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Resilience

Understanding the interdependence between individuals and communities

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Authors

Alisha R. Davies[1], Charlotte N.B. Grey[1], Lucia Homolova[1], Mark A. Bellis[2, 3]

Affiliations

1. Research and Evaluation Division, Knowledge Directorate, Public Health Wales
2. Policy and International Health Directorate, World Health Organization Collaborating Centre on Investment for Health and Well-being, Public Health Wales
3. Public Health Collaborating Unit, School of Health Sciences, Bangor University

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Research and Evaluation Division
Knowledge Directorate
Public Health Wales NHS Trust
Number 2 Capital Quarter
Tyndall Street
Cardiff, CF10 4BZ

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Supplementary Material can be accessed at the following link:
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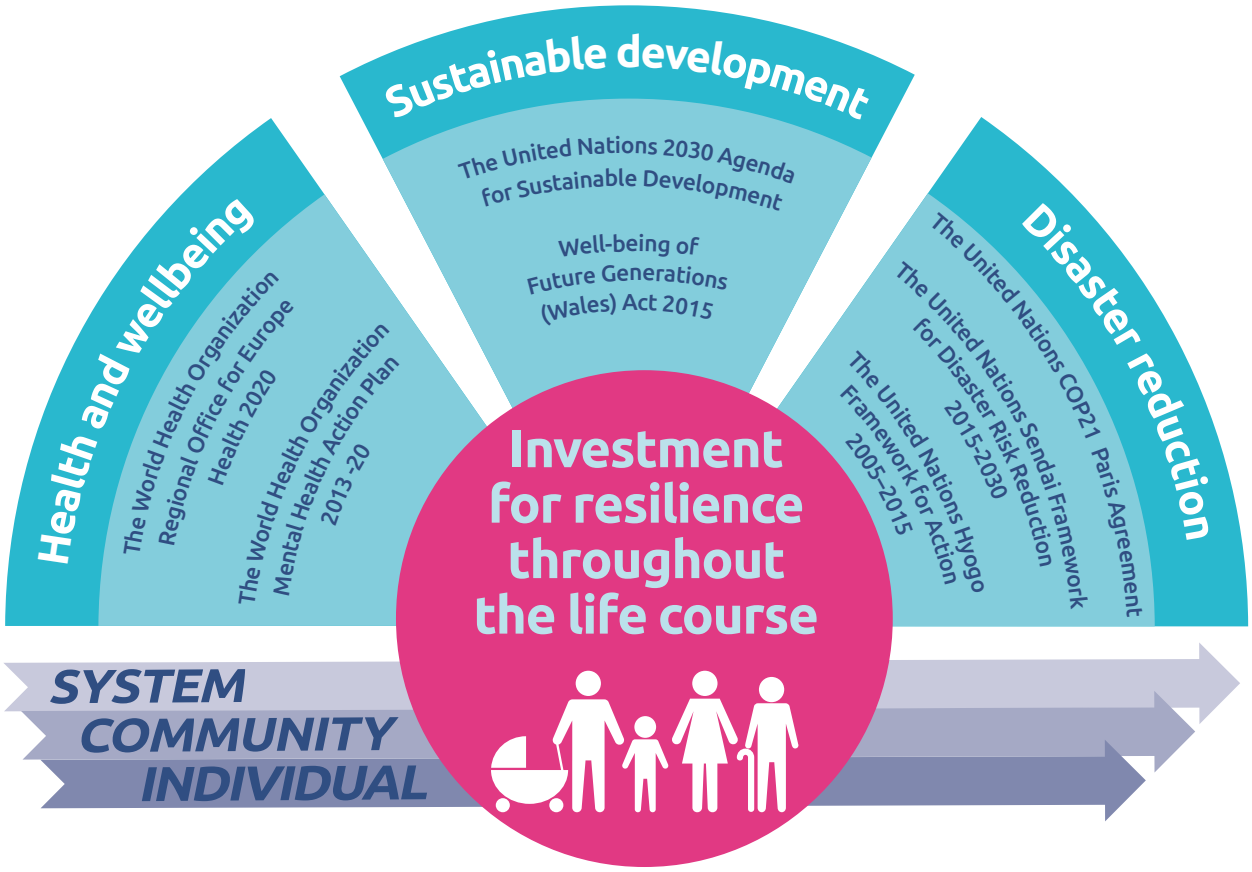
1. Introduction

Being resilient describes the ability of an individual, a community, or a system to withstand stress and challenges (1). It encompasses both the ability to adapt and survive adverse circumstances (such as environmental, societal, or economic shocks), or to cope and thrive given the challenges of everyday life (1). At an individual level, resilience has been linked to mental and physical health across the life course (2,3) and the benefits of a resilient population has been suggested to extend beyond health to wider societal and economic outcomes (4).

Better equipping individuals, communities and systems to respond and positively adapt to adversity and change (5) is a priority for population health in Wales and internationally (6). The links between resilience and health throughout the life course have been recognised in many national and international policies addressing sustainable societies and disaster recovery (Figure 1; Table A1, Appendix A - see Supplementary Material). Strengthening resilience across cities and communities is one of the United Nations' *Sustainable Development Goals* (7); and the need to measure and build community resilience and develop supportive environments is a core component of the World Health Organization's (WHO) *Health 2020*, a European framework to support action across government and society to improve health and wellbeing (6,8,9). Within Wales, resilience is one of the goals of the *Well-being of Future Generations (Wales) Act 2015* (10), emphasising the importance of achieving a socially, economically, and ecologically resilient Wales.

Figure 1. National and international policies and frameworks with an emphasis on resilience at an individual, community, or system level (Table A1, Appendix A – see Supplementary Material).



Public health has a central role in advocating and pursuing action to strengthen resilience (11), a significant challenge given its complexity. Resilience involves individual factors interacting with community determinants of resilience (e.g. local environment, community cohesion, social capital, or empowerment), and underlying structural or system level conditions which are often also the drivers of health inequities (6). Enhancing resilience can draw on empowerment processes that strengthen individual and collective control which are key drivers for health and health equity (12). Creating a supportive and enabling environment for resilience at each level without eroding existing supportive mechanisms is critical to population health (6).

This report supports action by bringing together evidence and understanding of resilience at an individual and community level and the interdependence between them (Section 3), how to measure change in resilience (Section 4), and provides an overview of programmes which seek to strengthen resilience at an individual and community level (Section 5). Lastly, the report closes with a summary of the key messages recognising that within a long-term, public health approach, enhancing resilience must be seen to complement, rather than replace, action to primarily prevent the causes of inequalities and adversity (13) (Section 6).

2. About this report

This report seeks to bring together the evidence from published literature on the interdependence between individual and community resilience, and offers an overview of existing programmes to strengthen resilience. This report has been informed by a comprehensive search of the academic and grey literature, published in the English language over 10 years (2007-17). Only sources with transparent and robust methodology or produced by a recognised expert organisation were included (full details are provided in Appendix B – see Supplementary Material). Due to the extent of the literature, the review of approaches to strengthen resilience at individual level (Section 5) was restricted to systematic reviews, meta-analyses, and evidence reviews. However, due to the sparsity of high-level review evidence for community resilience, evidence from wider, reliable sources was included.

This report focuses on universal prevention approaches to improve resilience at population level, and recognises that building resilience in vulnerable or marginalised groups who have experienced trauma require more tailored and targeted support. A systems-level approach to resilience is acknowledged but not considered in depth in this report given the supportive policy and legislative context for resilience through the *Well-being of Future Generations (Wales) Act 2015* (10).

Given the complexity of resilience as a construct (Section 3) and ascertaining change (Section 4), identifying programmes with a strong empirical evidence-base and demonstrable change in resilience was challenging (Section 5). Available systematic reviews concluded that the primary level evidence is often based on weak methodological quality, with short-term follow up periods, and heterogeneity of intervention design. Also, a lack of consensus on how resilience is defined, measured, coinciding with limited detail of the specific components of an intervention, makes it challenging to identify studies which demonstrate a measurable change in resilience linked to a defined intervention. The majority of interventions focus on enhancing and/or reporting changes in protective factors for resilience (e.g. health and wellbeing outcomes) rather than resilience specifically. These challenges and limitations should be taken into account when considering the evidence presented in this report.

3. Understanding individual and community resilience and their interaction

3.1 Defining resilience

There are many different definitions of resilience in the international literature, but overall, **resilience is commonly referred to as an ability to draw on strengths and assets to cope or thrive in adversity (13,14) – be that a severe or acute life event or the chronic stresses of everyday life** (15–18) (Box 1).

Box 1. Key international definitions of resilience

WHO Health 2020 (9) **defines resilience as:**

"The dynamic process of adapting well and responding individually or collectively in the face of challenging circumstances, economic crisis, psychological stress, trauma, tragedy, threats, and other significant sources of stress. It can be described as an ability to withstand, to cope or to recover from the effects of such circumstances and the process of identifying assets and enabling factors. Health 2020 places particular emphasis on the importance of creating resilient communities and the idea of helping people to help themselves. The term resilient communities is also frequently used in the context of disaster risk reduction (such as flooding) and the importance of creating appropriate infrastructures, systems and decision-making processes."

The United Nations Hyogo Framework for Action 2005-15 (19) **and Sendai Framework for Disaster Risk Reduction 2015-30** (20) **define resilience as:**

"The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions."

3.2 What is **individual** resilience?

Resilience is a **modifiable** set of qualities, which includes both **intrinsic** (e.g. individual coping strategies which can be biological, psychological, or behavioural processes) and **extrinsic** factors (e.g. social networks, healthy relationships extending across families, schools and communities, and social and cultural links) (4,15,21–24). Rather than one single element being of more importance, it is this combination of internal and external assets which are needed for resilience (5).

An individual's ability to be resilient can be represented across a range of resilient states and capacities, which can be **reactive** (where the individual absorbs the impact of the adversity to maintain the status quo) or **proactive** (where the individual adapts, anticipates, or transforms to cope or even thrive with the adversity) (Box 2) (21,25–28). A **resilient response** does not always lead to the same outcome, but can result in (i) bouncing back to a pre-adversity state (27) (ii) thriving, or doing better than expected following adversity, or (iii) doing well enough given the circumstances (15).

An important consideration is that initial signs of coping (or positive adaptation) may not be indicative of a positive long-term response, termed **apparent resilience** (28). Examples include children who have to mature earlier due to sudden changes in life circumstances, such as adopting a care-giver role, or individuals reacting to the atrocities of war through emotional numbness or lack of empathy (28).

Box 2. Types of individual resilience capacity

REACTIVE

Absorptive: the magnitude of adversity that can be absorbed, and the individual or community remain within a given state/effectively cope by drawing on skills, assets, and resources (1,21)

PROACTIVE

Adaptive: the degree to which the individual is capable of self-organisation (adjusting/capacity to heal, recover and return to functioning quickly and fully) (1,21)

Anticipatory: the degree to which the individual can build capacity for learning and adaptation (an ability to adapt, change course, and find a new way to live and go forward) (1,21)

Transformational: the ability for individuals to reassess their role, identity and sources of security in a manner that is balanced and leads to successful adaptation (1,21)

3.2.1 Factors contributing to individual resilience

Resilience is dynamic and can change over time reflecting the combination of intrinsic and extrinsic factors and circumstances throughout the life course (3,21–23,29,30). Resilience is shaped by life experiences (4,31), for example, close relationships and bonds with parents or other trusted adults in early years have been shown to be positively associated with resilience in the workplace in adulthood (2,4,32–35).

Positive relationships are important at all ages, and active involvement contributes to forming social networks and increased community cohesion (29). People involved in positive social networks tend to receive higher levels of social support and, as such, involvement in family and the community is an important source of resilience at all life stages (3), but particularly during older age (22,29).

Protective factors contributing towards individual resilience extend beyond the individual to the family and community context (28). The relationship between risk and protective factors is complex and dynamic (36), but resilience is likely to be enhanced when protective factors are strengthened at individual, family and community, and system levels (14,23,37,38). Recognised attributes which contribute towards individual resilience are collated into three core, overlapping elements:

(i) **wellbeing** (feeling good; functioning well),
(ii) **mental capital** (psychological coping strategies) and
(iii) **social capital** (29,37,39) (Figure 2).

Figure 2. Assets contributing to individual resilience (adapted from MIND (2013) (39))

Wellbeing comprises two elements, **feeling good** (mental wellbeing) and **functioning well** (physical wellbeing; including maintaining good health and healthy lifestyle) (40). Wellbeing and mental capital are closely linked and affect each other, and can be enhanced by positive behaviour (3,29,37,41). Wellbeing can be changed as a result of learning or experiences, and affected by the social and physical environment (37,42).

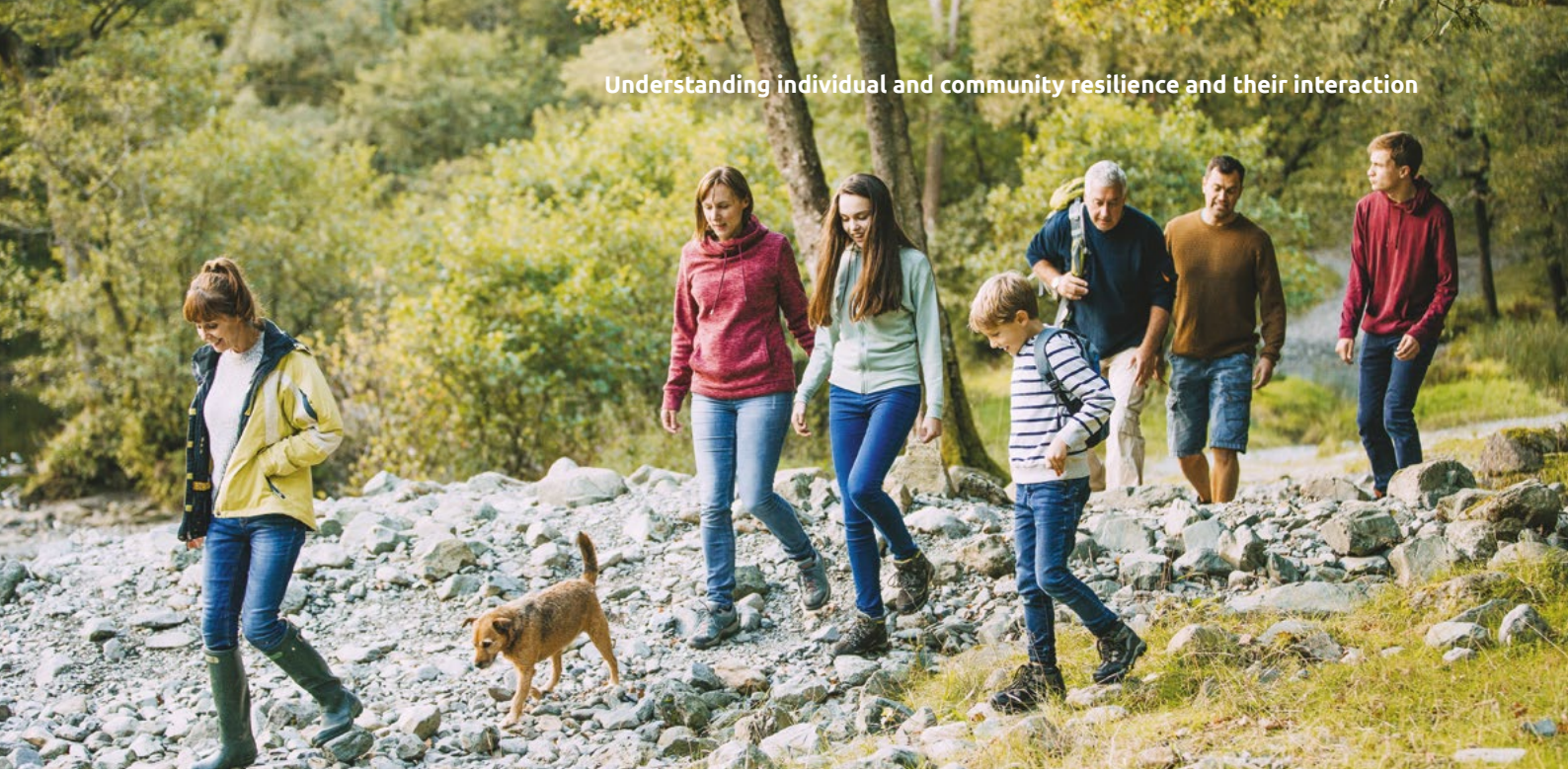
Mental capital confers considerable protection, and includes **psychological factors** associated with **cognitive, social and emotional skills** (e.g. emotion regulation), affecting an individual's behaviour (1,3,23,37,43). Other contributions include promoting personal resources and coping skills (4), flexible and efficient learning, and emotional literacy and intelligence (37), a sense of security, good self-esteem (and self-image), sense of self-efficacy (sense of control over our lives), and problem-solving ability (15,23) (Table A2, Appendix A - see Supplementary Material).

