key points about each approach are provided as well as references for further exploration. If measures used in the studies were provided, an asterisk(\*) will indicate which measure has been used. **A full list of measures and their descriptions can be found in the Appendix.**

## Special notes

- 1 The grid provides only practitioner interventions that provide open source, free materials that are readily available to practitioners. The information presented in the grid is not intended to be a best practice or prescriptive framework, but more an idea of the possible approaches practitioners can take to address resilience. The main reason for

this is that there is little information available on what are the most effective interventions and 'what works' in given situations, particularly in organisational domains. Further, examining interventions for effectiveness is beyond the scope of this research project.

- 2 In the organisational interventions section of the grid, references to generic leadership and organisational development (OD) research have been made instead of specific references to organisational resilience research. This is because there is very little research available specifically related to organisational interventions that do not borrow from traditional organisational theories of leadership and OD. It therefore seems fitting to provide practitioners with traditional management literature as a theoretical framework for organisational resilience, as this is the most applicable to the organisational context.

## How we developed the grid

A comprehensive literature search was designed and carried out to provide information on the theories, research approaches and practice-based interventions relating to individual, team and organisational resilience. The aim was to compile a framework (the grid) that practitioners could use as a quick reference guide to assist in deciding what interventions to use when thinking about building resilience or providing clients with advice in this area.

It was considered neither appropriate nor necessary to subject the literature to a stringent inclusion/exclusion process as is sometimes the case in systematic literature reviews. It was more important that a comprehensive search of the literature was undertaken to examine the variety of approaches being used to address resilience.

### *Literature search*

A literature search was carried out using a combination of key words: the words within each set were combined using OR and the review filters were combined using AND. Searches were limited to papers published in English, with a focus on Western societies, and dated from 1990 onwards (although there are some older seminal articles included for context).

The following key words were used and were combined with subject headings specific to each database: (resilience/coping terms) coping, capability, positive (adaptation or adjustment or development), salutogenesis/salutogenic or resilience, resilient, self-efficacy, self-esteem, sense of coherence, self-concept, sustainability.

The following databases were searched: ASSIA (Applied Social Science Index and Abstracts), CINAHL (Cumulative Index of Nursing and Allied Health Literature), ERIC, Medline, PsycINFO, Sociological abstracts, Cochrane Reviews Database, EBSCO. Google Scholar and Internet search engines (Google and Bing) were also searched to collect practitioner information.

### *Data extraction and synthesis*

Data was extracted from the literature reviews into an Excel database to aid synthesis. A key aim for the review was to identify and describe salient concepts, practices and issues relating to resilience. In order to report this data in an appropriate manner, a synthesis of the key points made in the included papers was undertaken, which treated all of the research as narrative accounts rather than quantifiable records of effectiveness. Although this means that the information on findings does not probe effectiveness, it was felt that this approach provided the most appropriate and clear presentation of the types of factors identified across the resilience literature, particularly from a practitioner standpoint.