Social capital (individual level) reflects an individual's relationships and connections with others, including:

- **Positive relationships**, along with a sense of meaning and accomplishment, are of real importance to resilience and a lack of positive relationships can lead to vulnerability (29).
- **Family cohesion**, warm and emotionally responsive care-giving, and parent-child relationships are important for the development of emotional and cognitive regulation and secure attachment (3,41).
- **Social relationships** and engagement in community life are important for individual resilience and can affect mental wellbeing (37). Relationships give people a profound sense of emotional security (15). Social support may be linked with increased use of active coping mechanisms such as problem-solving, and increased feelings of belonging and solidarity encouraging healthy coping behaviours, such as emotional regulation (44).
- **Community support** such as peer networks, and supportive environments such as schools are assets for resilience (45).

Wellbeing and mental capital are closely linked and can be enhanced by positive behaviour (e.g. pursuing valued goals, healthy lifestyle and physical wellbeing, pro-social behaviour) (26). **Wellbeing and social capital are also closely linked,** as good wellbeing is a dynamic state enabling individuals to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community - all activities enhancing resilience (26,28).

Taking the wider context into consideration is essential when determining how to strengthen resilience. For example, socio-economic inequalities in health and wellbeing are evident in Wales and further afield, affecting an individual's wellbeing and mental capital (46,47). The lack of basic social and material resources needed to support building social (3) and mental capital (48), both key attributes of resilience, can have a detrimental impact on resilience.



3.2.2 Resilience across the life course

Resilience is not fixed at birth but can be learned and developed over a life course (21,49). Opportunities for a healthy life are closely linked to the conditions in which people are born, grow, work and age (50). Individual resilience may change over time as a function of development and interaction with the micro-social environments of family, school, and neighbourhood and the macro-level of social, economic, and political processes (26). Some people are more vulnerable because of circumstances both making them more prone to experiencing adversity and influencing their access to and use of resilience resources, including those who are socially isolated, of younger and older age, those living in rural areas, or with long-term health conditions (50). Education and learning are important for longer-term resilience and is closely associated with health and wellbeing throughout life, and enabling employment opportunities (50) (Table A2, Appendix A – see Supplementary Material, illustrating examples of risk and protective factors important for developing resilience at different stages along the life course).

Childhood

Early encounters with risk can have a profound impact on later adaptation, where the experience of dealing with adversity in childhood may set into motion a trajectory of resilience or maladjustment (14). The impact of exposure to adverse childhood experiences (ACEs) in early life can be long-lasting, where the psychological stressors in childhood result in altered physiology resulting in lifelong vulnerability to disease - a process referred to as biological embedding (51,52). Children also undergo significant periods of development and challenges during the transition into adulthood (37,53), relying on adults as providers of support (31).

Building resilience in the early years is essential to overcoming adversity and change in childhood and later life (2,23,32). Emotional wellbeing as a child is an important determinant of adult wellbeing (54). A supportive and loving relationship and secure attachment with a parent, family member, or trusted adult are of significant importance to building resilience in childhood and adolescence, supporting good psychological functioning, healthy development, and protection against adversity (2,3,14,29,32,33,44,55). In adolescence, peer relationships become increasingly important (14,29). Children cope better if they are adaptive learners and problem-solvers, engage with other people, and have competence that they themselves value, and feelings of being valued by society (29). Resilience has been shown to protect against poor childhood health, educational absenteeism (33), and mental ill-health in later life (2). Some of these characteristics can be taught, and building resilience in children over the longer-term can contribute towards resilient communities (4). An overview of programmes to build resilience in children is provided in Section 5.1.

Adulthood

The working age (18-65 years) population tends to be the age where life's most significant events occur (employment, unemployment, marriage, divorce, property-ownership, parenthood, grand-parenthood, children leaving home, disease onset, the death of a loved one), representing multiple opportunities which can challenge and develop resilience in individuals (14).

Adult coping and resilience skills are developed in childhood, but can be developed and strengthened through adulthood and into older age (56). For example, positive relationships with peers, mentors and supportive partners can have resilience-promoting effects in adulthood (3,14). An overview of programmes to build resilience in adults is provided in Section 5.2.

Older adulthood

Older adults face challenges such as poorer physical health including illness, difficulties in activities of daily life, physical frailty, and sensory loss; and socioeconomic stresses including widowhood, that can contribute to social isolation and decline in mental wellbeing (56).

Resilience for older people appears to be positively associated with better health, life satisfaction, quality of life and longevity, and remaining socially engaged through a social network of work colleagues, family and friends (31,57). Remaining socially engaged and having an active role within the community can have a positive impact on health and wellbeing, being protective against physical as well as cognitive decline in older persons (29).

Older adults are more likely to weather adversity with fewer psychological costs than younger adults, which may be attributed in part to life experience (58). Resilience in older populations can be fostered or strengthened through building support networks, having a role in society, income/wealth, good physical and mental health, and independence (31). Personal relationships and being part of a community (social support) are especially critical (4). Social relationships enable continuity of self in older people, and also prevent or minimise stigmatisation (4). Longitudinal studies show that good social support networks have been reported consistently in research as of the main resilience protective factors in later age (29). An overview of programmes to build resilience in older adulthood is provided in Section 5.3.

3.3 What is **community** resilience?

A community can be identified as a geographical area, formal structure (e.g. community organisations, schools) or informal context (e.g. neighbourhood, cultural or support groups, online groups) (57,59) (Box 3). People may identify with more than one community, and given the variations in the definition of community, identifying and measuring community resilience is challenging (4).

Box 3. Defining a community

A community can be geographical e.g. a local neighbourhood, village, town, city, valley, or locality (4,59–61). Increasingly technological communication and transportation have arguably freed social bonds from the bounds of specific geographic location.

Community can also be defined by a **feeling of belonging** to a community structure or group - such as a community of **identity** (ethnicity or language, religion or belief, school, local industry)**, culture** (for example shared history, speakers of same languages), or **special interest** (such as people with diabetes), **commitment or concern** (4,60,61)**.**

3.3.1 Factors contributing to community resilience

A resilient community consists of the population within it and the wider structures and systems that the community is part of. These different factors are collectively referred to as **community capitals** (Box 4) and include both **human (social) assets** (e.g. a cohesive and connected population), and **structural assets** (e.g. the natural and physical environment), and being well-connected, both within and to other outside community groups (23,28,60).

Box 4. Factors contributing to community resilience

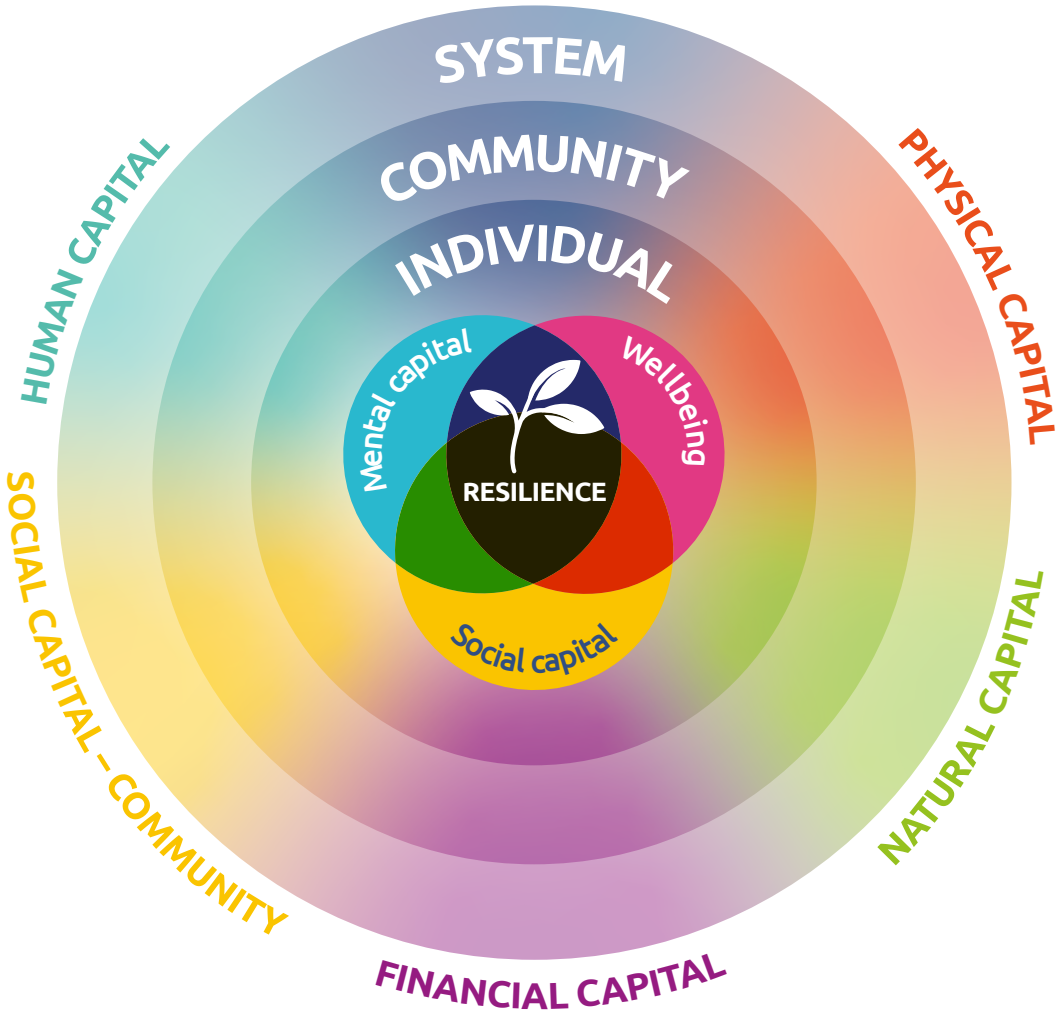
1. **Human capital:** e.g. innate and acquired personal attributes including skills and education, capacity and local knowledge (60).
2. **Social capital (community level):** e.g. the extent of social networks and connections within a community, effectiveness of local community and voluntary organisations (support, participation), and resources of public, private and third sector organisations that are available to support a community (13,21,29,60,62). Social capital includes different levels of social relationships: the **bonds** between people in their circle of friends, clubs or groups; the **bridges** that connect us to other communities or work colleagues from where we get new ideas or information; and the **links** we have with those that have power to influence change (26,50).

   Social capital incorporates **cultural capital**: e.g. worldview, values, norms, sense of identity, and **political capital:** e.g. access to power and resources, and power brokers (60).
3. **Physical/built capital**: e.g. physical infrastructure including homes and roads, access to amenities (60).
4. **Natural/environmental capital**: e.g. access to green and blue space, availability and use of natural resources (60,62).
5. **Financial or economic capital:** e.g. income, wealth, access to resources, civic and social enterprises (60,62).

Improving each type of capital has the potential to improve the resilience of communities, for example, provision of social welfare can strengthen financial capital, increasing the resilience of communities to economic shocks and mitigate the detrimental impact of economic uncertainty on mental wellbeing (human capital) (26). Community resources are also linked to individual-level resources, so that strengthening resilience at community level is critical for reducing loss (e.g. of resources) at individual level (59).

As with individual resilience, no single factor makes a community resilient (18), but rather it is a dynamic and complex relationship across multiple factors that provides collective wellbeing (Figure 3). **Human capital** contributes to community resilience through individual's skills and attributes that contribute to the involvement in the community (**social capital**) and collective ability to earn a living (**financial capital**), for example, education, work skills, knowledge, and health (60). **Social capital** reflects a community's people, networks, and organisations that can effectively mobilise people to action through reciprocal, supportive, trusting relationships, form new associations, and make joint decisions; and is supported by infrastructure (**physical capital**) and availability of services (e.g. employment, health and social services) and economic resources and a strong financial system (**financial capital**), as well as capacity to influence decision-makers (**political capital)** (21,59) and a community being able to draw on collective experiences and shared values (**cultural capital)**. The community's relationship with **natural capital** supports resilience through access to resources that support work (**financial capital**), basic necessities such as food, air, and water, as well as space to enable **social capital**. Section 5.4 provides more detail on approaches to building community resilience.

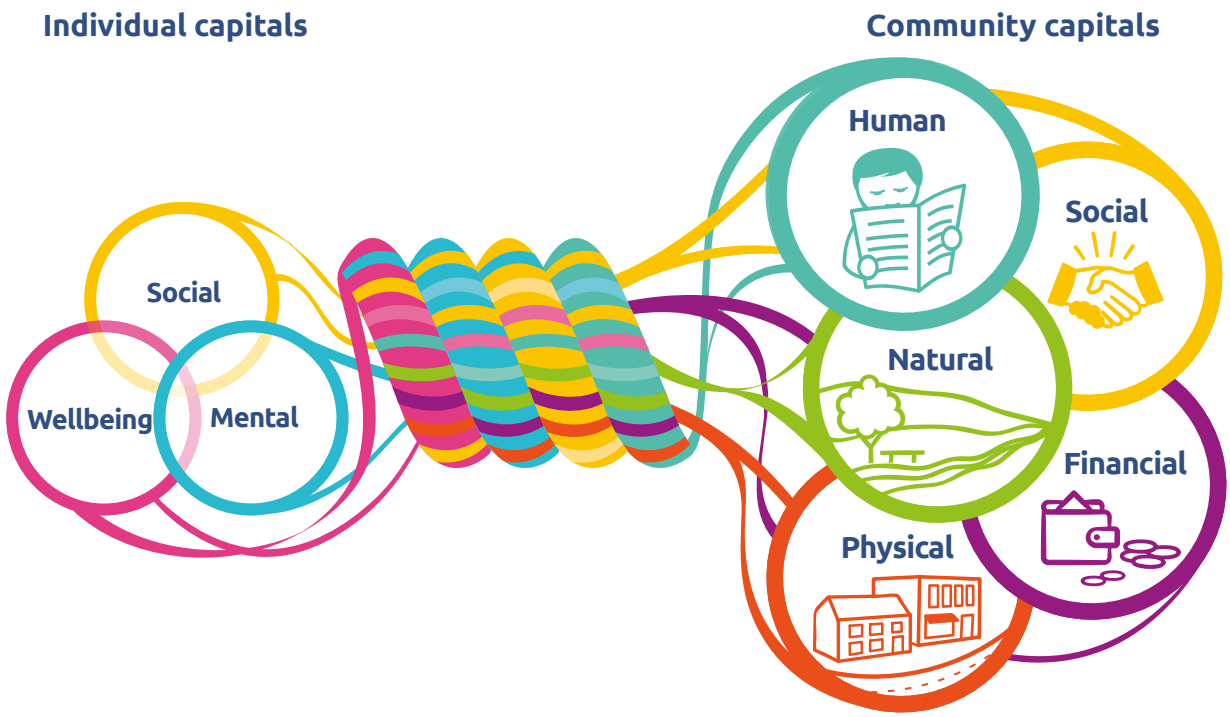
Figure 3. Resilience from individuals to communities – the interplay across capitals



3.4 How do individual and community resilience interact?

The literature suggests that promoting the resilience of individuals can help contribute to building stronger networks and communities (18,29,44); and that promoting community assets can enable or enhance individual resilience (13,26,44). But care is needed to not oversimplify a complex dynamic between individual and communities, and between underlying capitals. Differences in the levels of wellbeing, social capital, and mental capital at an individual and community level, inequalities in the availability, and access to, supportive environments for building resilience, and the complexity of dynamic relationships between individuals and communities, all need to be considered (Figure 4).