INDIVIDUAL			
WHAT IS IT?		WHAT CAN WE DO?	
CATEGORY	DESCRIPTION	ACADEMIC	PRACTITIONER
Personality/ individual characteristics	Resilience is seen as part of a person's personality or innate characteristics.	<p><b>1 Cognitive behaviour bibliotherapy (Gregory et al 2004)</b> Reading materials in the form of exercises that help overcome negative thoughts and feelings to combat depression. <i>Measures:</i> * Beck Depression Inventory * DASS-21</p> <p><b>2 Mindfulness (Tugade et al 2004, Bond and Flaxman 2006, Hayes et al 1999)</b> Relaxation techniques, promoting acceptance rather than change, and value-based actions. <i>Measures:</i> * GHQ-12 * AAQ</p> <p><b>3 Resilience regimen (Margolis and Stoltzharvard 2010)</b> Managers can grasp their own and their direct reports' habits of thought and help reframe negative events in productive ways through writing about control, impact, breadth and duration of adverse event.</p> <p><b>4 Cognitive behavioural therapy (CBT) or psychological debriefing (PD) (Devilley and Spence 1999, Foa et al 1991)</b> CBT aims to solve problems by addressing and challenging the thoughts that underlie unhelpful emotions, behaviours. PD is a brief, short-term intervention aimed at mitigating long-term distress and preventing emergence of post-traumatic stress.  CBT is effective for post-traumatic stress disorder as it allows clients to 'face' and deal with the thoughts, feelings and behaviours associated with traumatic events. <i>Measures:</i> * BDI * SCL-90-R * PTSD-I</p> <p><b>5 Self-efficacy training (Noble and McGrath 2005)</b> Self-efficacy is a belief in one's own capability to perform a task successfully, handle a situation, and so on. Self-efficacy built through strengths-based approach using humour and optimism. Encourages 'positive tracking', which means finding any positive aspects of a situation. Also teaches coping skills using cognitive behaviour therapy.</p>	<p><b>1 ROBERTSON COOPER</b> <a href="http://www.robertsoncooper.com/resilience/your_resilience/">http://www.robertsoncooper.com/resilience/your_resilience/</a> Looks at the nature of stress and how it interacts with people differently (emphasise personality characteristics) and provides coping mechanisms and tools. Designed for new staff, existing staff, leaders. <i>Measures:</i> Accessed by the hyperlink above</p> <p><b>2 COPE OHS</b> <a href="http://www.copeohs.com/news/business-psychology/managing-workplace-stress/">http://www.copeohs.com/news/business-psychology/managing-workplace-stress/</a> Cognitive behavioural techniques that can help to bolster resilience and enhance performance. Including: coping strategies and stress management techniques, strategies for challenging negative thoughts and promoting positive thinking, dealing with difficult or challenging people/situations.</p> <p><b>3 Mayo Clinic</b> <a href="http://www.mayoclinic.com">http://www.mayoclinic.com</a> Resilience education and training integrated with medical care to achieve well-being of the mind, body and spirit. Uses mindfulness and other mind-body techniques. Focus on cognitive (attention, memory, judgement and problem-solving), physical, emotional, spiritual (forgiveness, acceptance, compassion, true meaning and purpose).</p> <p><b>4 Trauma resilience training</b> Training includes exploration of what normal stress responses feel like, identifying potential future danger zones, developing advance response plans, learning a skill pre-trauma to aid conscious control of responses and thought patterns, identifying support network, control of intrusive memories and flashbacks, relaxation.</p> <p><b>5 In Equilibrium</b> <a href="http://www.in-equilibrium.co.uk/resources">http://www.in-equilibrium.co.uk/resources</a> Understanding resilience, pressure, stress and adversity. Focus on boundaries, internal vs. external locus of control (whether you perceive life experiences as within or out of your control), optimism and negative thinking, emotional awareness and regulation, empathy, reaching out, problem-solving, self-efficacy, controlling impulses (willpower) and tolerating ambiguity.</p> <p><b>6 Organisation Health Psychologists</b> <a href="http://www.orghealth.co.uk/document-library/">http://www.orghealth.co.uk/document-library/</a> Focus on how to reduce impact of adverse events and maintain psychological well-being, Also, how to communicate challenges effectively, embrace change, tackle negativity and set personal goals. Four principles of personal effectiveness are offered: control, aligning actions to values, antidotes to negativity and psychology of stress prevention.</p>

INDIVIDUAL			
WHAT IS IT?		WHAT CAN WE DO?	
CATEGORY	DESCRIPTION	ACADEMIC	PRACTITIONER
<b>Environment</b>	Resilience is dependent on the social or environmental context.	<p><b>1 Job demands (Ferris et al 2005)</b> Assess, evaluate and facilitate a level of job demand that a person in a particular job could manage, for example adequate rewards, providing conflict resolution strategies, defining scope of jobs, decision-making control, flexible hours, health and nutrition. <i>Measures:</i> *WWP</p>	<p><b>1 Psychological first aid (Rutter 2007)</b> <a href="http://www.axa-icas.com/home.php">http://www.axa-icas.com/home.php</a> Training for volunteers in typical trauma reactions and how to listen, respond and provide support.</p> <p><b>2 London Resilience</b> <a href="http://www.londonprepared.gov.uk/businesscontinuity/essentialdocs/">http://www.londonprepared.gov.uk/businesscontinuity/essentialdocs/</a> <a href="http://www.cabinetoffice.gov.uk/ukresilience.aspx">http://www.cabinetoffice.gov.uk/ukresilience.aspx</a> Responses to emergencies – focus on business continuity (risk mitigation).</p>
<b>Person–environment interaction</b>	Resilience is a result of the person’s personality combined with social and environmental factors.	<p><b>1 (READY) Psychosocial resilience training programme (Burton et al 2009)</b> Targets key psychosocial protective factors of: (a) positive emotions, (b) cognitive flexibility, (c) life meaning, (d) social support and (e) coping strategies. Based on acceptance and commitment therapy (ACT), which teaches acceptance of adverse events and helps the individual get in contact with a transcendent self. <i>Measures:</i> *Ryff’s Scales of Psychological Well-Being *CES-D</p> <p><b>2 Hardy training (Maddi 2002, Maddi et al 1999)</b> Teach ‘hardy skills’ of coping, social support, relaxation, nutrition and physical activity. This builds hardy attitudes of commitment, control and challenge. <i>Measures:</i> * Personal Views Survey (3rd ed rev/PVS-III-R) * HardiSurvey III-R,</p> <p><b>3 Develop resilience buffers synergistically (Armendariz et al 2009)</b> Attention to external supports (organisational and community resources), inner strengths (individual personality characteristics) and learned skills (coping skills).</p> <p><b>4 Develop positive psychological resources (Luthans and Youssef 2007, Luthans et al 2007)</b> Develop hope and optimism, by building assets (for example confidence and social support), risk-management strategies (for example contingency planning) and facilitate cognitive, emotional and behavioural adaptation. <i>Measures:</i> *NEO-PI-R</p> <p><b>5 Team resilience (Bennett et al 2010)</b> Five key resources are focused on: (a) personal competence (self-esteem, self-efficacy, hope and determination); (b) social competence (social adeptness, cheerful mood and good communication skills); (c) personal structure (ability to uphold daily routines, to plan and organise); (d) family coherence (family co-operation, loyalty and stability); and (e) social support (access to support from friends and family, intimacy and ability to provide support).</p>	<p><b>1 Integration Training</b> <a href="http://integrationtraining.co.uk/blog/2010/06/integral-business.html#respond">http://integrationtraining.co.uk/blog/2010/06/integral-business.html#respond</a> Tailor-made to fit workplace needs. Focus on relaxation, mindfulness, and stress management, cognitive behavioural therapy (CBT) techniques, problem-solving and creativity, social support and empathy, supporting organisational structures, processes and culture, realistic optimism, gratitude, mood management, emotional intelligence.</p> <p><b>2 Smithfield Performance</b> <a href="http://www.smithfieldperformance.com/topics/res/default.aspx">http://www.smithfieldperformance.com/topics/res/default.aspx</a> Explore thinking, behaviour, internal motivation and lifestyle factors that influence levels of resilience. Focus on how delegates interpret situations, especially successes and failures that they have experienced. Emphasise being realists and personal responsibility in situations. Work–life balance, lifestyle choices and their impact on motivation and engagement.</p>