Figure 4. Intertwined dimensions of individual and community resilience



Supporting the wellbeing, social capital, and mental capital of individuals is key to strengthening individual resilience and will support the collective human capital, contributing towards a resilient community (3,18). But, the components important for community resilience, such as social connections, physical space, natural environment and wider financial and economic context, can influence the wellbeing, social capital, and mental capital of the individuals within that community, thus contributing to individual resilience. Supportive environments are a prerequisite for strengthening individual and community resilience (13).

An important factor for both individual and community resilience is the formal and informal support, participation and networks - collectively termed **social capital** (13,29). Social capital describes relationships between individuals and groups, and can be influenced by the surrounding natural and built environment (community capitals), for example, a lack of safe, accessible spaces may limit the ability to come together and connect with others. High levels of social capital are an indicator for the wellbeing of a community (3) - having a broad and diverse set of networks and relationships is good for individual wellbeing and life chances but is also good for the community as a whole, irrespective of whether that community is place-based or based on a shared common interest or identity. Empowerment is born from collaboration and collective strengths (social capital) (59), and this individual and collective control over actions and decisions is health promoting (63).

But not everyone may benefit from a focus on social capital - the capacity to build relationships with others is not the same across all individuals, some may feel less empowerment, lacking in

confidence or trust to engage with others (26). Also, the benefits of social capital may not extend to all individuals within a community, especially if social networks are divisive and detrimental to community cohesion.

In another example, adversity can negatively impact one form of capital (e.g. flooding can destroy physical capital) but enhance another (e.g. resulting in financial capital in the form of government aid) (60). Yet, at an individual level, the most vulnerable may not benefit as a result of a significant challenge to mental capital. When communities have access to the different community capitals, and community members use these optimally, there is the potential for them to be mutually supportive (60).

Understanding the effectiveness of community resilience interventions should take into consideration differences between communities, the impact on individuals, and potential disparity in outcomes across individuals or groups *within* a community, particularly those who are more vulnerable (3,6,26,44,60). Different communities may be more or less resilient, and therefore more or less capable of supporting and enhancing resilience in individuals (44). Specific cultures, religions, organisations, communities and societies, each of which may be more or less resilient in their own right and therefore, more or less capable of supporting the individual (44).

As for individual resilience, community resilience is not a binary fixed state, but rather a dynamic process and influenced by time and circumstances (3,14,38,50,60). A community with a diverse source of capitals including individuals who have a good level of physical, social, and economic wellbeing (human capital), strong networks (social capital), and supportive physical, environmental, and financial capitals have the ability to draw on a wider range of assets in time of uncertainty to better adjust to adversities (i.e. are more resilient) (26,62). To build resilience requires a multi-level approach, understand the protective factors across and within individuals and communities, the interactions between them, and the wider system level influences.

Key messages

- Resilience is commonly referred to as an ability to draw on strengths and assets to cope or thrive in adversity.
- Individual resilience is a modifiable set of qualities which can change over time, shaped by life experiences. Attributes contributing towards individual resilience can be collated into three overlapping elements (i) individual wellbeing (feeling good; functioning well), (ii) mental capital (psychological coping strategies) and (iii) social capital.
- The characteristics of a resilient community include a cohesive and connected population, ability to utilise available assets. As in individual resilience, a combination of different resources is needed to support community resilience including human capital, social capital, physical capital, natural capital, and financial capital.
- Resilient individuals contribute towards building resilient communities, and resilient communities are important for supporting the wellbeing, mental capital, and social capital contributing to individual resilience. But the capacity for resilience is not distributed equally across all individuals and communities, and the benefits of strengthening resilience may not extend to all individuals within a community (e.g. if social networks are divisive and detrimental to community cohesion).

4. Ascertaining change in resilience: common approaches

With increasing emphasis on building resilience, there is a need to better understand how to demonstrate a change in resilience at individual and community level. Measuring resilience would help to identify where support may be needed, the factors or processes which contribute to change, and support evaluation of the impact of interventions to strengthen resilience.

However, measuring and ascertaining a change in resilience is challenging for many reasons including, but not limited to, the following:

- Lack of a single definition for resilience, the complexity of the different elements of resilience as a construct, and that means it is difficult to provide an accurate measure of resilience (6).
- The lack of a common definition of success. For example, is resilience - never developing symptoms that reflect an adverse response to stress or adversity, is it bouncing back to a similar state as before the challenge or adversity, or is it being able to successfully move forwards overcoming adversity (6,38).
- Resilience is not a fixed state and nor is it as simple as a binary construct, so particularly challenging to measure change over time (15).
- Community resilience is more difficult to conceptualise in ways that can be directly measured. Defining a community is challenging (Section 3.3) as people may identify as belonging to more than one community, and community boundaries may be blurred, changeable, non-spatial, or nested within larger communities (17,64).
- An overarching measure of community resilience will not capture differences in resilience across diverse populations (particularly marginalised groups) e.g. socio-economic background; race, ethnicity and culture; and gender (23,24,43). Therefore it is challenging to understand the impact of approaches to support resilience within and between population groups.
- There is a need to promote the use of available and well-tested measurement frameworks to help improve the consistency across measures (6).

4.1 Measuring individual resilience

There is no gold standard measurement for resilience at an individual level. **Resilience is commonly measured through many different biological and mental health and wellbeing indicators associated with improvements in resilience**. Such proxy measures include biomarkers (6,14,15), neurobiology, objective resilience or wellbeing outcomes (e.g. educational attainment, levels of competent functioning, sense of wellbeing e.g. self-efficacy, sense of hope, belonging, and purpose) (4,15,26,59), mental wellbeing (29), or mental health (presence of anxiety, depression) (65). However, such proxy measures do not capture individual resilience as a whole i.e. social capital, mental capital, and wellbeing (Table C1, Appendix C - see Supplementary Material).

There are a number of subjective resilience scales which can be used to measure multiple factors contributing to resilience, including personal characteristics, attributes, attitudes, relationships, behaviours, and personal resources. Many standardised scales in adults and children are available (Table C1, Appendix C - see Supplementary Material) but each scale reflects different definitions of resilience (66). Although there is no gold standard, all of the scales contain different elements of psychometric information (23,28) and attempt to measure whether there are resilience types or behavioural characteristics that explain much of the variance in outcomes. But the scales cannot fully capture the complex interaction between individual risk and outcome and the wider environment (23). A further consideration is that the cultural appropriateness of any scale should also be recognised; as values, expectations and norms held in one culture may not be universally applicable (23).

4.2 Measuring community resilience

Measuring community resilience needs to consider a wide range of factors that may promote, represent or threaten resilience in a community, and be able to differentiate levels of resilience within community members (6,26,28,41). Approaches to measuring community resilience include collating population level data (e.g. objective indicators such as civic participation, social support, or population wellness), or aggregating specifically collected individual data (e.g. individual level sense of belonging or community, social networks, mental wellbeing) (26,64). But that this will introduce an atomistic (or individualistic) fallacy - incorrectly assuming that group level processes can be identified purely from individual level data (23), hiding what would be rich variability across communities (26).

Qualitative methodology and participatory based approaches add a very valuable dimension to community resilience measurement tools, because such methods enable communities to identify priorities important to them, identify vulnerabilities and assets in their local context, and can better capture the wider social connections between individual and community, and the impact of the social determinants of health (6).

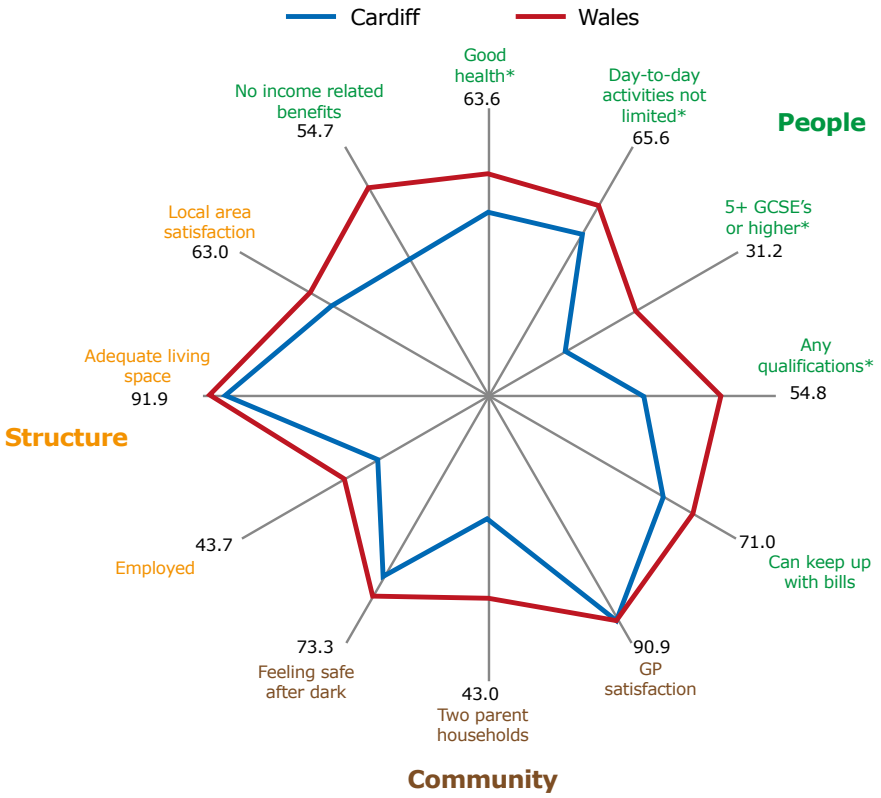
Specific community subjective resilience scales have been developed for adults (in response to disasters). For example, the Conjoint Community Resiliency Assessment Measure (CCRAM) tool measures five dimensions: leadership, collective efficacy, preparedness, place attachment, and social trust. But, in a similar way to individual resilience scales, this community resilience scale and others attempt to measure intrinsic and extrinsic factors thought to contribute to resilience (Table C3, Appendix C – see Supplementary Material) (23,64).

An alternative is the community resilience assessment (CRA) which applies asset-mapping exercises to measure **place** (geographic) resilience and investigate different environmental, social, economic, physical, institutional elements (e.g. **assets** related to community capitals), and health and wellbeing and other factors involved in individual resilience (e.g. sense of belonging) (6,26).

Asset-mapping involves building an inventory of the strengths and contributions of the people who make up a community and the interconnections among them, and is becoming more commonly applied to community resilience (6,61,64). For example, Public Health Wales developed the **Health Asset Reporting Tool** (67) mapping twelve assets for health across people, community and structure. Using routinely collected data at small geographical areas, the data is then compared

to the national average to inform local action (population between 5,000 and 15,000) to support health inform public health action (16,68) (Figure 5).

Figure 5. Health Asset Indicators (67) for Cardiff compared to Wales, across different health asset indicators components (expressed as percentage)



*These percentages are directly age-standardised using aggregated weightings from the 2013 European Standard Population

Key messages

- The complexity of resilience as a construct at an individual and community level, alongside considerations of differentiation across population groups and time, makes measuring resilience at a population level challenging.
- There are a number of validated tools for specific intervention studies, but there is no gold standard making it harder to determine change over time, and to compare the effectiveness of interventions.
- Given the complexity of interactions between factors for community resilience, within and between individuals, a combination of qualitative and quantitative approaches may be beneficial to capture resilience across different groups.
- Creation of a set of indicators or comprehensive measurement framework for community resilience, that consider the multilayered interactions, as well as health and social outcomes, may be possible by further development of the asset-mapping methods.

5. How do we build individual and community resilience?

In recent years, resilience interventions have expanded beyond disaster and trauma-related contexts (14,69) towards strengthening resilience to promote health and wellbeing through paying more attention to protective factors, and focusing on building capacities of individuals and communities to respond, manage, and adjust quicker should future adversity occur (4). Pathways to strengthening resilience can be achieved through interventions at multiple levels (e.g. individual, community, system), with a focus on strengthening **modifiable** resilience protective factors (70).

This section provides an overview of evidence-based universal approaches to improve resilience at the population level across the life course. Whilst universal approaches are important in strengthening resilience capacity and protective factors, it is also crucial to recognise that universal approaches alone may not always be sufficient to meet the needs of vulnerable, marginalised or disadvantaged groups, who may require more targeted and specialist interventions.

Existing resilience promoting programmes can vary greatly in their delivery mode, duration, population targeted, outcomes, and impacts measured (38,70). Currently, there is no consensus on defined standards or guidelines for an effective resilience programme, nor how best to assess change in resilience (70,71) (Section 4). The evidence presented in this section draws on programmes and interventions, which either directly measure a change in resilience through validated resilience scales, or may indirectly improve resilience through targeting protective factors associated with increased resilience, such as health and wellbeing (e.g. good health, healthy lifestyle, good mental health, health promotion).

5.1 Strengthening resilience in children

Resilience in children can be a complex interplay between vulnerability, risks, and protective factors (29,43). Protective factors routinely identified as being important for developing childhood resilience, include establishing a healthy attachment, presence of a trusted adult, positive adult-child relationship and good caregiving, supportive parenting and family environment, emotional regulation skills, self-awareness, and the capacity for a mastery motivation system that drives the individual to learn, grow and adapt to their environment (15,34,43) (Section 3.2.2).

Providing a **healthy context for development,** particularly healthy family environments, supports the child's ability to develop skills to adapt and cope with change in later life, and gain the resources needed to function well, acting as a natural protective system across a child's development (15). Recent studies have demonstrated that gaining resilience resources in childhood can also help mitigate the negative impacts associated with vulnerability, such as ACEs (2,32,34), with strong relationship existing between childhood and adult resilience (2). Early interventions with a focus on enhancing positive child development, health and wellbeing are therefore critical to strengthening resilience across the life course.