**ORGANISATIONAL**

WHAT IS IT?		WHAT CAN WE DO?	
CATEGORY	DESCRIPTION	ACADEMIC	PRACTITIONER
<b>Job design</b>	Resilience can be developed by focusing on a person's role and how non-monetary rewards may contribute to reducing stress and motivate a person to be more engaged and productive in the organisation.	<p><b>1 Luthans et al 2006</b> Risk-focused HRD strategy fosters a positive employee–employer psychological contract. Risk is managed by creating an ethical and trustworthy culture.</p> <p>Asset-focused HRD strategy. Assets include human capital such as knowledge, skills and abilities, and social networks of support.</p> <p>Process-focused HRD strategy. Uses self-efficacy, self-enhancement, locus of control to adapt to stressful circumstances.</p> <p><b>Also refer to literature on psychosocial hazards in the workplace and job design theory.</b></p>	<p><b>1 wellbeing4business <a href="http://www.wellbeing4business.co.uk/about-us/resources/">http://www.wellbeing4business.co.uk/about-us/resources/</a></b> A risk assessment approach, based on HSE Management Standards to identify and address pressure hot spots within teams and organisations.</p> <p><b>2 WFD Consulting <a href="http://www.surveymonkey.com/s.asp?u=83146511579">http://www.surveymonkey.com/s.asp?u=83146511579</a></b> WFD works with leaders, managers and teams to engage and educate leaders about resilience, identify impediments to resilience in the organisation, empower managers and enhance their capabilities to foster resilience, engage employees in eliminating inefficiencies and practices that lead to excessive workload dissatisfaction, monitor resilience levels.</p> <p><b>3 EJT Associates <a href="http://www.ejtassociates.co.uk/articles.html">http://www.ejtassociates.co.uk/articles.html</a></b> Critical incident aftercare (CIA) and trauma first aid. Turner Rebuilding Resilience Programme (TRRP) – alternative to CI debriefing. Group work aimed at normalising effects. Identify resources and build on them, how to recognise and deal with dissociation and/or high arousal states and supports individual with relationships. TRRP for Managers – how to relate skilfully with employees post-incident (for example provide an adequate level of support and allowances for adjustment back to work). Mediation Service – ‘buddy scheme’/trauma support volunteer. Offer of an incident guide for vulnerable staff, outlining how to maintain resilience and the procedure if exposed to an incident.</p>
<b>Leadership</b>	Focus on the role of leadership in resilience and how it may promote resilience.	<b>Refer to various leadership models on engagement, well-being and emergent leadership such as transformational, transactional, functional, situational and contingency theories.</b>	<p><b>1 Team resilience</b> Academics and practitioners from a range of disciplines supporting leaders and managers in organisations who must support teams and the individuals within them to operate effectively when faced with continuous business re-engineering.</p> <p><b>2 WFD Consulting <a href="http://www.surveymonkey.com/s.asp?u=83146511579">http://www.surveymonkey.com/s.asp?u=83146511579</a></b> WFD works with leaders, managers and teams to engage and educate leaders about resilience, identify impediments to resilience in the organisation, empower managers and enhance their capabilities to foster resilience, engage employees in eliminating inefficiencies and practices that lead to excessive workload dissatisfaction, monitor resilience levels.</p> <p><b>3 Steelhenge <a href="http://www.steelhenge.co.uk/index.php">http://www.steelhenge.co.uk/index.php</a></b> Crisis and incident management approach which includes business continuity, crisis management, emergency management. Focus on business continuity methods such as business impact analysis and risk assessment. Also provide scenario-based workshops to rehearse decision-making and actions during response and recovery phases following an incident.</p>

ORGANISATIONAL			
WHAT IS IT?		WHAT CAN WE DO?	
CATEGORY	DESCRIPTION	ACADEMIC	PRACTITIONER
<b>Leadership (continued)</b>	Focus on the role of leadership in resilience and how it may promote resilience.		<p><b>4 EJT Associates</b>  <a href="http://www.ejtassociates.co.uk/articles.html">http://www.ejtassociates.co.uk/articles.html</a>            Critical incident aftercare (CIA) and trauma first aid. Turner Rebuilding Resilience Programme (TRRP) – alternative to CI debriefing. Group work aimed at normalising effects. Identify resources and build on them, how to recognise and deal with dissociation and/or high arousal states and supports individual with relationships. TRRP for Managers – how to relate skilfully with employees post-incident. Mediation Service – ‘buddy scheme’/trauma support volunteer. Offer of an incident guide for vulnerable staff, outlining how to maintain resilience and the procedure if exposed to an incident.</p>
<b>Organisational structure and culture</b>	Resilience interventions using processes and organisational culture to best equip organisations to face challenges.	<p><b>1 Luthans et al 2006</b>            Risk-focused HRD strategy fosters a positive employee–employer psychological contract. Risk is managed by creating an ethical and trustworthy culture.</p> <p>Asset-focused HRD strategy. Assets include human capital such as knowledge, skills and abilities, and social networks of support.</p> <p>Process-focused HRD strategy. Uses self-efficacy, self-enhancement, locus of control to adapt to stressful circumstances.</p> <p><b>2 Gibson and Tarrant 2010</b>            Four broad strategic approaches to improved resilience: resistance, reliability, redundancy and flexibility.</p> <p><b>3 Kobasa et al 1982</b>            HardiAttitudes are the ‘3 Cs’ of commitment, control and challenge. HardiOrganizations see their way of excelling as based on anticipating the direction of relevant environmental and social change and turning that change to advantage by helping to bring it about and improving life in the process. HardiOrganizations are not solely motivated by financial success. They are especially energised and excited by the conviction that participating in ongoing change is of potential environmental and social value and by helping to find that value through their efforts to turn the change to advantage.</p> <p><i>Measures:</i></p> <ul style="list-style-type: none"> <li>* Schedule of Life Events</li> <li>* Seriousness of Illness Survey</li> <li>* Self and Alienation From Work scales of the Alienation Test</li> <li>* External Locus of Control Scale</li> </ul> <p><b>Refer to organic vs. mechanistic corporate structures. Also consult OD theory/ management literature such as Schein’s (1990) model, Lewin’s (1958) model, action research and implementation theories.</b></p>	<p><b>1 UK Work Organisation Network.net</b>  <a href="http://www.ukwon.net/resilience/index.php">http://www.ukwon.net/resilience/index.php</a>            The Resilience Action Resource Kit (ARK) is an online questionnaire and learning resource: designed to help organisations assess their ability to survive and thrive in an environment in which radical change and uncertainty have become commonplace.</p> <p><b>2 Steelhenge</b>  <a href="http://www.steelhenge.co.uk/index.php">http://www.steelhenge.co.uk/index.php</a>            Crisis and incident management approach which includes business continuity, crisis management, emergency management. Focus on business continuity methods such as business impact analysis and risk assessment. Also provide scenario-based workshops to rehearse decision-making and actions during response and recovery phases following an incident.</p>



ORGANISATIONAL			
WHAT IS IT?		WHAT CAN WE DO?	
CATEGORY	DESCRIPTION	ACADEMIC	PRACTITIONER
<b>Systemic/ external environment</b>	Interventions that use risk management and assess risk by examining external factors and threats.	<b>Refer to various OD theories such as Schein’s model, Lewin’s model, action research and implementation theories.</b>	<b>1 Steelhenge</b> <a href="http://www.steelhenge.co.uk/index.php">http://www.steelhenge.co.uk/index.php</a> Crisis and incident management approach which includes business continuity, crisis management, emergency management. Focus on business continuity methods such as business impact analysis and risk assessment. Also provide scenario-based workshops to rehearse decision-making and actions during response and recovery phases following an incident.

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# Appendix: measures

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<b>Personality/ individual characteristics</b>  Resilience is seen as part of a person's personality or innate characteristics.	NEO Personality Inventory (NEO-PI-R) (Costa and McCrae 1992)	NEO-N6 scale is negatively keyed (vulnerability) scale: coping, problem-solving, ability, stress management and decisiveness. Ten items measure vulnerability, and emphasise coping with, and recovery from, adversity.
	Beck Depression Inventory (Beck et al 1961)	21-question multiple-choice self-report inventory, one of the most widely used instruments for measuring the severity of depression.
	PTSD-I (Watson et al 1991)	Measure of post-traumatic stress disorder by means of structured clinical interview.
	Pressure Management Indicator (PMI; Williams and Cooper 1996)	The PMI has been argued to be a reliable, comprehensive and substantially shorter inventory than its predecessor, the OSI (Williams and Cooper 1998; Williams et al 1999). PMI contains no measure for impression management or socially desirable responding. Transactional model of stress on which PMI and OSI based identifies three key elements of stress: process – effects, sources and individual differences – places appraisal at centre. PMI scales are categorised into the three core elements: stressors (sources of pressure), moderator variables (individual differences) and outcome variables (effects).
	Symptom Checklist-90-Revised (SCL-90-R) (Derogatis 1977)	90 items, measure of psychological distress.
	Connor and Davidson's (2003) CD-RISC scale	The Connor-Davidson Resilience scale. 25 items developed to be a general scale of resilience in adult populations with a bias towards coping with stress and adversity.