The key features identified in this review for building resilience amongst children and young people are (i) building caring relationships, (ii) promotion of good health, (iii) strengthening mental capital, and (iv) community-based approaches (Table 1).

Table 1. Types of evidence-based approaches to building children's resilience

	Wellbeing	Social capital	Mental capital
Building caring relationships (Section 5.1.1) • Parenting programmes • Strengthening wider relationships		✓	
Health and wellbeing promotion (Section 5.1.2) • Promoting physical health • Promoting mental wellbeing	✓		✓
Strengthening mental capital (Section 5.1.3) • Building self-esteem, social and emotional skills, problem-solving, coping skills, adaptive cognitive approaches			✓
Community-based approaches (Section 5.1.4) • Whole school approach • Whole-system approaches (family, school and community) • Enhancing participation through community engagement	✓	✓	✓

5.1.1 Building caring relationships

Establishing an early, positive relationship with a trusted and competent adult is needed to support childhood resilience - laying good foundations for health and wellbeing, and supporting the development of resilience skills, such as learning to regulate emotions and enhancing adaptive coping style, building problem-solving abilities, engaging positively with other people, and ensuring that children themselves value and are valued by society (29,43). Connectedness, and building and maintaining supportive relationships, can also help moderate the negative impacts associated with early vulnerability and ACEs on mental ill-health in later life (2,32,34,72). Interventions to support the development of trusted relationships include supporting parenting programmes and building wider community relationships (described below and in Section 5.1.4).

Parenting programmes

Establishing a close, caring relationship with a trusted adult (e.g. positive parent-child relationship within the First 1000 Days of life) lays important foundations for the further development of resilience protective factors in children, and achieving positive health and wider outcomes in later life (14,34). It is one of the most significant predictors of a child's emotional, social, and behavioural wellbeing (56) (Section 3.2.2). Existing health economic studies, indicate that early child development interventions demonstrate good value for money overall (73).

Programmes supporting positive parenting practices help to build parental knowledge and skills that are needed to foster healthy attachment and positive parent-child relationships (34,74), and they can be provided universally or targeted to at-risk groups. Many parenting interventions have been shown to improve parenting practices and enhanced the child's emotional and cognitive development (particularly those focusing on early years), and offer potential cost-savings in the long-term (34,74,75). Examples implemented in Wales for more vulnerable families include the *Incredible Years (IY)* or *Family Nurse Partnership* (34,76).

An example of a parenting programme targeted at promoting resilience in highly vulnerable young people includes the *Resourceful Adolescents Program for Parents* (RAP-P), which reports improvements in parental self-esteem, better management of negative emotional reactions to their children, and promoting supportive family environment for healthy adolescent development (77,78). An example of parenting programme specific to children with behavioural difficulties, includes the *Triple-P Positive Parenting Program*- a universal, multi-level family intervention, which has been adopted within the UK and other countries (79,80). Many variations of the Triple-P programme exist (depending on programme's focus (e.g. children with challenging behaviour; conduct disorder), and most have been considered to be medium to low-cost to implement (34,80).)

Mindfulness-based parenting programmes also show potential benefits in increasing parental emotional awareness and regulation, reducing parental stress, and decreasing symptoms in children associated with mental health problems, such as hyperactivity. Examples of programmes include the *Mindfulness-based Strengthening Families Program* (MSFP), which teaches parenting skills and mindfulness to parents and their children aged 10-14 years old, and has shown improvements in parenting practices, parent-child wellbeing, and parent-child relationship quality (78,81). Similar programmes, such as *Mindfulness-based Stress Reduction* (MBSR) (78,82) and *Turning Into Kids* (TIK), targeting parents of pre-schoolers have shown wider benefits including reduction in parental stress, and in some cases a reduction of hyperactivity symptoms in children (78,83,84).

Strengthening wider relationships

In early years, positive relationships with others (e.g. between a child and their primary caregiver) can provide nurturing environments, enabling wider positive health outcomes and resilience. A **resilient family environment** reflects the presence of adults acting as positive role models, demonstrating healthy positive relationships, promoting healthy behaviours, and with strong social networks, providing a stable living environment for the child (29). In adolescence, when peer relationships become more developmentally significant, **supportive friendships** can be an important protective element of resilience (14,29). **Mentoring and life skills interventions**, as well as **school-based and community-based programmes** can help build positive relationships with others, through positive role modelling and have shown improvements in academic achievements, social and emotional development; and the potential to also protect against the negative impact associated with ACEs (e.g. reduction in health-harming behaviours) (34,85).

Existing relationships with **community services** can also have broader benefits in enhancing family and children's resilience. Pre-school programmes such as nurseries, playgrounds and children centres play an important role in enhancing early protective factors in children, such as helping to develop good communication skills and foster emotional development and language through play and interaction with others (29). Having a good community provision of support services and information available to families about childcare, or special educational needs can also be resilience-enhancing (29). In schools, positive relationships with teachers can offer support and guidance, especially beneficial for children who may lack supportive family environments (56,86).

It is important to acknowledge that children who face significant adversities, such as ACEs (2), are less likely to have the opportunity to draw on assets in the home setting, and can be isolated from community and school opportunities to support resilience (2,32,87), reducing the development of resilience resources (e.g. positive, trusted relationships) (34). Missing key opportunities to develop protective resilience factors in childhood can have life-long consequences; lacking in skills, trust and confidence to build relationships in adulthood, alongside the longer-term impact of adversity in childhood on health and wellbeing (34).

5.1.2 Health and wellbeing promotion

Programmes and interventions to promote health and wellbeing amongst children and young people are largely delivered through educational settings. Young people's personal resilience and life skills can be effectively strengthened through school-based interventions directed at resilience (Section 5.1.4), and school programmes which foster the development of positive health and wellbeing (29,56,88).

Promoting physical health

School-based health promotion approaches can be cost-effective ways of contributing towards building resilience, through universal health promotion and embedding healthy behaviours in children (56,89), and leading to longer-term positive impacts in adulthood (90). For example, regular participation in sport groups has been shown to be protective resilience resource in childhood, as well as in later adulthood (2). A 2014 Cochrane review concluded that adopting the *World Health Organization's Health Promoting Schools* framework (89) shown improvements amongst young people (age four to 18 years) in specific health areas (e.g. increase in physical activity and fitness levels, decrease in smoking, increase in fruit and vegetable consumption and reduction in reports of being bullied) (89). Schools-based health promotion and behaviour change programmes have been shown to be cost-effective. In early years, school-based health promotion programmes have demonstrated a return on investment for building foundations of healthy behaviours, with positive impact extending to healthy social and emotional development in later life (56,73,90,91). Smoking prevention in schools return of £15 for every £1 spent over a lifetime (56,92).

School-based health promotion approaches are most effective when implemented across the whole school than discrete health promotion lessons, particularly if health is specifically integrated in the curriculum (89,93), and key messages extend from schools to families and local communities (34,56,70). School-based health promotion activities, rolled out as a whole-system, multi-level approach (embedded in school ethos, curriculum and linked to wider support networks) have been shown to have a positive impact on increasing resilience in teachers and students (56,94,95), as well as improved level of partnership between schools, health service providers, and families (96). In Wales, an example is the *Welsh Network of Healthy Schools Schemes* (Box 5).

Box 5. Welsh Network of Healthy Schools Schemes (WNHSS) (97–99)

Aim **To achieve healthy lifestyles for the whole school, developing supportive health enhancing environments (physical, social). The programme aims to achieve this by strategic planning, staff development about its curriculum, ethos, community relations, and physical environment. WNHSS plays a key role in promoting health of children and young people.**

Design and delivery

Originally established as part of the WHO initiative- European Network of Health Promoting Schools (ENHPS) and later defined as a network of local healthy school schemes, one in each local authority in Wales. The WNHSS was established in order to integrate health improvement into school life (97).

It is a national network of local healthy schools schemes which help schools in their areas to promote health, based on a whole-school approach. Each scheme employs a local coordinator to help with training and accreditation, and each school appoints a within school coordinator to help implement the actions identified by the school. It is a Welsh Government programme, managed by Public Health Wales. In 2011, The Healthy and Sustainable Pre-school Scheme was developed as an extension of the WNHSS. In 2015, the Healthy and Sustainable Higher Education/Further Education Framework was launched, as an extension to cover aspects of college and university life. Each local scheme is responsible for supporting the development of health promoting schools in their area.

Schools can choose from seven health topics

- Food and fitness, mental and emotional health and wellbeing, personal development and relationships, substance use and misuse, environment, safety, and hygiene.

Organisations are expected to introduce health improvements topics within four domains (set of indicators): leadership and communication, family and community, planning and delivery, ethos and environment. Schools identify key actions they want to implement and set a SMART plan to deliver this. A local coordinator helps to monitor progress.

Outcome

- Outcomes of the WNHSS in the short-term were achieved (97).
- Effective partnership established at national level (97).
- By 2008, more than 85% of schools in Wales had joined the local HPS schemes (97).
- Significant progress in promoting health was made, however with lack of consistency in standards across the schools in the same scheme (97).
- Differences reported in local circumstances and between schemes resulted in variable results of WNHSS in addressing inequalities at national, local and school level (97).
- Details on process evaluation of WNHSS undertaken can be found in (97).

Location Wales and UK

Promoting mental wellbeing

Universal school-based interventions promoting mental wellbeing typically focus on enhancing social and emotional development. Programmes are commonly based on Cognitive Behavioural Therapy (CBT) principles, targeting multiple protective factors for resilience (88), and have been shown to be effective at reducing depression, anxiety symptoms and general psychological distress amongst school children (in comparison to a control group) (88). The extent of benefits to mental health outcomes can vary depending on age, as the programmes can be sensitive to age, type of mental health outcome targeted, and length of follow up. For children, universal school-based resilience interventions are particularly effective at reducing anxiety symptoms and general psychological distress (88); and for adolescents, positive effects relate to the reduction in internalising of problems, and depression and anxiety symptoms (88). One example is the US *Penn Resiliency Programme (PRP)* (Box 6), with its UK implemented adaptation, the *UK Resiliency Program* (UKRP). Results from the evaluation of the implementation of URKP in 22 schools across the UK show a reduction in depression and anxiety symptoms within a two-year follow up period, with greater benefits reported for children with lower academic achievements and higher vulnerability at baseline (100,101). Positive changes were seen to last within the academic year, and a greater effect was associated with a weekly frequency of workshops (100,101).

Box 6. Penn Resiliency Programme (PRP) (102–105)

Aim **Prevention of depression onset and anxiety, and enhancing resilience through the development of effective problem-solving skills; realistic thinking and adaptive coping (102).**

Delivery and Design

The intervention was originally developed by a team of psychologists from the University of Pennsylvania (e.g. Seligman), based on Albert Ellis' Cognitive Behavioural model. The universal programme includes teaching children strategies to enhance resilience competencies including: emotional intelligence; flexible and accurate thinking; assertiveness and negotiation skills. Originally designed to support a school curriculum in primary and secondary schools, but its use has been expanded to other age groups (adolescents, adults) and tested in a range of other settings, including the health and military sectors. Can be delivered as both, targeted or universal approach (103).

Outcomes

- Reduction in depressive symptoms at post intervention and at 12 months follow up, with effect sizes ranging from (0.11-0.21) (103), compared to youths who received no intervention (103).
- Reduction in symptoms of hopelessness and improvements in active coping for those with average or high level of hopelessness at baseline (105).
- A PRP programme that also includes parents in the intervention shows improvements in children in clinical levels of anxiety symptoms, compared to controls (104).
- Results from interventions with Middle School students report increase in wellbeing and optimism and improved physical health (102).

Location USA

5.1.3 Building mental capital

Resilience interventions in schools commonly target the development of resilience-enhancing skills in children, with a central focus on the development of cognitive and emotional skills, social competence, self-esteem and autonomy. With the intervention taking place in a school setting presenting an opportunity to simultaneously address multiple protective factors (56,88,95,106). Programmes focusing on building social and emotional skills in children have demonstrated a positive impact on strengthening resilience in children, enabling good foundations to build positive relationships, enhance social capital, and promote cognitive and emotional development (34,73,107,108). An example, implemented in the UK across primary and secondary schools, includes the SEAL (Social and Emotional Aspects of Learning) programmes (109,110). SEAL programmes can include a number of programmes, typically focused on developing social and emotional competencies in children to strengthen resilience, by building self-awareness and self-management, and decision-making skills (108). The SEAL programmes have been widely implemented and evaluated, and have shown improvements in children's social and emotional competencies (108).

Programmes addressing **social and emotional learning** (SEL) in schools to prevent conduct disorder such as the well-evidenced *Promoting Alternative Thinking Strategies (PATHS),* have shown a positive impact on children's social and emotional skills (111). Overall, interventions focused on preventing conduct disorder have been shown to be cost effective (112), with UK estimates of a return of £8 for every £1 invested (73,109). Improvements in resilience skills have also been reported to be associated with broader positive impact on academic achievements and behavioural outcomes (56,106), and can be beneficial when supporting transitions from primary to secondary schools (56).

Equally important, is developing **cognitive skills** in children to enable effective psychological functioning and coping strategies to enhance capacity to deal with challenges presented. Interventions based on CBT principles, targeting the development of children's problem-solving, decision-making, positive thinking, and relationship-building skills are also effective at improving overall resilience (106). CBT-based approaches can be commonly accompanied by complementary programmes, evidence-based psychological techniques such as positive psychology, mindfulness or coaching (88).

In schools, there is a great value in **enhancing teachers' understanding and skills** in promoting resilience and emotional wellbeing, as these are reflected in the teacher's ability to create supportive environments for promoting resilience (56) in children and improving their wellbeing. This approach is particularly beneficial when working with children facing disadvantage or poverty (56). Examples of programmes include *YoungMinds; Creative Confident Kids or Aiming for High,* which have been specifically designed for improving resilience (56).

5.1.4 Community-based approaches

The physical and social environment, and spaces in which children exist are essential to their wellbeing (56,113). Family and schools are key settings for establishing foundations for children and young people's resilience, and the wider community is also important for building strong relationships and providing a sense of belonging, contributing to social capital. The school can act as a key community hub, helping to reinforce community networks and links with key services and community activities (56,113). Therefore, interventions to support resilience in children and young people have greater gains when they are **whole-system approaches -** simultaneously targeting individual, family and community levels (6).

Whole-school approach

Adopting a whole-school approach (embedded across the school curriculum and ethos, and supported by all staff), has been shown to have a positive effect on enhancing children's wellbeing and resilience (56,95). A whole-school approach includes universal promotion of health and embeds emotional intelligence, life skills, social and emotional learning and emotional literacy for the benefit of all children (56). Success is dependent upon how well the intervention has been implemented (compared to baseline), and embedded into school alongside its daily demands (29). Effective forward planning, training of school staff, coordination of leadership and communication within school, and adaptability of the intervention to local needs are essential factors for consideration in addressing schools' capacity for programme implementation and its positive outcomes (106). Sustainability of a whole-school approach can benefit from engagement with teachers and parents to develop and deliver programmes, which can help build capacity in the long-term (110).

The key challenge for school-based interventions is embedding approaches that work equally well for main stream children, but are also inclusive of marginalised or more vulnerable young people, such as children with complex learning difficulties who may be at even greater need (114). Recognising that targeting inequalities, such as valuing basic principles of decent breakfast, provision of clothes, and a good school-parent interactions can be a useful complementary strategy to enhance resilience at particularly at-risk youth, or those affected by other health or social inequities (114).