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
	Endler and Parker's (1990) CISS-SF scale	21 items focus on task, emotion and avoidance orientations when coping with stressful situations.
	Authentic Happiness Inventory (AHI; Christopher Peterson, University of Michigan, unpublished measure)	Designed to measure happiness; AHI is an updated measure of the Steen Happiness Index, which was reported as having good validity, when compared with other happiness measures (Seligman et al 2005).
	Depression Anxiety and Stress Scales (DASS- 21; Lovibond and Lovibond 1995)	Measures depressive, anxiety and stress symptoms.
	Acceptance and Action Questionnaire (AAQ; Hayes et al 2006)	Measures the individual's capacity to accept thoughts and feelings and to pursue valued actions.

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<b>Environment</b> Resilience is dependent on the social or environmental context.	The <b>Resilience Exercise (SRE;</b> Strumpfer 2000)	SRE is intended to tap normal-range <b>resilience</b> . It consists of six sentences which describe a diversity of adverse situations. Each story is structured in terms of four sets of questions. Total administration time is about 45 minutes. Disadvantage, as is the case with all projective measures, is the time-consuming process of scoring. Work remains to be done to confirm inter-scoring reliability, and then on test-retest reliability as well as construct validation, concurrent and predictive validation.

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<b>Person–environment interaction</b> Resilience is a result of the person’s personality combined with social and environmental factors.	Post-traumatic growth inventory (PTGI; Tedeschi and Calhoun 1996)	Instrument for assessing positive outcomes reported by persons who have experienced traumatic events is described. This 21-item scale includes factors of: new possibilities, relating to others, personal strength, spiritual change, and appreciation of life. Inventory is modestly related to optimism and extraversion.
	Personal Views Survey (3rd ed., rev, or PVS–III–R; Maddi and Khoshaba 2001)	18-item measures: control, commitment and challenge.
	Maddi and Khoshaba’s HardiSurvey III–R, 2001	HardiSurvey III–R, a 65-item questionnaire that measures the vulnerability factors of stress, strain and coping, and the resistance factors of hardy attitudes, hardy coping and hardy social support. The vulnerability and resistance factors are compared with each other in a wellness ratio. Test can be supplemented by the HardiSurvey IV, which adds information about the resistance factors of hardy relaxation and hardy physical activity.
	Bartone et al’s (1989) Dispositional Resilience Scale – DRS DRS scale	45 items based on three subscales of control, commitment and challenge.
	Friborg et al’s (2001) RSA scale	The Resilience Scale for Adults (RSA). 37 items and has a reported alpha of .80. The scale measures five factors of RES: (1) personal competence, (2) social competence, (3) family coherence, (4) social support, and (5) personal structure. RSA measures protective factors. Authors suggest that the RSA is a significant predictor of mental health and a useful tool for further research examining individual differences in stress tolerance (Hjemdal 2006). RSA consists of 33 items phrased in positive and negative sense relating to the various domains of resilience including personal strength, social competence, family cohesion and social resources
	The Adult Resilience Indicator (Visser 2007)	Indicator of presence or lack of resilience promoting and vulnerability factors. The scale consists of 82 items and measures eight factors: confidence and optimism, positive reinterpretation, facing adversity, social support, determination, negative rumination, religion and helplessness.
	The World Health Organization Quality of Life – BREF (WHOQOL-BREF; The WHOQOL Group 1998)	Measures four domains of quality of life (psychological health, physical health, social relationships and environment). The internal consistency of the WHOQOL-BREF scales of physical health, psychological health, social relationships and the environment have been reported to range from .66 to .84 (The WHOQOL Group 1998).
	General Health Questionnaire (GHQ-12; Goldberg 1978)	Six positive + six negative items: Able to concentrate, Lost much sleep, Playing a useful part, Capable of making decisions, Under stress, Could not overcome difficulties, Enjoy normal activities, Can face up to problems, Feeling unhappy and depressed, Losing confidence, Thinking of self as worthless, Feeling reasonably happy.

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<p><b>Job design</b></p> <p>Resilience can be developed by focusing on a person's role and how non-monetary rewards may contribute to reducing stress and motivate a person to be more engaged and productive in the organisation.</p>	<p>Positive Aspects of Deployment Scale (30 items); Demands of Military Service (Non-operational) (30 items); Demands of Military Service (Operational) (35 items)</p>	<p>Various measures used in military or peace-keeping deployment studies. Measures vary and are taken pre-, during and post-deployment. There are numerous measures; these are just a few. The deployment version of the Demands of Service Scale contained six stressor components – Workplace stressors, Operational stressors, Potentially traumatic stressors, Organisational support, Family concerns, and Ambiguity/Uncertainty in the workplace.</p>
	<p>Smithfield Resilience Assessment (SRA) – Practitioner Measure</p>	<p>The Smithfield Resilience Assessment is a diagnostic instrument which measures the resilience of individuals and of teams. It has been developed to help people to understand their resilience profile and to form the basis of resilience-building. The factors were established using a strong scientific methodology by Dr Joe Jordan of Smithfield Performance and Professor Sue Cartwright of Lancaster Business School.</p> <p>The profile is benchmarked against the working population and provides personal profiles and amalgamated team and/or departmental profiles. Summary of SRA Factors:</p> <p>Factor 1: Resilient Thinking – causal flexibility, self-confidence, optimism, outcome-oriented, proactive, success accelerators.</p> <p>Factor 2: Resilient Behaviour – assertiveness, anticipatory management, optimum management of personal resources.</p> <p>Factor 3: Work Engagement – intrinsic motivation, energising atmosphere, culture fit, career fit, enjoyment, fulfilment.</p> <p>Factor 4: Rest and Recovery – work–life balance, hours of work, switching off from work, sleeping rhythms.</p> <p>Factor 5: Healthy Lifestyle – staying fit and healthy</p>
	<p>Larry Mallak – measurement scales for organisational resilience (University of West Michigan)</p>	<p>Six factors explaining over half the instrument variance were found, including goal-directed solution-seeking, avoidance, critical understanding, role dependence, multiple source reliance and resource access. Acute-care hospitals in Michigan constituted the study setting.</p>

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<p><b>Leadership</b></p> <p>Focus on the role of leadership in resilience and how it may promote resilience.</p>	<p>N/A</p>	<p>N/A</p>

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<b>Organisational structure and culture</b>  Resilience interventions using processes and organisational culture to best equip organisations to face challenges.	Resilience measurement tool (McManus et al 2008)	Uses the perception of staff members to measure the resilience of organisations. In total, the survey contains 92 questions and takes between 20 and 30 minutes to complete. Enables analysis of organisational resilience by industry sector and examines resilience internally, allowing them to address gaps in awareness and silos between offices, departments and business units. Limitations: early stages of development and requires high level of staff participation to create accurate results. McManus et al (2008) use this definition to identify three dimensions of organisational resilience: situation awareness, management of keystone vulnerabilities and adaptive capacity.
	The resilience audit (Frost and Rowley 1994)	68-item self-report questionnaire (five-point, Likert type) was designed to cover six dimensions: <ol style="list-style-type: none"> <li>(1) Power structure. In a resilient social system, there is a clear structure and clear responsibilities, but the structure is not rigid. Structures are modifiable to accommodate changing needs of the system and its members.</li> <li>(2) Relationships. Members of the system show a high level of trust; they support and provide encouragement for each other, which enhances spontaneity and creativity.</li> <li>(3) Reality sense. The resilient social system has a self-image which is congruent with reality. This enables members to process the information available without embellishment or inappropriate filtering.</li> <li>(4) Attitude to change. There is a recognition of the need to change at an earlier stage than in other systems. The anxiety generated by this recognition is at lower levels.</li> <li>(5) Differentiation. Members see themselves as being part of the system, but retain their own sense of identity. They are neither isolated nor lost in 'groupthink'.</li> <li>(6) Communication. Open, clear, direct and frank; members are receptive and responsive to new ideas, there are low levels of rumour and gossip.</li> </ol> The audit can discriminate between organisations' overall resilience profile and different sections within the organisation. Subsequent interventions can therefore be highly focused. Resilience audit indicates measurable differences in the relational and transactional dimensions of organisations that constitute the psychological contract. Situational changes modify the dimensions of resilience.

INDIVIDUAL		
CATEGORY	SCALE	DESCRIPTION
<b>Systemic/external environment</b>  Interventions that use risk management and assess risk by examining external factors and threats.	N/A	N/A





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