When considering implementing resilience interventions, it is important to first acknowledge elements of existing initiatives within schools, which already have the resources in place (106), so that the efforts are not duplicated but complement (110).

Whole-system approach (individual, family, school, community)

Strengthening resilience through a **whole-system approach spanning school and home life** can help develop resilience competences in children, as well as facilitate links between school and home life (95). The strongest evidence for a positive effect of resilience-based intervention in schools has been reported for schools with a joined-up approach, working at multiple levels (individual, family and community) (34,56,114) and focusing on developing key skills in children across the three levels (i.e. problem-solving, communication and relationship skills) (114). An example, adopted in Wales, the UK, and worldwide is the *Families and Schools Together (FAST) programme* (56)**.** It focused on strengthening resilience through building strong bonds and relationships between families, schools, and the local community (34,56,111). The programme supports families to get involved in their child's education and is typically implemented in areas of high deprivation, delivered in school setting, and has shown improvements in child's academic outcomes, as well as reduction in anxiety (34,115). Economic estimates suggest that for each $1 invested, there was $0.46 return in benefits realised (34,116).

A joined-up approach targeting school and home life is particularly beneficial for improvements in health and wellbeing outcomes of young people with complex needs, yet requires a more high intensity intervention tailored to individual needs rather than a universal approach (114). Other effective examples include running an intervention in parallel for parents, children and teachers,

focused on developing communication skills, conflict and stress management (114). This may involve applying similar reward systems (at home and in school), but can also embed softer connecting approaches, such as organising school-family-community vegetable gardens (114).

For adolescents who are facing adversities, a joined-up resilience approach can be central to change, as it helps to emphasise and connect the assets and resources available to the young person (117). This requires strong partnership between the local community, services, and local agencies (34). Due to the multidimensional nature of resilience, approaches need to target multiple protective factors, and should be designed to target child's age-appropriate developmental needs (117).

It is important to acknowledge that the positive impact of resilience protective factors can differ depending on situational context, characteristics of the targeted population, cultural context, as well as outcomes studied. Understanding the needs of the children and young people is essential to inform action.

Enhancing participation through community engagement

Building connections with the community are important for enhancing social capital in children (114), as well as creating bonds that can contribute towards wider collective resilience. Creating opportunities for participation and meaningful engagement, such as involvement in art or sport activities, can positively contribute to children's resilience through the development of social skills, as well as improvement of children's broader psychosocial outcomes (56,114).

Engaging children in community-based art activity programmes (e.g. dance; drama; music; visual arts) shows positive improvements in psychosocial outcomes (e.g. self-esteem; sense of mastery, problem-solving), as well as social skills (e.g. feeling part of a group; developing trust, building positive relationships) (118), factors associated with positively contributing to children's wellbeing and resilience (118). Improvements in the above factors can have a much broader behavioural impact, leading to a reduction in behavioural incidents, as well as improvements in academic achievements (118). Having opportunities to choose is a critical factor for successful engagement of children (118).

Encouraging active engagement in art or sport activities within or outside the schools setting is beneficial for strengthening resilience in children, contributing to a positive school experience, potentially overcoming adversities and improving resilience through improved confidence and self-esteem, and opportunities to build positive relationships (118). Community-based creative arts activities provide a broader social environment, involving experiences of supportive peers, positive role models and as such creating opportunities to experience a sense of mastery and success; all characteristics positively associated with resilience in adolescence (2,56,118). Evidence of the benefits of extracurricular activities largely comes from qualitative studies that do not measure resilience concept directly, but rather focus on enhancing protective factors positively associated with resilience in children (118).

There is evidence indicating that exposure to nature can also act as a moderator or resilience protective factor in children experiencing stressful life events; with evidence showing that children with increased exposure to nature seem to be more protected from impacts of stressful events, with one study suggesting that the strongest effect is visible for those most at risk, experiencing the highest levels of life stress (119).

Key messages

- Early intervention including establishing a healthy family environment, early positive parent-child relationships (or with trusted adult), are critical for setting the foundations of resilience in childhood through to later life.
- Programmes supporting positive parenting practices can help foster healthy attachment and development, through building parental knowledge, skills and support, demonstrating improvements in child and parental emotional awareness and regulation, child's behaviour, and their wellbeing.
- Supporting the development of positive relationships with others, e.g. through peer relationships, positive mentors and role models, have also been shown to support building resilience in childhood.
- There are a number of programmes focused on building a supportive school environment for children promoting positive health and wellbeing. School-based health promotion approaches have been shown to enhance social and emotional development, cognitive skills, mental wellbeing and reducing depression and anxiety symptoms – potentially setting foundations for healthy behaviours, and healthy social and emotional development in later life.
- Embedding whole-system approaches across schools, families, services, and local communities has been shown to reinforce skills in children beneficial for resilience (e.g. problem solving, communication and relationships skills), and may be of specific benefit to children who require more support.
- Providing community-based activities (e.g. sport, art, music, dance), offers the opportunity to participate and can build wider social networks, provide a sense of belonging, and benefit social capital.
- Interventions should be targeted to child's appropriate developmental needs. For adolescents facing adversities, a joined-up resilience approach can be central to change, as it helps emphasise resources and assets available.

5.2 Strengthening resilience in adults

Adult resilience is closely related to resilience in childhood, with resources and coping mechanisms gained during childhood likely to become habitual into adulthood (2,14,21). A resilient adult is able to recognise, celebrate and apply personal strengths, have a strong sense of control and effective problem solving skills alongside an ability to reflect and self-regulate their own emotional state (29). A resilient adult can make confident health choices, and has a strong sense of belonging and social skills (29) (Section 3.2.2).

Evidence-based programmes to strengthen adult resilience typically focus on enhancing psychological adaptability, building coping abilities to adapt to and manage stress, building positive relationships and strengthening social capital. Interventions typically use a combination of recognised evidence-based psychological techniques such as CBT (71), stress management and relaxation skills (e.g. Mindfulness, Acceptance and Commitment Therapy (ACT)) and effective coping strategies (e.g. coaching) (69,70,120).

The evidence comes predominantly from workplace-based programmes developed under the assumption that workplaces naturally present stressful situations, and therefore represent ideal settings for developing resilience (120). This does have the disadvantage that the evidence cannot be applied to adults who are unemployed, carers, or working in a voluntary capacity.

The key features identified in this review for building resilience amongst adults are (i) promotion of good health, (ii) building mental capital, and (iii) enhancing community engagement and positive relationships (Table 2).

Table 2. Types of evidence-based approaches to building adult's resilience

	Wellbeing	Social capital	Mental capital
Health and wellbeing promotion (Section 5.2.1) • Universal • Workplace-based (e.g. stress-directed resiliency training)	✓		✓
Building mental capital (Section 5.2.2) • Universal programmes • Targeted programmes			✓
Community-based Approaches (Section 5.2.3) • Enhancing participation through community links	✓	✓	

5.2.1 Health and wellbeing promotion

Universal

Feeling good and functioning well in adulthood through health promotion activities to address harmful behaviours and protecting health can contribute to resilience, together with addressing the causes of social and economic inequalities (73,120). Universal public health approaches in adulthood focus on promoting good health and preventing the uptake, or reducing the level of, health-harming behaviours e.g. smoking, alcohol consumption, physical inactivity, and unhealthy diet (73); and the early identification of ill-health (e.g. screening programmes). Universal approaches can also seek to create environments supportive of empowering individuals to make healthy lifestyle choices and maintain good health (29). However, the benefits of promoting good health are not realised by all, with certain groups remaining at a disadvantage, for example males in the less affluent groups have significantly lower life expectancy and spend 19 years less in good health (121).

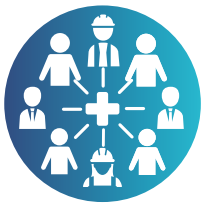
Workplace-based

Workplace resilience interventions commonly target improvements in employees' wellbeing and mental health outcomes (stress, anxiety, and depression) (69,71,120). Promoting and protecting employee health in the workplace can have a positive impact on wider workplace outcomes such as increased productivity and reduced absenteeism (29,71,120). Evidence from systematic reviews shows that workplace-based resilience interventions demonstrate improvements in staff wellbeing, including symptoms of anxiety, stress, depression and negative mood, as well as improved self-esteem and quality of life (29,71,120). Promising evidence shows also improvements in physical symptoms, such as reduction in fatigue (71). Cost-benefit studies for promoting wellbeing in the workplace indicate a return of £340,000 within one year, for £40,000 investment (73,109).

There are a number of workplace-based resiliency training programmes with foster a capacity-building approach to resilience, aiming to prepare individuals to cope better with future challenges (122). Stress-directed resiliency-training programmes based on CBT principles, and implemented within the general population before stress occurs consistently demonstrate a beneficial impact on psychological outcomes (e.g. depression, anxiety) associated with work stress, and enhancement in resilience at three months of follow up (122,123), and some evidence to suggest an improvement in quality of life (122). A recent systematic review has shown mindfulness and/or CBT-based resilience training to be consistently effective at enhancing individual resilience (123).

Before a resilience intervention is administrated in workplace-based setting a needs assessment of psychological wellbeing should be carried out to identify individuals with greater risks (as evidence shows that those who are more vulnerable and with lower wellbeing are more likely to benefit from the resilience interventions over time (120), and those identified as high risk may require further specialist referral). It is also important to consider assessing the effect of resilience interventions over longer time periods (e.g. 6-12 months post-intervention). As implementing short-term follow up periods (up to three months) may not capture the positive training effect of resilience interventions, where skills improve with time and practice (122) or when positive learning is lost over time.

5.2.2 Building mental capital



Universal workforce programmes

Universal workplace-based resiliency-training programmes promote positive psychological functioning and wellbeing by strengthening cognitive and emotional skills. Programmes seek to build, or strengthen, protective factors including a sense of optimism, problem-solving skills, self-efficacy, emotional awareness, self-regulation, ability to build positive relationships, and flexibility to stressors. Building strong relationships is critical to wellbeing, and interventions that teach interpersonal communication skills are also key, enabling better functioning, and those with high quality connections report also greater perception of safety and trust (124).

Most effective programmes use a combination of approaches to target multiple protective factors e.g. CBT principles to teach cognitive techniques for managing stressful situations, alongside self-regulation of mental, emotional and physical health in response to stress; and relaxation or breathing techniques.

Existing resilience workplace interventions vary greatly in terms of design, individual characteristics, and methodology, which is likely to contribute to variability in results between studies (71,120). Direct approaches such as one-to-one and group format delivery are most effective at engaging adults with the training, as the format is more attentive to trainees' needs compared to computer-based approaches or train-the-trainer models (120). Online training, although a growing field, typically reports challenges with low levels of participants' engagement and low training completion rates (120).

Targeted workforce programmes

For some sectors, e.g. the emergency services, the significant stress or trauma experienced may mean generic CBT-based approaches to mental capital are less effective. Targeted resilience-enhancing programmes for emergency personnel have been developed within the UK context, such as the *Blue Light programme* (Box 7). This has shown positive outcomes related to mental health promotion and face-to-face delivery of the programme, but there was no evidence of a statistically significant change in resilience amongst the participants (125).

A recently developed Australian programme designed for high stress-risk workplace settings (e.g. fire and rescue services) is *Resilience at Work* (RAW), which aims to equip workers with a range of practical skills and coping strategies (126). RAW is an online programme, completed at the participant's own pace, and based on mindfulness-based cognitive therapy, mindfulness-based stress reduction principles, and psychoeducation. Skills taught through the programmes are designed to be universal. To date, the programme has been implemented across a range of work settings (e.g. fire-fighters, paramedics, ambulance staff, hospital workers, journalists), and has repeatedly shown a positive trend towards increase in psychological flexibility, resilience, and wellbeing (126).

A further intervention that has been widely evaluated, but applied predominantly within army settings with soldiers, is the *US Comprehensive Soldier and Family Fitness programme* (CSF2) and its *Master Resilience Training* component (127). The programme has reported positive improvements in mental health outcomes (anxiety, depression, stress), and demonstrable reductions in risks of engaging in health-harming behaviours such as substance misuse (127). Resilience training has also been effective when delivered to employees during organisational restructure and redundancy, with examples including *TechWerks Resilience Skills Training* programme, delivered by the SAHMRI Wellbeing and Resilience Centre to workers from automotive industry in South Australia facing redundancy (128,129).

Box 7. Blue Light Programme: Resilience intervention for emergency workers (125)

Aim Intervention aimed at improving resilience and wellbeing outcomes for emergency workers.

Design and Delivery
In 2015, a pilot was delivered to emergency personnel in the UK, rolled over the period of 8 months, as part of the Blue Light Programme package, delivered by MIND.

Outcomes

- Staff who participated in the intervention showed no difference in levels of resilience at the three-month follow up compared to those that had received online intervention or waiting list control (125).
- However, a small proportion of the population, identified as more vulnerable to psychological stress, showed small improvements in their resilience and wellbeing scores at post-intervention (125).
- Components of the intervention that were perceived as the most useful by emergency personnel and associated with the greatest statistical improvements were modules focused on understanding anxiety, setting goals and challenges, reviewing and planning for the future (125).
- An evaluation of this intervention showed that teaching generic CBT and mindfulness techniques to emergency staff was not associated with any significant differences, nor improvements in levels of resilience, wellbeing, or mental health score compared to control intervention (125). Questions have been also raised whether the standard general measures are actually suitable to capture the stress or wellbeing experiences of emergency staff personal accurately (125). Highlighted was the lack of targeted resilience and wellbeing measures which should be specifically tailored to emergency staff's work and role context, with consideration of the type of stressors usually experienced (125).

Location UK

TechWerks Resilience Skills Training is a universal programme that can be also targeted to specific groups. The programme is based on train-the-trainer model, designed to strengthen personal resilience and wellbeing through teaching evidence-based practical tools to enhance individual's psychological resilience, and complemented by implementing the PERMA[1] and PERMA Plus[2] wellbeing measures. The training and PERMA wellbeing model has shown improvements in resilience amongst the workforce, across all key wellbeing indicators and with wider benefits to productivity and absenteeism (128). The SAHMRI programme has been applied with wide range of general population and consistently reports improvements in subjective wellbeing and psychological resilience, and reduction in psychological distress (128), with sustained positive effect over twelve months. Participants with the lowest wellbeing score prior to the intervention (e.g. those unemployed or facing retrenchment), reported the greatest improvements in resilience at post-intervention (128).

Evaluating interventions delivered in workplace setting is complex and challenging due to a lack of consistency in how resilience is defined and measured, and variability in the content and structure of the programmes, making it difficult to reach clear conclusions on what components work best (71,122). However, a common feature in the targeted resilience interventions is to ensure a good understanding of the context and type of specific stresses encountered by participants; as well as enabling the flexibility in the programme to identify and support those who might need more formal one-to-one support.

1 PERMA stands for Positive emotions, Engagement, Relationships, Meaning, and Achievement, developed by Martin Seligman, University of Pennsylvania
2 PERMA PLUS stands for Optimism, Physical activity, Nutrition and Sleep, developed by Martin Seligman, University of Pennsylvania and SAHMRI Wellbeing and Resilience Centre, available at https://www.wellbeingandresilience.com/perma-plus

There are a number of non-workplace-based programmes which typically promote universal wellbeing enhancing skills e.g. mindfulness, or approaches similar to the content of the PERMA model. For example, the American Psychological Association (APA) emphasises the importance of creating meaningful and lasting relationships; promoting active engagement with the community; having a sense of achievement, experiencing and learning to cherish positive emotions (130). However, it is important to consider that individuals with lowest resilience are also those least likely to have the opportunities to access and engage with resilience building resources (131).

5.2.3 Community-based approaches

Taking part in activities enabling social interaction and meaningful participation are crucial for developing adult resilience. Volunteering in the local community can contribute to enhancing health and wellbeing, reducing social isolation and loneliness, and can be supported through the creation of health champions, befriending schemes, and social network interventions (29). Volunteering and community-based physical activity (e.g. health walks) and regular access to green and blue spaces, have been shown to enhance physical, social, as well as environmental outcomes across all population groups and, as such also contribute to strengthening resilience in adults (29,132).

It is important to enable individuals to strengthen resilience skills, resources and capabilities, however, it is also necessary to recognise that these alone will not eliminate the effects of poverty or other inequalities often determined by structural conditions. Therefore, it is essential that resilience strengthening approaches work alongside existing strategies addressing underlying determinants of health.

Key messages

- Resilience in adulthood is closely related to resources and coping mechanisms gained in childhood, and influenced by the on-going interaction with environmental and contextual factors.

- For many adults, workplaces represent key settings for opportunities to enhance their wellbeing and resilience. Building capacities and coping strategies to better adapt to and manage stress and emotion regulations, enhancing psychological adaptability, as well as approaches focusing on protecting health, strengthening wellbeing and social capital - are key. Improvements in personal capacities can have a wider positive impact on wellbeing, and physical outcomes for adults, as well as productivity and absenteeism in the workplace.

- Functioning well and feeling good in adulthood can be protective of health and wellbeing, creating supportive environments to empower the individual to maintain good health through to later life. Key aspects for enhancing resilience in adulthood include focus on promotion of good health and mental wellbeing, enhancing positive relationships and social capital, building resilience skills and engaging with the community. Community-based activities such as volunteering, regular access to green spaces enable improvements in wider psychosocial and physical outcomes may be beneficial.

- Universal approaches can help build key resources and skillsets applicable across life domains. Programmes grounded in mindfulness or cognitive-based approaches, stress management, and focusing on resilience protective factors (e.g. optimism; good emotional regulation) demonstrate improvements in promoting positive psychological functioning. Occupations with high risk of stress may benefit from more targeted resilience training, developed with a good contextual understanding of the type of stresses typically experienced and capacities needed to manage. The majority of available evidence comes from studies with emergency or army personnel.

- Building resilience in vulnerable or at risk adult populations necessitates more targeted approaches to address specific needs, and recognising that those with lower resilience resources may be more likely to miss out on opportunities to participate in universally provided programmes. Approaches towards strengthening resilience need to ensure that universal resilience building programmes do not widen existing health inequalities. Increasing personal capacities, alongside addressing wider socio-economic determinants of health and creating conditions supportive of resilience is essential.

5.3 Strengthening resilience in older adults

Resilience does not decline with age. Research has shown that older people can be at least as resilient as younger people (29,58), and older adults as a population report improved mental health and wellbeing compared to younger age groups (133) (Section 3.2.2). Opportunities for improving older adults' resilience in later life do exist (134). The adversities older adults commonly encounter include adapting to ageing, poorer physical health and illness, cognitive decline, ability to maintain daily activities and remaining socially engaged, as well as socioeconomic stresses including financial difficulties, social isolation (which can contribute to decline in mental wellbeing (56)); and more defined events such as bereavement, changes in care requirements, and transition from hospital (21).

Programmes to enhance resilience in older adults (age 65 and above) typically focus on achieving healthy ageing (135) and positive outcomes for mental health and wellbeing through building positive relationships, strengthening social connections in the community (29,30,58), autonomy and independence (29), self-care and management of health, engaging in meaningful activities, and strengthening psychological coping skills. Overall, benefits of these approaches are reported as increased sense of happiness, positive mood, remaining socially engaged, improved abilities to maintain daily tasks, and life satisfaction – all of which are resilience-enhancing factors (57,135). A positive social network and being actively part of a community are especially critical factors, which have a positive impact on the health and wellbeing of older adults, associated with increased sense of quality of life (4,29).

The key features identified in this review for building resilience amongst older adults are (i) building caring relationships, (ii) promotion of good health, (iii) building mental capital, and (iv) approaches focused on the natural and physical environment (Table 3). However, there is a lack of robust evidence of demonstrating effectiveness of interventions directly focusing on improving resilience in older people (136). Many studies are small size and subject to recruitment bias, making it difficult to draw firm conclusions.

Table 3. Types of evidence-based approaches to building older adult's resilience

	Wellbeing	Social capital	Mental capital
Building caring relationships (Section 5.3.1) • Programmes promoting social participation (e.g. social activities, volunteering, reconnecting with the community)	✓	✓	✓
Health and wellbeing promotion (Section 5.3.2) • Promoting healthy ageing • Enhancing physical activity • Whole-system approach to health – multidisciplinary care	✓	✓	
Building mental capital (Section 5.3.3) • Self-esteem, social skills, problem-solving, coping skills, adaptive cognitive approaches			✓
Approaches focused on the natural and physical environment (Section 5.3.4) • Improving accessibility e.g. transport, housing structure; age-friendly environments; access to green spaces)	✓		

5.3.1 Building caring relationships

Activities promoting social inclusion and meaning for older people such as taking part in volunteering, community capacity building, befriending and being involved with grandchildren, can improve quality of life through maintaining continuous involvement with an important social network (29), and have been reported as beneficial to improving wellbeing and resilience outcomes (135). These activities are not only beneficial to the individual, but are essential in contributing to wider community social capital through few mechanisms, such as mixing with other people and age groups, helping to build cultural and community knowledge, and thus, also community resilience (137).

Capacity to strengthen social capital for the older adult is of great value to their overall wellbeing, with evidence suggesting programmes centred around group-based interaction are most effective mode of delivery for this population (29). Low level one-to-one interaction can also be helpful in harnessing resilience, for example telephone befriending has been reported to be beneficial in building confidence and helping to re-engage with the community (29,137), for those at risk of loneliness or isolation. Volunteering and community involvement can be particularly beneficial for older adults needing greater social interaction (134). It can provide older adults with networks beyond their immediate family, and enhance a sense of belonging and meaning (137–139). An example, includes peer-support programme aimed at providing social support and enhancing emotional resilience, such as the *Full Life Project* (Box 8).

Box 8. The Full of Life Project (100)

Aim **To strengthen emotional resilience and social networks of older people, and provide them with self-help skills to enable themselves to re-gain sense of control. The programme is based on five areas of CBT techniques. The programme helps participants identify problem areas and to equip them with tools and skills to introduce changes.**

Design and delivery
The programme is aimed primarily for people aged 65 and over. It is delivered by trained volunteers, who are recruited from local community and are of similar age range, however, do not present with issues. The programme is two folded, it aims to also increase emotional wellbeing of the volunteers delivering the training, not just participants. The programme is based on the *Living Life to the Full for Older Adults Aged 65+* programme.

Outcomes
Programme has been tested with different age groups. Piloted work in the UK received positive feedback, but only contained preliminary findings at the time (100). Small scale pilots undertaken in the UK (Manchester and South Tyneside) to test the applicability to volunteers and older participants (100). The piloted version in South Tyneside has been delivered as a group session, but also as individual telephone support (100). The programme has been also implemented by Cardiff and Vale of Glamorgan Mental Health team.

Location(s) Wales and UK and Canada

5.3.2 Health and wellbeing promotion

Promoting healthy ageing

Programmes to enhance resilience amongst older people can focus on enhancing resilience promoting factors, which in older age can include focus on promoting health, and specifically increasing physical activity- all important for healthy ageing. Research suggests that being physically active is a characteristic associated with higher resilience (134,140). Although, our search did not yield papers directly looking at benefits of health promotion in older age for resilience, in this section, we have considered looking at how health promotion and physical activity programmes can enhance some of the resilience associated protective factors, such as improvements in physical health and mental wellbeing (Sections 2 and 3).

Evidence from a systematic review shows that 20-minutes advice on physical activity, recommended by an exercise specialist, can be effective at significantly improving sense of vitality (136). A one-hour monthly home visit by a health promotion nurse can significantly improve mental wellbeing score, and reduce costs for prescription medication (136), which can act as resilience protective factors, thus helping to enhance positive life perspective and self-care. Positive benefits of health promotion programmes for older people are evident for interventions lasting between five weeks up to ten months (136). Group-based activities are particularly beneficial, providing the opportunity to strengthen social connections with improvements in mental health and wellbeing.

For particularly vulnerable older populations (e.g. socially isolated, socially disadvantaged), positive health benefits have been reported specifically if health promotion advice given is provided by a health professional (136). Investing in healthy and active ageing can be cost-saving and bring a considerable social return on investment (136). Health promotion advice delivered by community nurses was found associated with a cost per QALY[3] of £45,593 over six months (136). Exercises on strengthening mental wellbeing outcomes in older people show positive evidence on cost-effectiveness (136).

Enhancing physical activity

Longitudinal and cross-sectional studies indicate that engagement in regular physical activity of moderate intensity in the older age, can reduce risks of developing functional limitations by 50% (135,141), reduce cognitive decline by one third (135) and preserve cognitive functions (142). Taking part in physical activity programmes with individual or mixed exercise, overall shows positive impacts on older persons' physical and mental wellbeing, with reported improvements in resilience promoting factors such as mood, sense of happiness and life satisfaction remaining at six month follow up. The strongest evidence points towards a combination of **cardiovascular and resistance training** (136), including other activities such as **aerobic exercise,** and **strength and resistance training** (135,136,143,144). Greater impact on mental wellbeing has been reported when the physical activity is delivered in a community setting, supervised by a trained practitioner for at least three months (136), and when the activity is self-selected (136). According to National Institute for Health and Care Excellence (NICE) guidelines, it is important that the exercise is chosen based on the older person's preference and abilities level (144).

In terms of **individual physical activity**, engaging older people with regular physical activity such as **walking** has been evident as the most beneficial and cost-effective physical activity for older people (136,145). Community-based walking activity appeared to be cost-effective, with a cost per QALY of £7,372 over six months reducing to £4,915 at 12 months (136). Community-based mixed exercise programmes delivered twice weekly for two years yielded an incremental cost[4] per QALY gained of

3 QALY- quality-adjusted life years, a cost-utility analysis considering the length of life and quality of life gained as a result of an intervention. Interventions costing less than £20, 000- £30,000 per QALY can be considered cost-effective (NICE 2013) https://www.nice.org.uk/Media/Default/guidance/LGB10-Briefing-20150126.pdf

4 Incremental cost- the cost that on average needs to be sustained to obtain "one Life Year gained", needs to be sustained to obtain additional success.

£12,103 (136). NICE guideline recommends low-to-moderate community-based walking activities, as beneficial for improving mental wellbeing of older adults, activity that can be adapted to suit different abilities and health needs (144,145).

Whole-system approach to health

Research on resilience in the context of the older population aged 65 years and above, is driven by principles of positive psychology and emphasis on optimum ageing (146). The key principle for developing resilience at this life stage is targeting multiple components simultaneously, due to complexity of the age (e.g. comorbidity issues), and through the involvement of multidisciplinary team. High resilience in older age is typically viewed as leading to successful ageing, longevity and good mental wellbeing (134).

Coordinated multidisciplinary care can help with optimising resilience (via strengthening cognitive, emotional, physical and psychosocial repertoire), intervention components focusing on early prevention and better health management can enhance resilience to deal better with future adversity (146). Examples often include community-based intervention, reporting also wider benefits to health such as fall prevention, reduced hospital admission and better functional effectiveness (146).

5.3.3 Building mental capital

Enhancing skills to support psychological adaptation to successful ageing, better self-care, and independence is critical in strengthening healthy ageing, wellbeing and therefore, resilience in older people (135,147). Interventions that can emphasise positive emotions and a sense of optimism may be particularly beneficial in strengthening resilience (134).

The strongest evidence for enhancing coping skills in the older population refer to cognitive resilience skills training programmes, relaxation and control-enhancing techniques, most effective when based on CBT approaches (134,136). Critical factor for success is the right level of training provision (e.g. specialist training by a trained therapist/psychologist), and good understanding of the context, challenges and needs of the population. Improvements can also be achieved by promoting intrinsic capacity (e.g. encouraging healthy behaviours or removing barriers); and better functional ability (e.g. reducing the gap between the older person's level of capacity and what the surrounding environment enables the older person to achieve (e.g. assistive technology)) (135).

5.3.4 Approaches focused on the natural and physical environment

Creating age-friendly environments that are accessible, inclusive, safe, and health promoting can help enable social participation of older people, and as such enhance positive feelings of being involved, valued and connected. For example this can be achieved by improving the 'walkability' of neighbourhoods such as even pavement surfaces, availability and accessible public transport, appropriate signage to help orientate in the neighbourhood for people with vision problems (29,135).

Access to green spaces (e.g. parks) offer many public health benefits, including opportunities for physical activity, stress reduction and psychological relaxation, as well as the potential in urban spaces to reduce air and noise pollution (132). Interventions to increase urban green spaces show positive health and wellbeing benefits, and contribution to improved social and environmental outcomes across all population groups, including older population (132). There is some promising evidence in support of promoting access to green spaces, and the benefits of activities such as gardening, for older person's mental health (132,136,148). Green Prescribing for older people aged 65 years and over (e.g. activity counselling/prescribing with access to green space), delivered by

practice nurses with a telephone follow up was found to be associated with a cost per QALY[5] gained of £26,177 for 6 months and £30,396 per 12 months (136,149).

Good local infrastructure and inclusive local policies maximising the opportunities for learning, socialising and decision making for older people are all important - enabling older people to participate actively in their communities (29,135).

Key messages

- Resilience does not decline with age, and opportunities to improve older adults' resilience in later life, do exist. Good health and mental wellbeing are associated with greater resilience at all ages. Approaches to enhance older person's resilience from programmes identified in this review focus on building positive relationships, strengthening social connections and meaningful engagement with the community, alongside enhancing autonomy, independence and greater psychological adaptability are associated with greater sense of quality of life, positive mood, and greater resilience.

- Promoting good health, especially engaging in regular low intensity physical activity can benefit older persons' resilience, as well as wider health and wellbeing outcomes (e.g. positive mood, mental wellbeing, reducing cognitive decline), for example community-based physical activity, such as walking (as can be also easily tailored to level and needs), and mixed exercise programmes such as aerobic, strength and resistance training. Remaining physically active and enabling functional mobility is critical for an older person's sense of autonomy, and links to better mental wellbeing.

- Enhancing social capital is one of the most common forms of intervention in this age group. Volunteering or active community involvement can offer great value, extending social support beyond family, especially for those facing isolation or loneliness. Interventions that encourage, enable and enhance older persons' autonomy are beneficial for maintaining socialisation and contributing to resilience.

- Spending time in nature or green/blue spaces can offer relaxation, stress-reduction, and opportunities for physical activity, demonstrating wider health, social and wellbeing benefits.

5 QALY- quality-adjusted life years, a cost-utility analysis considering the length of life and quality of life gained as a result of an intervention. The interventions costing less than £20, 000- £30,000 per QALY can be considered cost effective (165).

5.4 Strengthening resilience in communities

Opportunities for a healthy life are closely linked to the conditions in which people are born, grow, work and age (21). Individual and community resilience are both connected to processes that result in good health and wellbeing outcomes (1) (Section 3.4). Facilitating community resilience requires coordinated and collective efforts from individuals, groups, organisations, and social institutions to enhance community capitals, as well as supportive structural conditions, and policy level context (Section 3.3.1).

A resilient community is healthy, cohesive, well-connected to other outside communities as well as within, able to utilise its resources well, and draw on strengths across its available community capitals (18,23,28,60) (Box 4, Section 3.3). Not all community capitals are always present, but communities with diverse set of capitals are often able to absorb, anticipate, and overcome adversities quicker and become less affected by sudden shocks (26,62). Strong social capital, can be particularly critical at mitigating negative impacts amongst communities where other community capitals might be lacking (60,62).

Some of the common themes in the literature to strengthen community resilience include:

- Creating supportive environments through the provision of **physical capital** (e.g. services, facilities, and resources (e.g. housing structure and quality); as well as enabling local communities to have the **capacity** and the right **infrastructure** to support people to access the capital (39). Enhancing a sense of control and promoting active participation of the community members are also key protective factors for personal mental wellbeing (150).
- Strengthening the **social capital** in the community (e.g. the extent and quality of social networks, connectivity of local organisation and across sectors, and power and trust relationships), strengthening access to and sharing of information. These elements can help develop strong partnerships between local organisations, strengthening neighbourhood relationships and opportunities for interaction, and can help empower a community to leverage its own assets (151). A cohesive community provides opportunities for engagement and support (152,153) and is important for strengthening and extending community networks, increasing access to outside resources to avoid too much interdependence and isolation (154). This also includes access to resources, and opportunities and power to influence change and key decisions.
- A vibrant environment and access to green spaces **(natural capital)** can contribute to good socio-economic wellbeing of the community, and in return also towards a good psychological wellbeing of community members (151). Other key community capitals such as **human capital** (e.g. skills, resources of the population) and **financial capital** (e.g. economic environment, labour market quality, locally based economy and businesses), all contribute to creating a supportive environment that plays a key role in contributing to community resilience.

Evidence-based approaches to building community resilience tend to focus on disaster resilience (preparation and recovery), and asset-based approaches to health and wellbeing. The underlying approaches to building community resilience, identified in this review are summarised in Table 4.

Table 4. Types of evidence-based approaches to building community resilience

		Human capital	Social capital	Physical capital	Natural capital	Financial Capital
Disaster focused	**Building community resilience: Preparedness for disasters** (Section 5.4.1) • Community health promotion • Assessing community capacity for change	✓	✓	✓		
	Building community resilience: Post-disaster context (Section 5.4.2) • Enhancing social capital and community competence • Strengthening provision and sharing of information	✓	✓	✓		✓
Asset- based	**Universal asset- based approaches** (Section 5.4.3) • Coproduction principles • Strengthening health assets	✓	✓		✓	

5.4.1 Building community resilience (preparedness for disasters)

Strengthening community resilience for disaster preparedness typically focuses on enhancing systems, knowledge and organisational capacities to raise awareness, enable quick mobilisation of staff, organisations and resources and readiness to act to mitigate negative consequences in case of emergency.

Community health promotion

Community health promotion strategies, focusing on building strong partnerships with local organisations can lay a crucial foundation for the context of enhancing community resilience to disasters (151). Principles of community engagement through public health promotion activities can help with leveraging existing community assets, and the coordination of links between a diverse range of local existing organisations (151). Utilising community resilience principles such as strengthening social connection and drawing on existing routine public health activities can be an effective preparation and help address some of the social and environmental issues that may emerge (151).

Assessing community capacity for change

Collaborative asset-mapping approaches in response to disaster can help communities to recognise their existing resilience promoting assets, alongside identifying community needs, vulnerabilities and priority areas for action, and opportunities for increasing capacities (151). The mapping exercise enables communities to initiate and embed sustainable responses, recognising the crucial role less formal but well-established organisations and informal partnerships (such as neighbourhood associations) can have in mobilising a community in preparedness or response (155). This approach is effective in enabling communities to assess their adaptive capacity to potential adversity, identify needs across the community, including high risk or vulnerable groups, and to ensure those needs are addressed in

any interventions towards strengthening resilience (151) (Box 9). For example, a range of initiatives exist in Wales to enhance community resilience to flooding, including flood maps, building physical flood defences alongside raising awareness amongst local residents and training key community members as flood wardens (coordinating efforts in terms of physical infrastructure alongside community engagement and support).

Box 9. The Enrich Project (156)

Aim **The intervention was focused on enhancing collaboration, connectedness, raising awareness and promoting community adaptive capacity to changing context (mobilise community).**

Collaborative asset-mapping tool has two parts:

1. Assets/needs assessment

Focusing on building relationships, generating awareness about assets and needs of individuals, community, organisations. This phase consists of:

- A full day session with community stakeholders from range of sectors
- Mapping community assets and strengths and support that may be needed across seven key categories (CHAMPSS Functional Capabilities Framework *e.g. Communication, Housing, Awareness, Mobility/Transportation, Psychosocial, Self-Care & Daily Tasks, and Safety & Security*)
- Focus group discussions

2. Collaborative asset-mapping

Consisting: 1) orientation session, 2) 10-week online collaborative asset-mapping task, and 3) tabletop exercise

Orientation session focuses on building relationships and focusing on CHAMPSS functional capabilities framework (155). For the **online session**, participants populate a collaborative asset spreadsheet over a 10-week period. Lastly, a **tabletop exercise**- participants attend a one-day session, designed to deal with a disaster scenario using the assets spreadsheet generated as part of the previous exercise. Communities can assess their adaptive capacity to adverse events and identify needs of the high risk/vulnerable population. An important aspect is to draw on the expertise and knowledge and to include them in consideration for contingency planning, in engagement with key community stakeholders.

Outcomes

- Building relationships and generating awareness about assets and needs of individuals, communities and local organisations (156).
- Identifying key community leaders, who may naturally emerge from focus group discussions; orientation sessions etc. (156).
- Enabling communities to assess their adaptive capacity to adverse events and identify needs of the high risk/vulnerable population (156).
- Enabling communities to create their own vision and customise the implementation, or merge with existing initiatives in the community (156).
- Particularly effective way to enhance inclusion of marginalised or vulnerable individuals and strengthen information network (156).

Location USA

5.4.2 Building community resilience (post-disaster)

Enhancing social capital and community competence (post-disaster)

Strong social networks and availability of local resources are key to community recovery from shared adversity. Interventions which focus to mobilise, maintain, and improve community resources are essential where the existing social support may be challenged following adversity (31,151). Strengthening community resilience in response to disasters, commonly include a focus on:

- Enhancing social capital
- Supporting community competence and capacity
- Strengthening provision and sharing of information

Community resilience interventions focused on building social capital in a post-disaster context (e.g. promoting opportunities for social interaction, increasing social support (157)). These interventions report improvements in communities' sense of social integration, with broader positive impacts on individual physical and psychological health (157). Developing community competence can also be resilience-enhancing. To embed positive changes within the communities in the long-term, it is essential that engagement is sustained and in ownership of the local community (152). Investment in supportive infrastructure can be also beneficial, strengthening opportunities for social engagement and enhancing connectivity, and as such community wellbeing (153). When introducing change, identifying local community members' key interests and priorities to initially engage with the community and enable shared action, is a priority. Further efforts focused on promoting opportunities for participatory decision-making can enhance sense of ownership, responsibility, self-sufficiency and self-reliance of the community (151,158).

Strengthening provision and sharing of information

Good information provision before and also after the disaster can help educate the community better about risks and actions to take to minimise negative effects; which can change people's readiness to act and resources available (151,157). Providing **financial assistance** and applying concepts of **micro-financing** can be beneficial in supporting the ability of the community to build capacity in a post-disaster context and allow small businesses to diversify to ensure economic continuity (157).

5.4.3 Universal asset-based approaches to building community resilience

A universal asset-based approach is a strength-based model, aimed at building on existing resources within the communities (154) and developing collective capacity to respond to change (159). Assets can represent local knowledge, skillsets and interests of local residents, health of the local population, access to nature, shared public spaces, social networks, effectiveness of local community and voluntary organisations and public services (16,160). Asset-based approaches commonly adopt a partnership-based way of working, building trust between community members and professional staff (16,155); focusing on **strengthening community capitals** with a strong emphasis on building **social capital.** Through creating opportunities for engagement and social interaction, and enabling people to enhance their support networks. The outcomes can be wider positive impacts on mental health and wellbeing and strengthened personal resilience, thus in return, also contributing to community resilience through keeping people engaged, healthy, and well (16,68,158). The approach commonly includes asset-mapping exercises, asset-based community development principles and participatory appraisal methods.

Asset-based approaches are often open-ended with outcomes that are more difficult to predict and may take time to emerge (68), it has been suggested that a long-term commitment is needed, preferably between 3-5 years (68). The asset-based models should however not be seen in isolation but rather as complementary to deficit-driven models, which are equally important for identifying problems and levels of need (See Box 10).

Box 10: Building a community resilience model in Anglesey (Seiriol) (161)

Aim **To create a resilient community, through developing a new way of engaging communities in decision-making, building on its successful record of joined-up working with the Third Sector and Town and Community Councils.**

Delivery and Design

Led by Anglesey Council in partnership with Medrwn Môn, based on a citizen-centred approach and asset-based community development principles; with the aims to create a shift in the balance of power between service providers and service users and involving local people in the decision-making. Delivery involved a 12-week period of consultation in the Seiriol ward (including public meetings, mapping activities, informal chats with local residents, community groups and local organisations). Emphasis was placed on engaging the most difficult to reach within the communities. Results from the consultation were used to develop community-based initiatives addressing issues such as low levels of health and wellbeing, loneliness, and social isolation.

Outcomes

500 individuals engaged. Collaboration and looking at the long-term benefits of meaningful engagement has allowed for more informed decision making within the ward. Services have allowed for more open and honest conversations between local services, communities and elected members (161).

Local elected and town and community councillors were engaging more effectively with local residents and have seen the benefits to gather valuable information that can be used in their planning. They have also benefited from using evidence gathered from the mapping stages to apply for funding for community-based projects (161).

The asset-based approach has highlighted the wealth of skills, knowledge and activities already existing in Seiriol to support communities to become more connected. These skills have been utilised by Anglesey Council who now ask the communities how they want to engage before planning engagement processes (161).

This type of approach takes a long time to develop and has challenged communities who prefer to see actions developed quickly, however some of the task and finish projects made possible through external funding, had challenged communities to address smaller issues with service providers and community councils in the meantime (161) .

Initial obstacles included the time needed to get the local communities, public services and town and community councils to change the way they thought about local decision-making and the balance of power in that context (161).

The partnership has been able to deliver on the needs identified following the development of trust, confidence and clear communication between all partners. The model is currently being adopted as an approach to create Alliances in the other 10 electoral wards on the Island and is an approach that has gained much interest from other external partners (161).

Location Wales

In order to stimulate change in communities, it is essential to identify and work alongside key community members with leadership qualities, who have the natural capacity to engage their community and communicate visions and share ideas (152). One approach is the **Tipping Point**, starting with the identification of key people within the community who are trusted members of the community who can help to engage the wider community to stimulate social change, through a social network mapping exercise (152). These include *connectors* with strong social networks, *mavens* who are skilled at communicating knowledge to connect people, and *salesmen* whose strength is communicating ideas to engage and persuade (152).

Coproduction principles to strengthening community resilience

Universal asset-based approaches to community resilience are typically delivered in partnerships between local people and key organisations (public, private, voluntary), based on principles of equal contribution, coproduction, and co-design. The approach aims to integrate, connect and align local expertise, knowledge, and resources to enable its population to be engaged, healthy, independent, and ultimately to enable the community to thrive. Community resilience programmes should be rooted in a place-based approach, acknowledging and understanding existing local knowledge and resources; and not to disempower natural resilience or worsen social inequalities.

Working with **coproduction principles** requires adhering to a set of values centred around power shifting, relationships built on mutual respect and trust, and acknowledgement of the value of every person's equal contribution (16,152). Examples include *Time Credit Schemes, Social Prescribing,* and *Tackling Loneliness Initiatives* (16). The programmes are designed to encourage individuals to be socially engaged, creating opportunities to extend social network, improve confidence and wellbeing - factors important for both individual and community resilience (Figure 3, Section 3.3). An example is The *Full of Life Project (or Living Life to the Full)*, a programme targeting social isolation of older people, co-designed and co-delivered by trained community members (16), which has shown improvements in wellbeing, mental health, social support, and sense of greater quality of life by those receiving as well as those delivering the programme (16) (Section 3.2.2).

Programmes promoting social inclusion in older people, such as volunteering, befriending, and community capacity-building such as time-banking can provide a considerable return of investment. Volunteering and community capacity-building can produce estimated return of £325 per person taking part in befriending schemes, and £850 per member participating in time banking (29,162). Time-banking can cost less than £450 per year per person, but can return savings of over £1,300 per member (159).

Health volunteering programmes can return between £4- £10 for every £1 invested (159,163). Evaluation of 15 specific *community health champion projects* found that they delivered a social return on investment[6] (SROI) of between £1- £112 for every £1 spent (159,164), and evidently, each estimated social return is above that invested.

Strengthening health assets

Strengthening community resilience through health promoting policies and asset-based approaches has been at the heart of local public health action, alongside supporting communities to engage and influence their own health and wellbeing, and coproducing solutions with local services (16,159). In a public health context, a resilient community is a collection of individuals characterised by an ability to actively participate in their communities, able to retain their independence, look after themselves and stay in good health (16).

6 Social Return on Investment (SROI) is a methodology, developed by New Economics Foundation that helps organisations understand and quantify their impact and social value. Financial value is applied to social and environmental outcomes that do not have a market price, such as self-esteem, quality of life, resilience, meaning and purpose, and supportive social relationships.

Key messages

- Building community resilience should not be considered in isolation from individual resilience, as the two are closely intertwined and are mutually dependent. Also, the wider economic and environmental system level context plays a critical role in determining the supportive conditions for growth and resilience, for any community.

- Overall, within both, disaster and universal community resilience building contexts, strongest emphasis is placed on enhancing social capital, and enabling environments that create opportunities to connect, increase social interaction and social support; with reported wider positive impacts on individual health and wellbeing.

- A sense of connectivity between community members, both formal and informal partnerships, is essential to enhance a community's ability to identify and quickly draw on collective assets to better manage, respond and anticipate shocks. This can enhance the sense of ownership and self-sufficiency within a community, to embed and sustain change.

- Methods such as asset-based community development, asset-mapping exercises and participatory-based approaches, underpinned by partnership-based working and the principles of coproduction represent useful tools for building community capacities to enhance community resilience.

6. Summary

Resilience is one of the goals of the *Well-being of Future Generations (Wales) Act 2015* (10), emphasising the importance of achieving a socially, economically, and ecologically resilient Wales. This literature review considers resilience at an individual and community level, describing the important contributing factors, and the interdependence between individuals and communities; and draws on examples of programmes to strengthen resilience across the life course and in communities. Increasing our understanding of these factors can help to inform where and how to act to build resilience.

6.1 Individual and community resilience and the interdependence between them

Resilience is a complex construct resulting from a dynamic interaction amongst modifiable risk and protective factors, spanning across individuals, communities, and systems. Resilience enables us to prepare for, adapt, respond to, and cope with adversity, as well as cope with and thrive in everyday life. Individual resilience can be considered as having three core overlapping elements; **wellbeing, mental capital,** and **social capital**. The protective intrinsic and extrinsic factors available to a person may change throughout their life course. For example, during childhood, positive familial relationships and developing cognitive, social and emotional skills are key to a resilient response. During adulthood, positive mental wellbeing, social networks, and housing and financial stability are all important. Whereas older people tend to be more resilient if they are satisfied with life, have good quality of life, and remain socially engaged.

Individual resilience is closely related to the resilience of the community, contributing to and drawing from social, human, financial (the local economy), physical, and natural capitals. Important features of both individual and community resilience are relationships and social networks. The individual characteristics that support strong interpersonal relationships are building blocks of **individual social capital.** These include **bonds** such as family or social level relationships, **bridges** that connect communities, and the **links** with those with power to influence change. All of these relationships and connections also contribute to **community social capital.**

Health, wellbeing, and resilience are inextricably linked, and resilience is protective of physical and mental health at both an individual and population level across the life course, as well as providing wider economic benefits. Applying **asset-based** approaches is effective in focusing on an individual's and community's capacity to create and sustain good health and wellbeing, and is key for building individual and community resilience (13). However, within individual and community resilience it is important to consider differences across groups, in the access to and ability to draw on assets to support resilience.

6.2 How do you build resilience?

Resilience points to processes, resources, and skills that have a positive effect on health and wellbeing outcomes, even in the face of negative events, such as serious threats and hazards. Strengthening resilience is key to protecting and promoting a sustainable approach to health and wellbeing, at both individual and community level. Individual resilience and health and wellbeing are inextricably linked, and factors that promote resilience are also important for promoting good health, linked to increased sense of control, empowerment, and self-efficacy.

Interventions to enhance individual resilience largely focus on enhancing skills and resources across three core elements (wellbeing, mental capital, and social capital), and have a specific focus across four key domains: **1) building positive relationships and strong social capital; 2) promoting positive health and wellbeing; 3) building mental capital,** and **4) creating opportunities for active engagement within the community**. Enhancement of skills or protective resources in one domain can have a positive spillover effect on the others.

The focus on these four key domains remains across the life course (from children and young people, adults, to older adults), but some are more critical than others, influenced by the challenges likely to occur at a particular life stage. Although early years are critical in creating the foundations for health, wellbeing, and resilience in later life - it is important to recognise that resilience is not a fixed state, and it can be modified throughout life, largely depending on circumstances, context, and type of threat presented.

Childhood

During **childhood**, interventions that promote positive parenting practices and a healthy family environment, establishing positive adult emotional bonds, and positive parent-child relationships are critical for setting the foundation of health and resilience in childhood; with long-lasting benefits through to adulthood and later life. Cost-benefit studies also indicate that investing in early intervention programmes demonstrate good value for money. In childhood, interventions or programmes focusing on establishing wider positive relationships with others, such as peers or mentors, can offer significant protective resilience resources to young people through positive role modelling, gaining skills for building positive lasting relationships, and building self-confidence.

Schools and communities are also important settings for children and young people, and school-based interventions play a key role in promoting universal health and wellbeing in children, and promoting positive social, emotional and cognitive development and skills - all considered protective resources for resilience. Approaches work best when implemented across the whole school, embedded into the school's ethos, rather than individual initiatives in isolation. School-based health promotion, establishing good foundations for healthy behaviours, and interventions focusing on developing key protective resilience resources and skillsets in children (e.g. problem-solving capacities, emotion-regulation, decision-making, self-confidence), building positive social relationships are critical in building long-lasting resources into later life, with great potential to mitigate negative impact for children who have experienced ACEs. Connection to the wider community is essential, as is participation in community-based curriculum activities (e.g. sport, art, music, dance); providing a sense of belonging, opportunities to build self-confidence and a wider social network.

Whole-system approaches that simultaneously link across schools, families, local services, and communities show positive impacts on increasing resilience in children, through improved partnership working, as well as increased adaptive capacities and opportunities to thrive. Therefore, a joined-up resilience-strengthening approach can help emphasise available resources and assets, which can be central to change and create a healthy supportive environment for resilience.

Efforts to reduce inequalities are instrumental in enhancing resilience at those at risk, or vulnerable youth. It is important that approaches to strengthening resilience in young people do not erode existing levels of resilience and considers targeting adequately the needs of groups already disadvantaged or marginalised.

Adulthood

Resilience resources gained in childhood set a key foundation for resilience in **adulthood**, as well as later life. In adults**,** approaches focusing on protecting health, strengthening wellbeing and social capital, and enhancing psychological adaptive capacities and sense of control are key for strengthening resilience resources. Much of the evidence on resilience interventions comes from workplace settings, with focus on strengthening key psychological adaptability and flexibility, enhancing coping strategies and building capacities to adapt to and manage stress, and self-regulate emotional states. Evidence suggests that programmes based on well-evidenced psychological therapy techniques, including stress management, CBT, and mindfulness are particularly effective at enhancing resilience.

Alongside strengthening psychological coping strategies, there is also a great benefit in workplace health promoting initiatives focused on promoting positive mental health and wellbeing, physical wellbeing, with the benefits extending beyond the individual to increasing work productivity and reducing absenteeism. Promoting good health, functioning well, and enhancing positive and supportive social relationships are key aspects empowering the individual to maintain good health, maintain positive support networks and engagement, and creating lasting and supportive environments.

Although approaches to building key resilience skills tend to be universal and easily applicable to other life domains, high-risk occupations require more targeted approaches, with a good contextual understanding of the stressors typically presented and capacities needed to manage these, and their transferability into practice.

Although workplaces naturally create opportunities for enhancing adults' resilience, those not in employment would not have the opportunities to access these. Other opportunities to strengthen resilience can be achieved through community engagement and interventions focused on building relationships, and strengthening of social capital. Universal resilience strengthening programmes however need to be inclusive, and work alongside existing health promotion and prevention strategies, rather than instead of. The challenges remaining include opportunities for strengthening resilience that are equitable, can address wider socio-economic determinants of health, enable sense of empowerment, and creating supportive environment, without eroding existing resilience.

Older adulthood

In **older age,** as in other life stages, good mental health and wellbeing are associated with greater resilience. In older age, resilience does not just decline, but continues to provide opportunities for further enhancement. Resilience at this stage is typically associated with healthy ageing, longevity, remaining socially engaged and maintaining day-to-day activities and autonomy, sense of happiness and optimism. Interventions aiming to enhance resilience in older adults typically focus on achieving healthy ageing, improving mental health and wellbeing outcomes, enhancing sense of autonomy and independence, and strengthening social connections and meaningful engagement in the community. Enhancing autonomy, maintaining independence, building self-confidence, and remaining socially engaged (e.g. social capital) is key. Building positive relationships can offer great social benefits in return, extend support and sense of control, and create meaningful social engagement.

Programmes that promote good health (e.g. community-based health promotion) and encourage engagement in regular physical activity (e.g. walking), show far-reaching benefits for wider health and wellbeing outcomes (e.g. positive mood, sense of happiness, mental wellbeing, reduction in cognitive decline), with greater impact when delivered in community or group-based settings. Remaining physically active can help with enhancing mobility, which is critical for maintaining an older person's independence and autonomy. Mixed-exercise programmes such as aerobic, strength and resistance training and walking show strongest positive benefits to health, especially if walking can be tailored to individual mobility and needs.

In addition, there is great value in strengthening psychological adaptability and flexibility (e.g. building self-esteem, encouraging healthy behaviour, sense of control), and enhancing positive emotions, which can be delivered through psycho-educational approaches. Relaxation or coping skills training programmes (based on CBT approaches) also show strong evidence of effectiveness, and spending time in green spaces can offer considerable benefits to stress-reduction, and have wider health and social wellbeing benefits. Creating an environment that is supportive of resilience, also requires environmental adjustment, which can include consideration of creating more age-friendly environments which are inclusive, safer, and accessible, and enable opportunities to connect and feel valued. Examples can include increasing walkability of neighbourhoods, such as better and more frequent public transport connections.

Most approaches to enhancing resilience work best when they are partnered with other complementary, multi-disciplinary approaches. Alongside enhancing intrinsic capacities, complemented by system-related initiatives can provide wider benefits, including for example fall prevention, better health management, and early prevention. Inclusive local policies that enable opportunities for older people to influence and be involved in decision-making, learning, and socialising is key - to enable active participation and creating conditions where they can feel valued and engaged.

Community

Communities can function in a range of resilience states (having different capacities to deal with adversity), with a range of community capitals - the resources available to the community -which can change over time. Developing community capitals is key to community resilience; and a resilient community has access to a diverse distribution of capitals, strongly connected members and organisations, has actively participating citizens and local leadership, sense of ownership, and good population health and wellbeing.

The wider context in which communities exist is influenced by **physical capital** (e.g. infrastructure, housing, having the right services and access to them), **financial capital** (e.g. economic climate, labour market), and **natural capital** (e.g. availability and use of natural recourses). As well as a supportive policy context that can strongly determine the resources available to communities, the distribution of key assets, and the supportive climate for resilience. The systems surrounding the communities can underpin access to opportunities and resources, as well as the existing inequalities and chances of experiencing adversity. Any resilience initiative (universal or targeted), needs to take into consideration, and be inclusive of, those experiencing poverty or disadvantage or vulnerability, and ensure that the existing health and social inequalities are not widened.

Central to both disaster and universal community resilience is the strong emphasis on strengthening **social capital**, alongside drawing on asset-based (or strength-based) approaches. Interventions that strengthen social connections, networks, levels of formal and informal partnerships, connections to key local organisations, and accessibility are critical; as well as the community's ability to mobilise and utilise resources quickly and coherently – requiring **human capital** (e.g. skills and capacity). Asset-based approaches, including methods such as participatory-based approaches, asset-based community development, and asset-mapping exercises are beneficial for enhancing community's awareness of assets and needs, and ability to assess their own capacity to absorb and adapt to change. Although asset-based approaches are often more open-ended, and can take a long time to emerge, the process is associated with embedding greater longevity, local ownership, and greater self-sufficiency; and as such sustainability. A resilient community is able to absorb shocks, can mobilise and utilise its resources well, and adapt and transform successfully in the context of challenges.

Overall, key community resilience approaches are those that encourage processes linked to enhancing sense of control, community self-sufficiency, empowerment, and ability to contribute to local decision-making, as well as strengthening connectivity between the population, key organisations, and those in power. These require working collaboratively, in partnership with the

local community and using local expertise, and utilising participatory-based approaches, driven by principles of coproduction and empowerment.

Interventions focused on improving personal and community resilience are closely associated with improving a wide number of health and wellbeing outcomes, and vice-versa, good health and wellbeing are often necessary for resilience. Therefore, drawing on existing public health promotion strategies, and partnerships can play a central role in helping to leverage and access assets, as well as ensuring good health and wellbeing of the community members and community.

Community resilience interventions should take a joined-up, co-ordinated, coproduction approach in partnership with local people, and groups and organisations embedded within communities, as well as with public and private sector. Interventions should take approaches based on **universal proportionalism**, with enhancement to reduce health and socio-economic inequities, and with a need to consider socio-cultural differences.

6.3 Challenges

Considering what works for building resilience, evaluating resilience interventions is complex and challenging. The lack of consistency in intervention design - structure, definition, and measurement of resilience, small sample sizes, length of follow-up time - makes it difficult to ascertain effectiveness and longevity of the impact (71,114). Particularly because many existing interventions are bespoke (120), which also means that positive impact can depend on situational context, characteristics of the population targeted, cultural context, as well as outcomes (stress factors, success indicators, and resilience) studied. Methodological quality of studies and poor quality of reporting (110), could be addressed by implementation of standardised reporting guidelines for resilience interventions (69,122).

There is also a lack of programmes that consider cost-effectiveness to help establish the value of interventions (70). This is even more so for the case of community resilience programmes, which are multi-faceted and complex. The approach is more commonly a process evaluation using qualitative or non-monetary methods, rather than outcome-focused; and many are developed organically rather than being built in from the beginning.

6.4 Key points

Resilience is commonly referred to as an ability to draw on strengths and assets to cope or thrive in adversity. Individual and community resilience are a modifiable set of interlinked qualities which can change over time, shaped by life experiences.

Resilient individuals contribute towards building resilient communities, and resilient communities are important for supporting the wellbeing, mental and social capitals contributing to individual resilience. Efforts to support resilience need to consider that the capacity for resilience, and the opportunity to benefit, is not equally distributed across all individuals and communities.

Given the complexity of the construct, measuring resilience over time is challenging. A combination of qualitative and quantitative approaches are likely to be needed to capture resilience within and between groups.

Early intervention including establishing a healthy family environment, early positive parent-child relationships (or with trusted adult), are critical for setting the foundations of resilience in childhood through to later life. Supporting healthy attachment and development of positive relationships with others, have been shown to support building resilience in childhood. Embedding whole-system approaches across schools, families, services, and local communities has been shown to reinforce skills in children beneficial for resilience and may be of specific benefit to children who require more support.

Key aspects for enhancing resilience in adulthood include focus on promotion of good health and mental wellbeing (e.g. mindfulness or cognitive-based approaches), enhancing positive relationships and social capital through engaging with the community. In adulthood, workplaces represent key settings for opportunities to enhance wellbeing and resilience, and occupations with high risk of stress may benefit from more targeted resilience training.

Approaches to enhance older person's resilience focus on building positive relationships, strengthening social connections and meaningful engagement, alongside enhancing autonomy, independence and greater psychological adaptability, contributing to quality of life, positive mood, and resilience.

Approaches towards strengthening resilience throughout the life course need to ensure that universal resilience building programmes do not widen existing health inequalities. Increasing personal capacities, alongside addressing wider socio-economic determinants of health and creating conditions supportive of resilience is essential.

Strengthening universal community resilience places greatest emphasis on enhancing social capital, and enabling environments to create opportunities to connect, increase social interaction and social support; with positive impacts on individual health and wellbeing. Methods such as asset-based community development, asset-mapping exercises and participatory-based approaches, underpinned by partnership-based working and the principles of coproduction represent useful tools for building community capacities to enhance community resilience.

Approaches to strengthening community resilience needs to consider individual resilience, as both are mutually dependent on each other. The wider economic and environmental system level context also has a critical role in determining the supportive conditions for growth and resilience, for any community.

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Our Priorities 2018-2030

Building and mobilising knowledge and skills to improve health and well-being across Wales

Influencing the wider determinants of health

Improving mental well-being and resilience

Working to Achieve a Healthier Future for Wales

Supporting the development of a sustainable **health and care system focused on prevention** and early intervention

Promoting healthy behaviours

Protecting the public from infection and environmental threats to health

Securing a **healthy future** for the next generation

Our Values:

Working together with trust and respect to make a difference

GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales

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Iechyd Cyhoeddus Cymru
Public Health Wales

Research and Evaluation Division
Knowledge Directorate
Public Health Wales NHS Trust
Number 2 Capital Quarter
Tyndall Street
Cardiff CF10 4BZ

Tel: +44 (0)29 2022 7744

@PublicHealth